

# Juniper Networks

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## Glossary

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## Symbols

(S, G) Source (S) of the multicast packet and the destination multicast group address (G).

## Numerics

**1X** First phase of third-generation (3G) mobile wireless technology for CDMA2000 networks.

**1XEV** Evolutionary phase of third-generation (3G) CDMA2000 networks, divided into two phases: 1XEV-DO (data only) and 1XEV-DV (data and voice).

**3D** Juniper Networks designation for the three-dimensional axes of scaling benefits that the programmable Trio chipset brings to MX Series 3D Universal Edge routing: bandwidth scale, subscriber scale, and services scale.

**3DES** Triple Data Encryption Standard. A 168-bit encryption algorithm that encrypts data blocks with three different keys in succession, achieving a higher level of encryption than standard DES. Data is encrypted with the first key, decrypted with the second key, and encrypted again with the third key. 3DES is often implemented with cipher block chaining (CBC). 3DES is one of the strongest encryption algorithms available for use in virtual private networks (VPNs). *Also known as Triple DES.*

**3G Wireless** Third generation of wireless developments, in particular mobile phone standards and technology.

**3GPP** Third-Generation Partnership Project. Created to expedite the development of open, globally accepted technical specifications for the Universal Mobile Telecommunications System (UMTS).

**464XLAT** Architecture defined in RFC 6877, *464XLAT: Combination of Stateful and Stateless Translation*, that provides limited IPv4 connectivity across an IPv6-only network by combining existing and well-known stateful protocol translation (as described in RFC 6146, *Stateful NAT64: Network Address and Protocol Translation from IPv6 Clients to IPv4 Servers*) in the core, and stateless protocol translation (as described in RFC 6145, *IP/ICMP Translation Algorithm*) at the edge. *See also* CLAT and PLAT.

**6rd** IPv6 rapid deployment. Mechanism to transmit IPv6 packets to and from an IPv6 end user over an Internet service provider (ISP) IPv4 network that lies between the end user and an IPv6 network (generally the IPv6 Internet). There is no need to configure explicit tunnels.

**6to4** IPv6 to IPv4. Internet transition mechanism for migrating from IPv4 to IPv6, a system that allows IPv6 packets to be transmitted over an IPv4 network (generally the IPv4 Internet) without the need to configure explicit tunnels.

<b>802.11</b>	IEEE specification for wireless LAN (WLAN) technology. The 802.11 standard specifies an over-the-air interface between the wireless clients, base stations, or both, typically in the 2.4 GHz and 5.0 GHz radio bands.
<b>802.1ad</b>	IEEE specification for “Q-in-Q” encapsulation and bridging of Ethernet frames.
<b>802.1ah</b>	IEEE specification for media access control (MAC) address tunneling encapsulation and bridging of Ethernet frames across a Provider Backbone Bridge (PBB).
<b>802.1p</b>	IEEE specification for enabling Layer 2 switches to prioritize traffic and perform dynamic multicast filtering.
<b>802.1Q</b>	IEEE specification for adding virtual local area network (VLAN) tags to an Ethernet frame.
<b>802.1X</b>	IEEE specification defining a mechanism that allows a supplicant (client) to connect to a wireless access point or wired switch (authenticator) so that the supplicant can provide authentication credentials that can be verified by an authentication server.
<b>802.3ad</b>	IEEE specification that enables grouping of Ethernet interfaces at the Physical Layer to form a single Link Layer interface, which is also known as a link aggregation group (LAG) or LAG bundle.
<b>802.3ah</b>	IEEE specification defining Ethernet between the subscriber and the immediate service provider. <i>Also known as Ethernet in the first or last mile.</i>

## A

<b>AAA</b>	authentication, authorization, and accounting. Process framework used to standardize the control of access to computer resources, enforcement of policies, audit of usage, and ability to report. Authentication determines who the user is and whether to grant that user access to the network. Authorization determines what the user can do by giving you the ability to limit network services to different users. Accounting tracks the user's activities and provides an audit trail that can be used for billing for connection time or resources used. <i>See also</i> redirected authentication.
<b>AAA profile</b>	Set of characteristics or commands that you can assign to domain names to control access for an incoming Point-to-Point Protocol (PPP) subscriber. You can create an AAA profile and map it between a PPP client's domain name and certain AAA services on given interfaces and control such things as domain name access to AAA authentication, use of domain name aliases, and other features. If no AAA profile is used, AAA continues as normal. The user's name and domain name are not changed as a result of an AAA profile mapping.
<b>AAL</b>	Asynchronous Transfer Mode (ATM) Adaptation Layer. A collection of protocols that defines the conversion of user information into cells by segmenting upper-layer information into cells at the transmitter and reassembling them at the receiver. These protocols enable various types of traffic, including voice, data, image, and video, to run over an ATM network.

<b>AAL5 mode</b>	ATM Adaptation Layer 5. One of four AALs recommended by the International Telecommunication Union—Telecommunication Standardization Sector (ITU-T), AAL5 is used predominantly for the transfer of classical IP over ATM, and is the least complex of the current AAL recommendations. It offers low bandwidth overhead and simpler processing requirements in exchange for reduced bandwidth capacity and error recovery capability. It is a Layer 2 circuit transport mode that allows you to send ATM cells between ATM2 IQ interfaces across a Layer 2 circuit-enabled network. You use Layer 2 circuit AAL5 transport mode to tunnel a stream of AAL5-encoded ATM segmentation and reassembly protocol data units (SAR-PDUs) over an MPLS or IP backbone. <i>See also</i> cell-relay mode, Layer 2 circuits, standard AAL5 mode, trunk mode.
<b>ABR</b>	<ul style="list-style-type: none"> <li>• area border router. Router that belongs to more than one area, with interfaces in the OSPF boundary between two or more areas. Both sides of any link always belong to the same OSPF area. <i>See also</i> OSPF.</li> <li>• available bit rate. Rate used in ATM for traffic sources that demand low loss ratios but can accept larger delays. ABR uses bandwidth not used by constant bit rate (CBR) and variable bit rate (VBR). ABR uses best effort to send the maximum number of cells but does not guarantee cell delivery. <i>See also</i> CBR, VBR.</li> </ul>
<b>absolute URL</b>	URL that points to the exact location of a file or directory on the Internet, by name. <i>See also</i> base URL, relative URL.
<b>abstracted fabric interface</b>	af interface. Pseudointerface that behaves as a first-class Ethernet interface. An abstracted fabric interface facilitates routing control and management traffic between guest network functions (GNFs) through the switch fabric. Because the fabric is the communication medium between GNFs, abstracted fabric interfaces are considered to be the equivalent WAN interfaces.
<b>AC</b>	access concentrator. Device that receives and forwards data for a network point of presence (POP). It often acts as a server that supports multiple T1 or E1 lines over one port, for example, a Juniper Networks E Series Broadband Services Router that acts as a server in a Point-to-Point Protocol over Ethernet (PPPoE) session.
<b>access challenge</b>	Authentication method used to prove the identity of a user logging in to the network. When a user logs in, the network access server, wireless access point, or authentication server creates a "challenge," typically a random number sent to the client machine. The client software uses its password or a secret key to encrypt the challenge, using an encryption algorithm or a one-way hash function and sends the result back to the network (the "response"). The authentication system also performs the same cryptographic process on the challenge and compares its result to the response from the client. If they match, the authentication system has verified that the user has the correct password.
<b>access concentrator</b>	AC. Device that receives and forwards data for a network point of presence (POP). It often acts as a server that supports multiple T1 or E1 lines over one port, for example, a Juniper Networks E Series Broadband Services Router that acts as a server in a Point-to-Point Protocol over Ethernet (PPPoE) session.

<b>access lists</b>	Sequential collection of permit and deny conditions used to filter inbound or outbound routes. Files that provide filters that can be applied to route maps or distribution lists. They enable policies to be created, such as a policy to prevent forwarding of specified routes between the BGP-4 and IS-IS routing tables.
<b>access messages</b>	Authorization and authentication (AA) messages that identify subscribers before the RADIUS server grants or denies them access to the network or network services. When an application requests user authentication, the request must have certain authenticating attributes, such as a user's name, password, and the particular type of service the user is requesting. This information is sent in the authentication request, using the RADIUS protocol, to the RADIUS server. In response, the RADIUS server grants or denies the request. <i>See also</i> accounting messages.
<b>Access Node Control Protocol</b>	ANCP. Based on a subset of the General Switch Management Protocol (GSMP) in which IGMP is no longer terminated or proxied at the access node. Instead, IGMP passes through the access node transparently. <i>Also known as</i> Layer 2 control (L2C).
<b>access point</b>	AP. Device that serves as a communication hub to connect 802.1X wireless clients to a wired network.
<b>access point name</b>	APN. An element in the header of a GPRS tunneling protocol (GTP) packet that provides information about how to reach a network. It is composed of two elements: a network ID and an operator ID. When Mobile Stations connect to IP networks over a wireless network, the GGSN uses the APN to distinguish among the connected IP networks (known as APN networks). In addition to identifying these connected networks, an APN is also a configured entity that hosts the wireless sessions, which are called Packet Data Protocol (PDP) contexts.
<b>ACCM</b>	asynchronous control character map. A 32-bit mask that represents control characters with ASCII values 0 through 31. It is an option negotiated by the Link Control Protocol (LCP) and used on asynchronous links such as telephone lines to identify control characters that must be escaped (replaced by a specific two-character sequence) to avoid being interpreted by equipment used to establish the link. <i>See also</i> APN.
<b>accounting messages</b>	Messages that identify service provisions and use on a per-user basis. They keep track of when a particular service is initiated and terminated for a specific user. RADIUS attributes are used by each group of accounting messages. <i>See also</i> access messages.
<b>accounting, accounting services</b>	In RADIUS, the process and method of tracking what the user did and when he did it. Accounting is used for collecting network data related to resource usage, as for an audit trail or for billing for connection time or resources used. <i>See also</i> broadcast accounting server, duplicate accounting server.
<b>ACFC</b>	Address and Control Field Compression. Compression method that enables routers to transmit packets without the two 1-byte address and control fields (0xff and 0x03) normal for PPP-encapsulated packets, thus transmitting less data and conserving bandwidth. ACFC is defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i> . <i>See also</i> PFC.

<b>action</b>	In Junos App Balancer, an action is invoked when an event handler is triggered as the result of a particular event occurring. Possible actions include writing to log files, sending an e-mail message, sending a SYSLOG message or SNMP trap, or running a custom action program.
<b>Activate Device wizard</b>	Feature in the Juniper Networks Network and Security Manager (NSM) user interface that guides you through activating a modeled device.
<b>active configuration</b>	File maintained by Junos OS containing the configuration that is currently operational on the device. When the candidate configuration is successfully committed after a user issues the <b>commit</b> command, the file becomes the active configuration. <i>See also</i> candidate configuration.
<b>active constituent</b>	Constituent that is monitored or controlled by the shared shaper mechanism. <i>See also</i> constituent, inactive constituent.
<b>active flow monitoring</b>	Flow monitoring carried out on the same router that forwards the packets being monitored. In contrast, a passive monitoring router does not forward the packets being monitored—it receives mirrored packets from a router that is performing the forwarding. <i>See also</i> flow monitoring.
<b>active route</b>	Route chosen from all routes in the routing table to reach a destination. Active routes are installed into the forwarding table.
<b>active state</b>	State of a switch route processor (SRP) module whereby data that was synchronized from the active SRP module to the standby SRP module during initialization remains synchronized through mirroring updates. <i>See also</i> SRP.
<b>adaptive services</b>	Set of services or applications that you can configure on an Adaptive Services PIC (AS PIC), including stateful firewall, Network Address Translation (NAT), intrusion detection service (IDS), Internet Protocol Security (IPsec), Layer 2 Tunneling Protocol (L2TP), and voice services. <i>See also</i> tunneling protocol.
<b>Adaptive Services Module</b>	ASM. On a Juniper Networks M7i Multiservice Edge Router, provides the same functionality as the AS PIC.
<b>Adaptive Services Physical Interface Card</b>	AS PIC. The physical card on which you can configure a set of adaptive services or applications, including stateful firewall, Network Address Translation (NAT), intrusion detection service (IDS), Internet Protocol Security (IPsec), Layer 2 Tunneling Protocol (L2TP), and voice services.
<b>Add Device wizard</b>	Feature in the NSM user interface that guides you through importing or modeling a new device.
<b>add/drop multiplexer</b>	ADM. SONET functionality that allows lower-level signals to be dropped from a high-speed optical connection.
<b>Address and Control Field Compression</b>	ACFC. Compression method that enables routers to transmit packets without the two 1-byte address and control fields (0xff and 0x03) normal for PPP-encapsulated packets, thus transmitting less data and conserving bandwidth. ACFC is defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i> . <i>See also</i> PFC.



<b>address family identifier</b>	AFI. Number assigned by IANA used to identify the protocol associated with an address family. In an MP-BGP update message, AFI is used with SAFI to identify the Network Layer protocol associated with the network address of the next hop and the semantics of the NLRI that follows. <i>See also</i> SAFI.
<b>address match conditions</b>	Use of an IP address as a match criterion in a routing policy or a firewall filter.
<b>address object</b>	Represents a component such as a workstation, router, switch, subnetwork, or any other object connected to the network. Use address book objects to specify the network components you want to protect.
<b>address pool</b>	In a NAT context, a group of IP addresses from which a NAT router obtains an address when dynamically creating a new translation.
<b>Address Resolution Protocol</b>	ARP. Protocol for mapping IPv4 addresses to media access control (MAC) addresses; dynamically binds the IP address (the logical address) to the correct MAC address. <i>See also</i> NDP.
<b>address scope</b>	Value used in some unicast and multicast IPv6 addresses that identifies the application suitable for the address. <i>See also</i> scope.
<b>address shifting</b>	Mechanism for creating a one-to-one mapping between any original address in one range of addresses and a specific translated address in a different range.
<b>address spoofing</b>	Technique for creating packets with a source IP address that is not the actual interface address. Attackers can use a spoofed IP address to perform DoS attacks while disguising their true address, or to take advantage of a trusted relationship between two hosts.
<b>adjacency</b>	Relationship between a pair of selected neighboring routers for exchanging routing information. Not every pair of neighboring routers is adjacent. A given router can have multiple adjacencies, but each adjacency consists of only two routers connected by one media segment. Packets that go between them do not have to pass through any other network devices. <i>See also</i> neighbor.
<b>Adjacency-RIB-In</b>	Logical software table that contains BGP routing information bases received from a specific neighbor.
<b>Adjacency-RIB-Out</b>	Logical software table that contains BGP routing information bases to be sent to a specific neighbor.
<b>ADM</b>	add/drop multiplexer. SONET functionality that allows lower-level signals to be dropped from a high-speed optical connection.
<b>admin server</b>	The administration interface to the Junos App Balancer, accessed through the Web-based user-interface.
<b>administrative distance</b>	Integer (in the range 0–255) that is associated with each route known to a router. The distance represents how reliable the source of the route is considered to be. A lower value is preferred over a higher value. An administrative distance of 255 indicates no confidence in the source; routes with this distance are not installed in the routing table. <i>Also known as</i> route preference.

<b>admission control</b>	Accounting mechanism that tracks resource information on a router-wide basis. Prevents requests from being accepted when sufficient resources are not available. Admission control determines whether a setup request can be honored for an MPLS LSP with traffic parameters.
<b>ADSL</b>	asymmetrical digital subscriber line. Technology that allows data to be sent over existing copper telephone lines, using the public switched telephone network (PSTN). ADSL supports data rates from 1.5 to 9 Mbps when receiving data (downstream rate) and from 16 to 640 Kbps when sending data (upstream rate).
<b>ADSL Annex A PIM</b>	Juniper Networks Physical Interface Module (PIM) that supports Annex A, the portion of ITU-T Rec. G.992.1 that defines how ADSL works over twisted-pair copper (POTS) lines. <i>See</i> ITU-T Rec. G.992.1, ADSL interface.
<b>ADSL Annex B PIM</b>	Juniper Networks Physical Interface Module (PIM) that supports Annex B, the portion of ITU-T Rec. G.992.1 that defines how ADSL works over ISDN lines. <i>See</i> ITU-T Rec. G.992.1, ADSL interface.
<b>ADSL interface</b>	asymmetrical digital subscriber line interface. Physical WAN interface that connects a router to a digital subscriber line access multiplexer (DSLAM). The ADSL interface allocates line bandwidth asymmetrically. Downstream (provider-to-customer) data rates can be up to 8 Mbps for ADSL, 12 Mbps for ADSL2, and 25 Mbps for ADSL2+. Upstream (customer-to-provider) rates can be up to 800 Kbps for ADSL and 1 Mbps for ADSL2 and ADSL2+, depending on the implementation.
<b>ADSL2 interface</b>	ADSL interface that supports ITU-T Standard G.992.3 and ITU-T Standard G.992.4. The ADSL2 interface allocates downstream (provider-to-customer) data rates of up to 12 Mbps and upstream (customer-to-provider) rates of up to 1 Mbps.
<b>ADSL2+ interface</b>	ADSL interface that supports ITU-T Standard G.992.5 and allocates downstream (provider-to-customer) data rates of up to 25 Mbps and upstream (customer-to-provider) rates of up to 1 Mbps.
<b>Advanced Encryption Standard</b>	AES. Defined in Federal Information Processing Standards (FIPS) PUB 197, the AES algorithm uses keys of 128, 192, or 256 bits to encrypt and decrypt data in blocks of 128 bits. Use AES in your VPNs when you need greater interoperability with other network security devices.
<b>advertisement</b>	Method used by a router to transmit basic information about itself, including IP address, network mask, and other data, to other devices on the network.
<b>AES</b>	Advanced Encryption Standard. Defined in Federal Information Processing Standards (FIPS) PUB 197. The AES algorithm uses keys of 128, 192, or 256 bits to encrypt and decrypt data in blocks of 128 bits. Use AES in your VPNs when you need greater interoperability with other network security devices.
<b>AF</b>	assured forwarding. A DiffServ component that determines the degree of reliability given a packet within the DiffServ domain. AF values are set as part of per-hop behavior (PHB) groups. <i>See also</i> PHB.

<b>af interface</b>	abstracted fabric interface. Pseudointerface that behaves as a first-class Ethernet interface. An abstracted fabric interface facilitates routing control and management traffic between guest network functions (GNFs) through the switch fabric. Because the fabric is the communication medium between GNFs, abstracted fabric interfaces are considered to be the equivalent WAN interfaces.
<b>AFI</b>	<ul style="list-style-type: none"> <li>• address family identifier. Number assigned by IANA used to identify the protocol associated with an address family. In an MP-BGP update message, AFI is used with SAFI to identify the Network Layer protocol associated with the network address of the next hop and the semantics of the NLRI that follows. <i>See also</i> SAFI.</li> <li>• authority and format identifier. Number that identifies the format and type of address being used.</li> </ul>
<b>AFR</b>	assured flow rate. A Media Flow Controller option that, when enabled, ensures that video or other media content is delivered at a rate that is minimally needed for the media to play smoothly.
<b>agent</b>	SNMP agent. A managed device, such as a router, that collects and stores management information. The SNMP agent (SNMPv3) recognizes up to 32 usernames that can have one of the following security levels: no authentication and no privacy, authentication only, authentication and privacy.
<b>aggregate route</b>	Single entry in a routing table that represents a combination of groups of routes that have common addresses.
<b>aggregate state</b>	State of a router when it is one of multiple virtual BGP routing instances bundled into one address.
<b>aggregated interface</b>	Logical bundle of physical interfaces managed as a single interface with one IP address. Network traffic is dynamically distributed across ports, so administration of data flowing across a given port is done automatically within the aggregated link. Using multiple ports in parallel provides redundancy and increases the link speed beyond the limits of any single port.
<b>aggregation</b>	Process of accumulating data or logical interfaces into a single, larger bundle (for example, higher-speed connections). The process of combining several different routes in such a way that only a single route advertises itself. This technique minimizes the size of the routing table for the router.
<b>aggregation device</b>	Device that runs Junos OS and manages the Junos fusion. The aggregation device has a connection to each satellite device in the Junos fusion and is responsible for all configuration tasks. <i>See also</i> Junos fusion, satellite device.
<b>aggregator</b>	Object used to bundle multiple routes under one common route generalized according to the value of the network mask.
<b>aggressive aging</b>	Mechanism to accelerate the timeout process when the number of sessions in the session table exceeds a specified high-watermark threshold. When the number of sessions in the table goes below a specified low-watermark threshold, the timeout process returns to normal.

<b>aggressive mode</b>	Internet Key Exchange (IKE) phase 1 negotiation mode that is faster than main mode because fewer messages are exchanged between peers and it enables support for fully qualified domain names when the router uses preshared keys. However, aggressive mode is less secure than main mode because it exposes identities of the peers to eavesdropping. <i>See also</i> main mode.
<b>AH</b>	authentication header. Component of the IPsec protocol used to verify that the data integrity of a packet has not changed, and to validate the identity of the sender. <i>See also</i> ESP.
<b>AIS</b>	alarm indication signal. Signal transmitted instead of the normal signal to maintain transmission continuity and to indicate to the receiving equipment that a transmission interruption (fault) has occurred either at the equipment originating the AIS signal or upstream of that equipment.
<b>AIS cell</b>	alarm indication signal cell. Type of ATM cell used to indicate a fault to the downstream endpoint.
<b>alarm</b>	Signal alerting you to conditions that might prevent normal operation. On the front of the chassis, the alarm signal is the yellow ALARM LED (when lit).
<b>alarm condition</b>	Failure event that triggers an alarm.
<b>alarm indication signal</b>	AIS. Signal transmitted instead of the normal signal to maintain transmission continuity and to indicate to the receiving equipment that a transmission interruption (fault) has occurred either at the equipment originating the AIS signal or upstream of that equipment.
<b>alarm severity</b>	Seriousness of an alarm. The level of severity of an alarm can be either major (red) or minor (yellow).
<b>ALG</b>	Application Layer Gateway, application-level gateway. Security component in a firewall or Network Address Translation (NAT) used to enable certain legitimate applications to pass through a firewall or between NAT realms without being stopped by security checks. It intercepts and analyzes the specified traffic, allocates resources, and defines dynamic policies to permit the traffic to pass securely through the security device.
<b>ALI</b>	ATM line interface. Interface between ATM and 3G systems. <i>See also</i> ATM.
<b>allowlist</b>	List or register of entities that provide a particular privilege, service, mobility, access, or recognition. It includes a profile of checklist attributes that cause an authentication, authorization, and accounting (AAA) server to permit an authentication request. For example, an allowlist profile might allow the phone numbers or IP addresses of the calling stations to be authenticated by the AAA server.
<b>ALS</b>	automatic laser shutdown. Laser shutdown performed by an optical inline amplifier (optical ILA) when input power at an input port of the optical ILA falls below the low threshold. <i>See also</i> optical ILA.

<b>alternate priority queuing</b>	APQ. Dequeuing method that has a special queue, similar to strict-priority queuing (SPQ), which is visited only 50 percent of the time. The packets in the special queue still have a predictable latency, although the upper limit of the delay is higher than that with SPQ. Because the other configured queues share the remaining 50 percent of the service time, queue starvation is usually avoided. <i>See also</i> SPQ.
<b>American National Standards Institute</b>	ANSI. Private organization that coordinates the development and use of voluntary consensus standards in the United States and is the United States' representative to the International Organization for Standardization (ISO). <i>See also</i> ISO.
<b>American Standard Code for Information Interchange</b>	ASCII. A code for representing English characters as numbers, with each letter assigned a number in the range 0–127.
<b>AMT</b>	Automatic Multicast Tunneling. Protocol that provides dynamic multicast connectivity between multicast-enabled networks across islands of unicast-only networks. AMT is described in detail in Internet draft draft-ietf-mboned-auto-multicast-10.txt, <i>Automatic IP Multicast Without Explicit Tunnels (AMT)</i> .
<b>analyzer device</b>	Device that receives mirrored traffic from E Series routers during packet mirroring. <i>Also known as</i> mediation device.
<b>analyzer port</b>	IP interface in analyzer mode on E Series routers used to direct mirrored traffic to the analyzer device during packet mirroring.
<b>ANCP</b>	Access Node Control Protocol. Based on a subset of the General Switch Management Protocol (GSMP) in which IGMP is no longer terminated or proxied at the access node. Instead, IGMP passes through the access node transparently. <i>Also known as</i> Layer 2 control (L2C).
<b>Annex M</b>	TU-DMT-BIS Standard G.992.3 and ADSL2PLUS Standard G.992.5 that extends the capability of basic ADSL2 by doubling the number of upstream bits.
<b>ANSI</b>	American National Standards Institute. Private organization that coordinates the development and use of voluntary consensus standards in the United States and is the United States' representative to the International Organization for Standardization (ISO). <i>See also</i> ISO.
<b>antispam</b>	Any software, hardware, or process used to combat the proliferation of unsolicited bulk e-mail (spam) or to keep spam from entering a system.
<b>antivirus</b>	Software used to detect, delete, or neutralize computer-based viruses or other malware.
<b>antivirus scanning</b>	Method for detecting and blocking viruses in File Transfer Protocol (FTP), Internet Message Access Protocol (IMAP), Simple Mail Transfer Protocol (SMTP), Hypertext Transfer Protocol (HTTP)—including HTTP webmail—and Post Office Protocol version 3 (POP3) traffic. Juniper Networks offers an internal antivirus scanning solution.

<b>any-source multicast</b>	ASM. Method of allowing a multicast receiver to listen to all traffic sent to a multicast group, regardless of its source.
<b>anycast address</b>	Type of address in IPv6 used to send a packet to one recipient out of a set of recipients or interfaces on different nodes. An anycast transmission sends packets to only one of the interfaces associated with the address, not to all of them; typically to the closest interface, as defined by the routing protocol.
<b>AP</b>	access point. Device that serves as a communication hub to connect 802.1X wireless clients to a wired network.
<b>API</b>	application programming interface. A set of routines, protocols, and tools for building software applications.
<b>APN</b>	access point name. An element in the header of a GPRS tunneling protocol (GTP) packet that provides information about how to reach a network. It is composed of two elements: a network ID and an operator ID. When Mobile Stations connect to IP networks over a wireless network, the GGSN uses the APN to distinguish among the connected IP networks (known as APN networks). In addition to identifying these connected networks, an APN is also a configured entity that hosts the wireless sessions, which are called Packet Data Protocol (PDP) contexts.
<b>application firewall</b>	Set of related programs in a network security system that controls the access, input, and output from, to, or by an application. Any of the actions that do not comply with the configured policy of the application firewall are blocked. These firewalls are used to control network traffic and to help prevent distributed denial-of-service (DDoS) attacks and other malicious behavior. <i>See also</i> DDoS.
<b>Application Layer</b>	<ul style="list-style-type: none"> <li>• Seventh and highest level in the seven-layer OSI Reference Model for network protocol design that manages communication between application processes. This layer is the main interface for users to interact with application programs such as electronic mail, database managers, and file-server software. <i>See also</i> OSI Model.</li> <li>• Fifth and highest level in the five-layer TCP/IP stack. This layer is used by most programs for network communication. Data is passed from the program in an application-specific format, then encapsulated into a Transport Layer protocol.</li> </ul>
<b>Application Layer Gateway,</b>	ALG. Security component in a firewall or Network Address Translation (NAT) used to enable certain legitimate applications to pass through a firewall or between NAT realms without being stopped by security checks. It intercepts and analyzes the specified traffic, allocates resources, and defines dynamic policies to permit the traffic to pass securely through the security device.
<b>Application-Level Gateway</b>	
<b>application programming interface</b>	API. A set of routines, protocols, and tools for building software applications.
<b>application signature</b>	Package that includes signature definitions of known application objects that can be used to identify applications for tracking, firewall policies, and quality-of-service (QoS) prioritization.

<b>application signature group</b>	Group that contains one or more application signatures that can be used in firewall, NAT, and software-defined WAN (SD-WAN) policies.
<b>application-specific integrated circuit</b>	ASIC. Specialized processor that performs specific functions on the router.
<b>AppRules</b>	The scripting language used to write rules for the Junos App Balancer.
<b>AppSecure</b>	A suite of next-generation security capabilities for Juniper Networks SRX Series Services Gateways that utilize advanced application identification and classification to deliver greater visibility, enforcement, control, and protection over the network.
<b>APQ</b>	alternate priority queuing. Dequeuing method that has a special queue, similar to strict-priority queuing (SPQ), which is visited only 50 percent of the time. The packets in the special queue still have a predictable latency, although the upper limit of the delay is higher than that with SPQ. Since the other configured queues share the remaining 50 percent of the service time, queue starvation is usually avoided. <i>See also</i> SPQ.
<b>APR</b>	automatic power reduction. Algorithm used by the optical inline amplifier (optical ILA) during recovery after an automatic laser shutdown (ALS) event. When the loss-of-signal (LOS) event is no longer present at the optical ILA input, before returning to the originally set power level, the optical ILA undergoes a transition to a safe, reduced output power level. <i>See also</i> ALS, optical ILA.
<b>APS</b>	Automatic Protection Switching. Technology used by SONET ADMs to protect against circuit faults between the ADM and a router and to protect against failing routers. <i>See also</i> ADM.
<b>AR</b>	assisted replication. Method to transport ingress broadcast, unknown unicast, and multicast (BUM) traffic in an efficient way. In assisted replication, you configure one or more supported devices (AR replicators) to replicate and forward BUM traffic on behalf of provider edge (PE) devices configured as AR leaf devices. <i>See also</i> AR leaf, AR replicator, PE device.
<b>AR leaf</b>	EVPN network device that supports assisted replication (AR) and sends broadcast, unknown unicast, and multicast (BUM) traffic to an available AR replicator device to handle the replication and forwarding of that traffic. <i>Also known as</i> AR client. <i>See also</i> assisted replication, AR replicator.
<b>AR replicator</b>	EVPN network device that replicates and forwards the ingress broadcast, unknown unicast, and multicast (BUM) traffic received from AR leaf devices through an AR overlay tunnel to other overlay tunnels and local attachment circuits. <i>See also</i> assisted replication, AR leaf, attachment circuit.

<b>area</b>	<p>Routing subdomain that maintains detailed routing information about its own internal composition as well as routing information that allows it to reach other routing subdomains.</p> <ul style="list-style-type: none"> <li>• An OSPF area divides the internetwork into smaller, more manageable constituent pieces, reducing the amount of information each router must store and maintain about all other routers. When a router in the area needs information about another device in or out of the area, it contacts a special router that stores this information, called the Area Border Router (ABR).</li> <li>• In IS-IS, an area corresponds to a Level 1 subdomain.</li> <li>• In IS-IS and OSPF, a set of contiguous networks and hosts within an autonomous system that have been administratively grouped together.</li> </ul>
<b>area border router</b>	ABR. Router that belongs to more than one area, with interfaces in the OSPF boundary between two or more areas. Both sides of any link always belong to the same OSPF area. <i>See also</i> OSPF.
<b>area range</b>	Sequence of IP addresses defined by a lower limit and an upper limit, indicating a series of addresses of devices existing within an area.
<b>ARI</b>	auto route insertion. Automatic insertion of a static route based on the remote IP address configured in a traffic selector (on SRX Series devices). <i>Also known as</i> reverse route insertion (RRI).
<b>ARP</b>	Address Resolution Protocol. Protocol for mapping IPv4 addresses to media access control (MAC) addresses; dynamically binds the IP address (the logical address) to the correct MAC address. <i>See also</i> NDP.
<b>ARP spoofing</b>	Type of attack in which the attacker gains unauthorized access to a trusted device on a LAN by sending spoofed Address Resolution Protocol (ARP) messages to associate the attacker's MAC address with the IP address of the trusted device. Consequently, traffic is misdirected and the attacker begins to receive traffic that is intended for the trusted device. The attacker can use ARP spoofing to control network traffic and initiate attacks such as denial-of-service attacks and man-in-the-middle attacks. <i>Also known as</i> ARP poisoning or ARP cache poisoning.
<b>arrayed waveguide grating</b>	AWG. Device used as an optical multiplexer and demultiplexer in wavelength-division multiplexing (WDM) systems. AWGs in an integrated photonic line card (IPLC) multiplex a large number of wavelengths into a single optical fiber, thereby significantly improving the transmission capacity of the network. <i>See also</i> IPLC.
<b>AS</b>	autonomous system. Set of routers that use the same routing policy while running under a single technical administration (a routing domain). An AS runs interior gateway protocols (IGPs) such as RIP, OSPF, and IS-IS within its boundaries. ASs use exterior gateway protocols (EGPs) to exchange routing information with other ASs. Assigned a globally unique autonomous system number. <i>See also</i> AS number.
<b>AS external link advertisement</b>	OSPF link-state advertisement sent by AS boundary routers to describe external routes that they have detected. These link-state advertisements are flooded throughout the AS (except for stub areas).



<b>AS number</b>	autonomous system number. A globally unique number assigned by the IANA that is used to identify an autonomous system (AS). The AS number enables an AS to exchange exterior routing information with neighboring ASs.
<b>AS path</b>	autonomous system path. In BGP, the route to a destination. It consists of the AS numbers of all routers that a packet must go through to reach a destination.
<b>AS path access list</b>	Access list used by a BGP routing instance to permit or deny packets sent by neighbor routing instances to the current virtual routing instance.
<b>AS path attribute class</b>	One of four classes of BGP path attributes: Well-Known Mandatory, Well-Known Discretionary, Optional Transitive, and Optional Non-Transitive.
<b>AS path string</b>	An identifier for an AS path, it is configured alongside an AS path access list ID.
<b>AS PIC</b>	Adaptive Services Physical Interface Card. The physical card on which you can configure a set of adaptive services or applications, including stateful firewall, Network Address Translation (NAT), intrusion detection service (IDS), Internet Protocol Security (IPsec), Layer 2 Tunneling Protocol (L2TP), and voice services.
<b>ASBR</b>	autonomous system boundary router. In OSPF, a router that exchanges routing information with routers in other ASs. The ASBR redistributes routing information received from other ASs throughout its own AS.
<b>ASBR Summary LSA</b>	OSPF link-state advertisement (LSA) sent by an area border router (ABR) to advertise the router ID of an autonomous system boundary router (ASBR) across an area boundary. <i>See also</i> ASBR.
<b>ASCII</b>	American Standard Code for Information Interchange. A code for representing English characters as numbers, with each letter assigned a number in the range 0–127.
<b>ASIC</b>	application-specific integrated circuit. Specialized processor that performs specific functions on the router.
<b>ASM</b>	<ul style="list-style-type: none"> <li>Adaptive Services Module. On a Juniper Networks M7i Multiservice Edge Router, provides the same functionality as the AS PIC.</li> <li>any-source multicast. Method of allowing a multicast receiver to listen to all traffic sent to a multicast group, regardless of its source.</li> </ul>
<b>assisted replication</b>	AR. Method to transport ingress broadcast, unknown unicast, and multicast (BUM) traffic in an efficient way. In assisted replication, you configure one or more supported devices (AR replicators) to replicate and forward BUM traffic on behalf of provider edge (PE) devices configured as AR leaf devices. <i>Also known as</i> assisted ingress replication. <i>See also</i> AR leaf, AR replicator, PE device.
<b>assured flow rate</b>	AFR. A Media Flow Controller option that, when enabled, ensures that video or other media content is delivered at a rate that is minimally needed for the media to play smoothly.

<b>assured forwarding</b>	AF. A DiffServ component that determines the degree of reliability given a packet within the DiffServ domain. AF values are set as part of per-hop behavior (PHB) groups. <i>See also</i> PHB.
<b>assured rate</b>	Quality of Service rate at which bandwidth is guaranteed until oversubscribed.
<b>asymmetrical digital subscriber line</b>	ADSL. Technology that allows data to be sent over existing copper telephone lines, using the public switched telephone network (PSTN). ADSL supports data rates from 1.5 to 9 Mbps when receiving data (downstream rate) and from 16 to 640 Kbps when sending data (upstream rate).
<b>asynchronous control character map</b>	ACCM. A 32-bit mask that represents control characters with ASCII values 0 through 31. It is an option negotiated by the Link Control Protocol (LCP) and used on asynchronous links such as telephone lines to identify control characters that must be escaped (replaced by a specific two-character sequence) to avoid being interpreted by equipment used to establish the link. <i>See also</i> APN.
<b>Asynchronous Transfer Mode</b>	ATM. A high-speed multiplexing and switching method utilizing fixed-length cells of 53 octets to support multiple types of traffic.
<b>Asynchronous Transfer Mode (ATM) Adaptation Layer</b>	AAL. A collection of protocols that defines the conversion of user information into cells by segmenting upper-layer information into cells at the transmitter and reassembling them at the receiver. These protocols enable various types of traffic, including voice, data, image, and video, to run over an ATM network.
<b>AT commands</b>	Instructions for controlling modems, originally developed by Hayes, Inc. for their modems and sometimes called Hayes commands. Each command line begins with AT (an abbreviation of ATtention), signaling that it is a modem command. This command structure is a de facto industry standard for modems, with specific commands varying by manufacturer.
<b>ATM</b>	Asynchronous Transfer Mode. A high-speed multiplexing and switching method utilizing fixed-length cells of 53 octets to support multiple types of traffic.
<b>ATM Adaptation Layer</b>	Asynchronous Transfer Mode (ATM) Adaptation Layer, AAL. A collection of protocols that defines the conversion of user information into cells by segmenting upper-layer information into cells at the transmitter and reassembling them at the receiver. These protocols enable various types of traffic, including voice, data, image, and video, to run over an ATM network.
<b>ATM Adaptation Layer 5</b>	AAL5 mode. One of four AALs recommended by the International Telecommunication Union—Telecommunication Standardization Sector (ITU—T), AAL5 is used predominantly for the transfer of classical IP over ATM, and is the least complex of the current AAL recommendations. It offers low bandwidth overhead and simpler processing requirements in exchange for reduced bandwidth capacity and error recovery capability. It is a Layer 2 circuit transport mode that allows you to send ATM cells between ATM2 IQ interfaces across a Layer 2 circuit-enabled network. You use Layer 2 circuit AAL5 transport mode to tunnel a stream of AAL5-encoded ATM segmentation and reassembly protocol data units (SAR-PDUs) over an MPLS or IP backbone. <i>See also</i> cell-relay mode, Layer 2 circuits, standard AAL5 mode, trunk mode.

<b>ATM cell</b>	Package of information that is always 53 octets long, unlike a frame or packet, which has a variable length.
<b>ATM line interface</b>	ALI. Interface between ATM and 3G systems. <i>See also</i> ATM.
<b>ATM subinterface</b>	Mechanism that enables a single physical ATM interface to support multiple logical interfaces.
<b>ATM-over-ADSL interface</b>	Asynchronous Transfer Mode (ATM) interface used to send network traffic through a point-to-point connection to a DSL access multiplexer (DSLAM). ATM-over-ADSL interfaces are intended for asymmetrical digital subscriber line (ADSL) connections only, not for direct ATM connections.
<b>atomic</b>	Smallest possible operation; an atomic operation is performed either entirely or not at all. For example, if machine failure prevents a transaction from finishing, the system is rolled back to the start of the transaction, with no changes taking place.
<b>atomic aggregate</b>	Object used by a BGP router to inform other BGP routers that the local system selected a generalized route.
<b>atomic configuration</b>	Fail-safe feature for devices running Juniper Networks ScreenOS Software. If the configuration deployment fails for any reason, the device automatically uses the last installed stable configuration. If the configuration deployment succeeds, but the device loses connectivity to the management system, the device rolls back to the last installed configuration. This minimizes downtime and ensures that NSM always maintains a stable connection to the managed device.
<b>attachment circuit</b>	Physical or logical circuit between a provider edge (PE) device and a customer edge (CE) device in an MPLS Layer 2 VPN. <i>See also</i> CE device, PE device.
<b>attack</b>	An attempt to exploit vulnerabilities in computer hardware and software. Depending on the severity, the attack might completely disable your system, allow access to confidential information, or use your network to attack other networks. <i>See also</i> severity.
<b>attack objects</b>	Object that contains patterns of known attacks that can be used to compromise a network. Use attack objects in your firewall rules to enable security devices to detect known attacks and prevent malicious traffic from entering your network.
<b>attenuation</b>	Decrease in signal magnitude between two points, which can be along a radio path or a transmission line or between two devices.
<b>attribute-value pair</b>	AVP. A RADIUS attribute value carried in a RADIUS protocol message. The pair is a combination of a unique attribute—represented by an integer—and a value containing the actual value identified by the attribute.
<b>AUC</b>	authentication center. Part of the home location register (HLR) in third-generation (3G) systems; performs computations to verify and authenticate a mobile phone user.

<b>audit log target</b>	Security device to which an audit log entry sent a directive.
<b>audit log viewer</b>	Module of the NSM user interface that displays records of administrative actions. Each audit log includes the date and time the administrative action occurred, the NSM administrator who performed the action, and the domain (global or a subdomain) in which the action occurred.
<b>authentication</b>	<ul style="list-style-type: none"> <li>• In RADIUS, the process of determining who the user is, then determining whether to grant that user access to the network. The primary purpose is to bar intruders from networks. RADIUS authentication uses a database of users and passwords.</li> <li>• Process that verifies that data is not altered during transmission and ensures that users are communicating with the individual or organization that they believe they are communicating with. <i>See also</i> IPsec.</li> <li>• Simple Network Management Protocol version 3 (SNMPv3) term related to the user-based security model (USM). Authentication provides the following benefits: <ul style="list-style-type: none"> <li>• Only authorized parties can communicate with each other. Consequently, a management station can interact with a device only if the administrator configured the device to allow the interaction.</li> <li>• Messages are received promptly; users cannot save messages and replay them to alter content. This prevents users from sabotaging SNMP configurations and operations. For example, users can change configurations of network devices only if authorized to do so.</li> </ul> </li> </ul>
<b>authentication center</b>	AUC. Part of the home location register (HLR) in third-generation (3G) systems; performs computations to verify and authenticate a mobile phone user.
<b>authentication header</b>	AH. Component of the IPsec protocol used to verify that the data integrity of a packet has not changed, and to validate the identity of the sender. <i>See also</i> ESP.
<b>authentication retry</b>	Feature of SSH that limits the number of times a user can try to correct incorrect information—such as a bad password—in a given connection attempt.
<b>authentication server</b>	A server that is populated with usernames and passwords to allow individuals to authenticate to the IC Series device and to access protected resources.
<b>authentication server objects</b>	Used to set a default authentication server for the global domain and each subdomain, or access an external RADIUS or SecurID system to provide authentication for NSM administrators and remote access server (RAS) users on your network.
<b>authentication, authorization, and accounting</b>	AAA. Process framework used to standardize the control of access to computer resources, enforcement of policies, audit of usage, and ability to report. Authentication determines who the user is and whether to grant that user access to the network. Authorization determines what the user can do by giving you the ability to limit network services to different users. Accounting tracks the user's activities and provides an audit trail that can be used for billing for connection time or resources used. <i>See also</i> redirected authentication.

<b>authority and format identifier</b>	AFI. Number that identifies the format and type of address being used.
<b>authorization</b>	In RADIUS, the process of determining what the user can do by giving a network administrator the ability to limit network services to different users.
<b>auto route insertion</b>	ARI. Automatic insertion of a static route based on the remote IP address configured in a traffic selector (on SRX Series devices). <i>Also known as</i> reverse route insertion (RRI).
<b>auto secure VMs, auto-secure virtual machines</b>	The vGW Virtual Gateway feature that allows security policies to be attached to virtual machines automatically. Auto-securing VMs streamlines policy application and efficiently ensures security throughout the protected virtual infrastructure. The auto-secure feature allows a user to specify that no VMs are secured, VMs in a specific group are secured, VMs with a policy or ones that are in a policy group are secured, or all VMs are secured.
<b>auto-RP</b>	Method of electing and announcing the rendezvous point-to-group address mapping in a multicast network. Junos OS supports this vendor-proprietary specification. <i>See also</i> RP.
<b>autodetection</b>	Process that determines the layers of each dynamic interface. Occurs when the router conditionally constructs interface layers based on the encapsulation type of the incoming packet. <i>Also known as</i> autosensing.
<b>autoinstallation</b>	Automatic configuration of a device over the network from a preexisting configuration file created and stored on a configuration server—typically a Trivial File Transfer Protocol (TFTP) server. Autoinstallation occurs on a device that is powered on without a valid configuration (boot) file or that is configured specifically for autoinstallation. Autoinstallation is useful for deploying multiple devices on a network.
<b>automatic commit mode</b>	Feature of Juniper Networks JunosE Software in which the system automatically saves any change to the system configuration to nonvolatile storage (NVS), without affecting the command-line interface (CLI) prompt.
<b>automatic laser shutdown</b>	ALS. Laser shutdown performed by an optical inline amplifier (optical ILA) when input power at an input port of the optical ILA falls below the low threshold. <i>See also</i> optical ILA.
<b>Automatic Multicast Tunneling</b>	AMT. Protocol that provides dynamic multicast connectivity between multicast-enabled networks across islands of unicast-only networks. AMT is described in detail in Internet draft draft-ietf-mboned-auto-multicast-10.txt, <i>Automatic IP Multicast Without Explicit Tunnels (AMT)</i> .
<b>automatic policing</b>	Policer that allows you to provide strict service guarantees for network traffic. Such guarantees are especially useful in the context of differentiated services for traffic engineered LSPs, providing better emulation for ATM wires over an MPLS network.

<b>automatic power reduction</b>	APR. Algorithm used by the optical inline amplifier (optical ILA) during recovery after an automatic laser shutdown (ALS) event. When the loss-of-signal (LOS) event is no longer present at the optical ILA input, before returning to the originally set power level, the optical ILA undergoes a transition to a safe, reduced output power level. <i>See also</i> ALS, optical ILA.
<b>Automatic Protection Switching</b>	APS. Technology used by SONET ADMs to protect against circuit faults between the ADM and a router and to protect against failing routers. <i>See also</i> ADM.
<b>automation</b>	Broad term that encompasses many levels of automating network functions. Automation can refer to managing virtual resources, physical resources, or both. Network automation capabilities can include configuring and provisioning network devices, spinning up and spinning down network services, managing network devices and services, and enforcing service-level agreements (SLAs). Automation reduces the operational overhead of network configuration, provisioning, and management.
<b>autonegotiation</b>	Used by Ethernet devices to configure interfaces automatically. If interfaces support different speeds or different link modes (half duplex or full duplex), the devices attempt to settle on the lowest common denominator.
<b>autonomous system</b>	AS. Set of routers that use the same routing policy while running under a single technical administration (a routing domain). An AS runs interior gateway protocols (IGPs) such as RIP, OSPF, and IS-IS within its boundaries. ASs use exterior gateway protocols (EGPs) to exchange routing information with other ASs. Assigned a globally unique autonomous system number. <i>See also</i> AS number.
<b>autonomous system boundary router</b>	ASBR. In OSPF, a router that exchanges routing information with routers in other ASs. The ASBR redistributes routing information received from other ASs throughout its own AS.
<b>autonomous system external link advertisement</b>	OSPF link-state advertisement sent by autonomous system boundary routers to describe external routes that they have detected. These link-state advertisements are flooded throughout the autonomous system (except for stub areas).
<b>autonomous system number</b>	AS number. A globally unique number assigned by the IANA that is used to identify an autonomous system (AS). The AS number enables an AS to exchange exterior routing information with neighboring ASs.
<b>autonomous system path</b>	In BGP, the route to a destination. The path consists of the autonomous system numbers of all the routers a packet must pass through to reach a destination.
<b>autosensing</b>	Process that determines the layers of each dynamic interface. Occurs when the router conditionally constructs interface layers based on the encapsulation type of the incoming packet. <i>Also known as</i> autodetection.
<b>available bit rate</b>	ABR. Rate used in ATM for traffic sources that demand low loss ratios but can accept larger delays. ABR uses bandwidth not used by constant bit rate (CBR) and variable bit rate (VBR). ABR uses best effort to send the maximum number of cells but does not guarantee cell delivery. <i>See also</i> CBR, VBR.

**AVP** attribute-value pair. A RADIUS attribute value carried in a RADIUS protocol message. The pair is a combination of a unique attribute—represented by an integer—and a value containing the actual value identified by the attribute.

**AWG** arrayed waveguide grating. Device used as an optical multiplexer and demultiplexer in wavelength-division multiplexing (WDM) systems. AWGs in an integrated photonic line card (IPLC) multiplex a large number of wavelengths into a single optical fiber, thereby significantly improving the transmission capacity of the network. *See also* IPLC.

## B

**B-channel** bearer channel. A 64-Kbps channel used for voice or data transfer on an ISDN interface. *See also* D-channel.

**B-MAC** Backbone source and destination MAC address fields found in the IEEE 802.1ah provider MAC encapsulation header.

**B-RAS** broadband remote access server. Application responsible for aggregating the output from digital subscriber line access multiplexers (DSLAMs), providing user PPP sessions and PPP session termination, enforcing QoS policies, and routing traffic into an ISP's backbone network.

**B-TAG** Field defined in the IEEE 802.1ah provider MAC encapsulation header that carries the backbone VLAN identifier information. The format of the B-TAG field is the same as that of the IEEE 802.1ad S-TAG field. *See also* S-TAG.

**B-VID** Specific VLAN identifier carried in a B-TAG.

**BA classifier** behavior aggregate classifier. Method of classification that operates on a packet as it enters the router. The packet header contents are examined, and this single field determines the class-of-service (CoS) settings applied to the packet. *See also* multifield classifier.

**back office** Physical or virtual location that a vendor uses for activities that are not directly related to customers, such as processing orders. *See also* front office, OSS.

**back-end IP address** The IP address that a Junos App Balancer machine uses to communicate with a back-end server, or the IP address of a back-end server.

**back-end server** A machine that runs a service, such as a Web or mail server. A back-end server is typically within your local network, and requests handled by the Junos App Balancer are passed on to it. A back-end server together with a specified port forms a node in the Junos App Balancer.

**backbone area** In OSPF, an area that consists of all networks in area ID 0.0.0.0, their attached routers, and all area border routers.

**backbone network** Central network; a network that connects other networks together.

<b>backbone router</b>	OSPF router with all operational interfaces within area 0.0.0.0.
<b>backdoor</b>	A mechanism installed on a host computer that facilitates unauthorized access to the system. Attackers who have already compromised a system can install a backdoor to make future attacks easier.
<b>backdoor link</b>	Private link between two routers. OSPF backdoor links typically serve as backup paths, providing a way for traffic to flow from one VPN site to the other only if the path over the backbone is broken. However, when the OSPF backdoor link connects two sites that are in the same OSPF area, the undesired result is that the path over the OSPF backdoor link is always preferred over the path over the backbone.
<b>backplane</b>	Hardware component that physically separates front and rear cavities inside the chassis, distributes power from the power supplies, and transfers packets and signals between router components that plug into it. <i>See also</i> redundancy midplane.
<b>backup designated router</b>	OSPF router on a broadcast segment that monitors the operation of the designated router (DR) and takes over its functions if the designated router fails.
<b>backup router</b>	Virtual Router Redundancy Protocol (VRRP) router available to take forwarding responsibility if the current primary router fails. <i>See also</i> primary router.
<b>backward explicit congestion notification</b>	BECN. In a Frame Relay network, a header bit transmitted by the destination device requesting that the source device send data more slowly. BECN minimizes the possibility that packets will be discarded when more packets arrive than can be handled. <i>See also</i> FECN.
<b>baffle</b>	Individual dividers and partitions inside a chassis that force cooling air to flow through the device in the optimal manner. A baffle is designed to direct cooling air to where it is needed most.
<b>bandwidth</b>	Range of transmission frequencies a network can use, expressed as the difference between the highest and lowest frequencies of a transmission channel. In computer networks, greater bandwidth indicates a faster data transfer rate capacity.
<b>bandwidth management</b>	Policy management that rate-limits a classified packet flow at ingress to enforce ingress data rates below the physical line rate of a port. When the user configures a rate-limit profile, packets are tagged with a drop preference.
<b>bandwidth model</b>	In Differentiated Services-aware traffic engineering, determines the value of the available bandwidth advertised by the interior gateway protocols (IGPs).
<b>bandwidth on demand</b>	<ul style="list-style-type: none"> <li>• Technique to temporarily provide additional capacity on a link to handle bursts in data, videoconferencing, or other variable bit rate applications. <i>Also known as</i> flexible bandwidth allocation.</li> <li>• On a Services Router, an ISDN cost-control feature defining the bandwidth threshold that must be reached on links before a Services Router initiates additional ISDN data connections to provide more bandwidth.</li> </ul>



<b>bandwidth oversubscription</b>	Feature of JunosE Software that enables line modules to operate at a rate dependent on the resources available rather than having all line modules operate at full line rate performance. Oversubscription enables a much more extensive combination of line modules in the router. <i>See also</i> oversubscription.
<b>base station controller</b>	BSC. Key network node in third-generation (3G) systems that supervises the functioning and control of multiple base transceiver stations.
<b>base station subsystem</b>	BSS. Composed of the base transceiver station (BTS) and base station controller (BSC).
<b>Base Station System GPRS Protocol</b>	BSSGP. Processes routing and quality-of-service (QoS) information for the base station subsystem (BSS).
<b>base system</b>	BSYS. The physical router used in a Junos node slicing setup. The BSYS owns all the physical components of the router, including the line cards and the switching fabric. The BSYS assigns line cards to guest network functions (GNFs). <i>See also</i> Junos node slicing.
<b>base transceiver station</b>	BTS. Mobile telephony equipment housed in cabinets and colocated with antennas. <i>Also known as</i> radio base station.
<b>base URL</b>	The leading portion of a URL, omitting the name of the resource requested. As an example, the base URL of <code>//a/b/c/index.html</code> is <code>//a/b/c/</code> . <i>See also</i> absolute URL, relative URL.
<b>Base64</b>	Method used to encode digital certificate requests and certificates before they are sent to or from the certificate authority (CA).
<b>baseline statistics</b>	Starting point for statistics collection after resetting protocol or application statistics and counters to zero.
<b>basic NAT</b>	Least secure type of traditional Network Address Translation (NAT). Provides translation for IP addresses only and places the mapping into a NAT table. <i>See also</i> NAT.
<b>Basic Rate Interface</b>	BRI. ISDN service intended for home and small enterprise applications. ISDN BRI consists of two 64-Kbps B-channels to carry voice or data, and one 16-Kbps D-channel for control and signaling.
<b>basic service set identifier</b>	BSSID. Identifier that distinguishes each access point within a basic service set. By convention, the MAC address of an access point is used as its BSSID. When multiple access points exist within each WLAN, the BSSID ensures correct identification of each access point and its associated clients. <i>See also</i> SSID and ESSID.
<b>bastion host</b>	Special purpose computer on a network specifically set up to withstand attacks, generally a hardened system configured with minimal software to support a single network service.
<b>BBD</b>	blade bay data. 60-byte text string stored in the JCS1200 management module nonvolatile random access memory (NVRAM) that conveys configuration information to the Routing Engines (blades) in the JCS1200 chassis.

<b>BBL</b>	bearer bandwidth limit. Maximum bandwidth available for voice traffic on an interface when dynamic call admission control is configured on the interface. <i>See also</i> dynamic CAC.
<b>bearer bandwidth limit</b>	BBL. Maximum bandwidth available for voice traffic on an interface when dynamic call admission control is configured on the interface. <i>See also</i> dynamic CAC.
<b>bearer channel</b>	B-channel. A 64-Kbps channel used for voice or data transfer on an ISDN interface. <i>See also</i> D-channel.
<b>BEAST</b>	Browser Exploit Against SSL/TLS. Leverages weaknesses in cipher block chaining (CBC) to exploit the Secure Sockets Layer (SSL) protocol.
<b>BECN</b>	backward explicit congestion notification. In a Frame Relay network, a header bit transmitted by the destination device requesting that the source device send data more slowly. BECN minimizes the possibility that packets will be discarded when more packets arrive than can be handled. <i>See also</i> FECN.
<b>behavior aggregate classifier</b>	BA classifier. Method of classification that operates on a packet as it enters the router. The packet header contents are examined, and this single field determines the class-of-service (CoS) settings applied to the packet. <i>See also</i> multifield classifier.
<b>Bellcore</b>	Bell Communications Research. Research and development organization created after the divestiture of the Bell System. It is supported by the regional Bell holding companies (RBHCs), which own the regional Bell operating companies (RBOCs).
<b>Bellman-Ford algorithm</b>	Algorithm used in distance-vector routing protocols to determine the best path to all routes in the network.
<b>BER</b>	bit error rate. Percentage of received bits in error compared to the total number of bits received.
<b>Berkeley Internet Name Domain</b>	BIND. Open-source software that implements Domain Name System (DNS) protocols for the Internet. <i>See also</i> DNS.
<b>BERT</b>	bit error rate test. Test that can be run on the following interfaces to determine whether they are operating properly: E1, E3, T1, T3, and channelized (DS3, OC3, OC12, and STM1) interfaces.
<b>best effort</b>	Traffic class in which the network forwards as many packets as possible in as reasonable a time as possible. By default, packets that are not assigned to a specific traffic class are assigned to the best-effort traffic class.
<b>best path</b>	When multiple routes to a given destination exist, BGP must determine which of these routes is the best. BGP puts the best path in its routing table and advertises that path to its BGP neighbors. If only one route exists to a particular destination, BGP installs that route. If multiple routes exist for a destination, BGP uses tie-breaking rules to decide which one of the routes to install in the BGP routing table.

<b>best-effort node</b>	Scheduler node associated with a logical interface and traffic class group pair, and where the traffic class group contains the best-effort traffic class. <i>Also known as best-effort scheduler node.</i>
<b>best-effort queue</b>	Queue associated with the best-effort traffic class for a logical interface.
<b>best-effort scheduler node</b>	Scheduler node associated with a logical interface and traffic class group pair, and where the traffic class group contains the best-effort traffic class. <i>Also known as best-effort node.</i>
<b>BFD</b>	Bidirectional Forwarding Detection. Protocol that uses control packets and shorter detection time limits to more rapidly detect failures in a network.
<b>BGP</b>	Border Gateway Protocol. Exterior gateway protocol (EGP) used to exchange routing information among routers in different autonomous systems. Can act as a label distribution protocol for MPLS.
<b>BGP messages</b>	<p>Routing information that BGP speakers exchange with each other over a BGP session. BGP uses five message types:</p> <ul style="list-style-type: none"> <li>• Open BGP messages—Used to establish and negotiate certain parameters for the BGP session after the underlying TCP session has been established.</li> <li>• Update messages—Used to announce routes to prefixes that the speaker can reach and to withdraw routes to prefixes that it can no longer reach. The most important message in the BGP protocol.</li> <li>• Keepalive messages—Periodic messages to determine whether the underlying TCP connection is still up.</li> <li>• Notification messages—Sent to a BGP peer to terminate a BGP session (either because the speaker has been configured to do so or because it has detected some error condition).</li> <li>• Route-refresh messages—Sent to BGP peers that advertise their route-refresh capability, enabling the BGP speaker to apply modified or new policies to the refreshed routes.</li> </ul>
<b>BGP neighbor</b>	<p>Another device on the network that is running BGP. There are two types of BGP neighbors:</p> <ul style="list-style-type: none"> <li>• Internal neighbors—in the same autonomous system</li> <li>• External neighbors—in different autonomous systems</li> </ul> <p>A reliable connection is required between neighbors and is achieved by creating a TCP connection between the two. The handshake that occurs between the two prospect neighbors evolves through a series of phases or states before a true connection can be made.</p>
<b>BGP peer</b>	BGP neighbor that has been explicitly configured for a BGP speaker. BGP peers do not have to be directly connected to each other to share a BGP session.
<b>BGP peer group</b>	Two or more BGP peers that share a common set of update policies. They are grouped together to reduce configuration overhead and to conserve system resources when updates are generated.

<b>BGP route</b>	Prefix and a set of path attributes. Sometimes referred to as a path, although that term technically refers to one of the path attributes of that route.
<b>BGP session</b>	TCP connection over which routing information is exchanged according to the rules of the BGP protocol. When two BGP speakers are in the same autonomous system, the BGP session is an internal BGP session, or IBGP session. When two BGP speakers are in different autonomous systems, the BGP session is an external BGP session, or EBGP session. BGP uses the same types of message on IBGP and EBGP sessions, but the rules for when to send and how to interpret each message differ slightly. <i>See also</i> IBGP session, EBGP session.
<b>BGP speaker</b>	Router configured to run the BGP routing protocol. Unlike some other routing protocols, BGP speakers do not automatically discover each other and begin exchanging information. Instead, each BGP speaker must be explicitly configured with a set of BGP peers with which it exchanges routing information.
<b>Bidirectional Forwarding Detection</b>	BFD. Protocol that uses control packets and shorter detection time limits to more rapidly detect failures in a network.
<b>bidirectional NAT</b>	Type of NAT that adds support for DNS to basic NAT, allowing public hosts to initiate sessions into the private network, usually to reach servers intended for public access.
<b>BIND</b>	Berkeley Internet Name Domain. Open-source software that implements Domain Name System (DNS) protocols for the Internet. <i>See also</i> DNS.
<b>binding</b>	Collection of configuration parameters, including at least an IP address, assigned by a DHCP server to a DHCP client. A binding can be dynamic (temporary) or static (permanent). Bindings are stored in the DHCP server's binding database.
<b>bit error rate</b>	BER. Percentage of received bits in error compared to the total number of bits received.
<b>bit error rate test</b>	BERT. Test that can be run on the following interfaces to determine whether they are operating properly: E1, E3, T1, T3, and channelized (DS3, OC3, OC12, and STM1) interfaces.
<b>bit field match conditions</b>	Use of fields in the header of an IP packet as match criteria in a firewall filter.
<b>bit rate</b>	A data rate expressed as the number of bits transmitted per second: Kbps (kilobits per second). One bit is 1,024 bytes, so bit rate can also be expressed as KB/s (kilobytes per second).
<b>bit rate profile</b>	The bit rate encoding that allows optimal downloads to different bandwidths.
<b>BITS</b>	Building Integrated Timing Source (or Supply, or System). Dedicated timing source that synchronizes all equipment in a particular building; a method for distributing precise timing synchronization among telecommunications equipment.
<b>blacklist</b>	<i>See</i> blocklist.

<b>blade</b>	Routing Engine in the Juniper Networks JCS1200 Control System chassis that runs Junos OS. The JCS1200 chassis holds up to 12 single Routing Engines (or 6 redundant Routing Engine pairs).
<b>blade bay data</b>	BBD. 60-byte text string stored in the JCS1200 management module nonvolatile random access memory (NVRAM) that conveys configuration information to the Routing Engines (blades) in the JCS1200 chassis.
<b>blade server</b>	Thin server in a rack, generally dedicated to a single application.
<b>BLF</b>	busy lamp field. Light on an IP phone that indicates when other extensions connected to the same private branch exchange (PBX) are busy. When the BLF is configured, the phone subscribes to a resource list, available on the IP PBX, to receive notifications about the status of other extensions. BLF works through the Session Initiation Protocol (SIP) and uses the SUBSCRIBE and NOTIFY messages. In a typical scenario, the IP phone is the subscriber and the IP PBX is the notifier.
<b>block</b>	Action that blocks certain types of traffic when spam or unsolicited bulk e-mail is detected by the device.
<b>blocklist</b>	Profile of checklist attributes that cause an AAA server to reject an authentication request. For example, a blocklist profile might cause the rejection of calling station phone numbers or IP addresses that are blocked by the AAA server.
<b>Blowfish</b>	Unpatented, symmetric cryptographic method developed by Bruce Schneier and used in many commercial and freeware software applications. Blowfish uses variable-length keys of up to 448 bits.
<b>BMA</b>	broadcast multiaccess. Network on which broadcast or multicast packets can be sent, enabling each device on a network segment to communicate directly with every other device on that segment. <i>See also</i> NBMA.
<b>BOOTP</b>	bootstrap protocol. UDP/IP-based protocol that allows a booting host to configure itself dynamically and without user supervision. BOOTP provides a means to notify a host of its assigned IP address, the IP address of a boot server host, and the name of a file to be loaded into memory and executed. Other configuration information, such as the local subnet mask, the local time offset, the addresses of default routers, and the addresses of various Internet servers, can also be communicated to a host using BOOTP.
<b>BOOTREPLY</b>	Bootstrap protocol (BOOTP) message sent from a BOOTP server to a BOOTP client, providing configuration information. <i>See also</i> BOOTP.
<b>BOOTREQUEST</b>	Bootstrap protocol (BOOTP) message sent from a BOOTP client to a BOOTP server, requesting configuration information. <i>See also</i> BOOTP.
<b>bootstrap loader</b>	Program that loads the operating system for a device at startup.

<b>bootstrap protocol</b>	BOOTP. UDP/IP-based protocol that allows a booting host to configure itself dynamically and without user supervision. BOOTP provides a means to notify a host of its assigned IP address, the IP address of a boot server host, and the name of a file to be loaded into memory and executed. Other configuration information, such as the local subnet mask, the local time offset, the addresses of default routers, and the addresses of various Internet servers, can also be communicated to a host using BOOTP.
<b>bootstrap router</b>	Single router in a multicast network responsible for distributing candidate rendezvous point information to all PIM-enabled routers.
<b>Border Gateway Protocol</b>	BGP. Exterior gateway protocol (EGP) used to exchange routing information among routers in different autonomous systems. Can act as a label distribution protocol for MPLS.
<b>botnet</b>	Computer ( <i>robot</i> ) connected to a network ( <i>net</i> ) that communicates with other similar machines to complete repetitive tasks and objectives. These objectives are often malicious in nature, compromising the computer network. A botnet might, for example, automatically transfer malware or spam, or launch distributed denial-of-service attacks, without your knowledge. <i>See also</i> distributed denial-of-service attack.
<b>boundary clock</b>	Real-time clock that operates as a combination of the primary and client clocks in a PTP operation. The boundary clock endpoint acts as a client clock for the primary clock, and also acts as the primary clock for all the client clocks reporting to the boundary endpoint.
<b>BPDU</b>	bridge protocol data unit. Spanning Tree Protocol hello packet that is sent out at intervals to exchange information across bridges and detect loops in a network topology.
<b>breadcrumbs</b>	Navigation aid in user interfaces that provides a trail for users to navigate back to the parent webpages. Breadcrumbs are typically displayed near the top of the page, either left-to-right or right-to-left. Breadcrumbs take the form <i>starting page &gt; subcategories or selections the user has made to get to the current page &gt; name of the current page</i> . <i>Also known as</i> cookie crumbs or locator links.
<b>BRI</b>	Basic Rate Interface. ISDN service intended for home and small enterprise applications. ISDN BRI consists of two 64-Kbps B-channels to carry voice or data, and one 16-Kbps D-channel for control and signaling.
<b>bridge</b>	<ul style="list-style-type: none"> <li>• Network component defined by the IEEE that forwards frames from one LAN segment or VLAN to another. The bridging function can be contained in a router, a LAN switch, or another specialized device. A bridge operates at Layer 2 of the OSI Reference Model. <i>See also</i> switch.</li> <li>• Device that uses the same communications protocol to connect and pass packets between two network segments.</li> </ul>
<b>bridge domain</b>	Set of logical ports that share the same flooding or broadcast characteristics. As in a virtual LAN, a bridge domain spans one or more ports of multiple devices. By default, each bridge domain maintains its own forwarding database of MAC addresses learned from packets received on ports belonging to that bridge domain. <i>See also</i> broadcast domain, VLAN.

<b>Bridge Firewall + Monitoring</b>	The vGW Virtual Gateway mode in which the installation runs as a virtual machine and bridges two virtual switches, for secure connections. It is the only installation option for environments running versions of ESX prior to vSphere 4.0. This deployment produces a vGW Security VM that is referred to as the bridge firewall VM.
<b>bridge group</b>	Collection of bridge interfaces stacked on Ethernet Layer 2 network interfaces (ports) to form a broadcast domain. Each bridge group has its own set of forwarding tables and filters and functions as a logical transparent bridging device.
<b>bridge group interface</b>	Association of one or more network interfaces with a bridge group. <i>Also known as</i> bridge interface.
<b>bridge protocol data unit</b>	BPDU. Spanning Tree Protocol hello packet that is sent out at intervals to exchange information across bridges and detect loops in a network topology.
<b>bridged Ethernet interface</b>	Link Layer protocol that allows multiple upper-layer interface types (IP, PPPoE, and CBF) to be simultaneously multiplexed over the same interface.
<b>bridged IP</b>	Link Layer protocol used to manage IP packets that are encapsulated inside an Ethernet frame running over a permanent virtual circuit (PVC).
<b>bring your own device</b>	BYOD. Practice of having employees use their own computing devices—such as smartphones, laptops, and tablets—in the workplace for connectivity to and use on the secure corporate network.
<b>broadband remote access server</b>	B-RAS. Application responsible for aggregating the output from digital subscriber line access multiplexers (DSLAMs), providing user PPP sessions and PPP session termination, enforcing QoS policies, and routing traffic into an ISP's backbone network.
<b>broadband services router</b>	BSR. A router used for subscriber management and edge routing.
<b>broadcast</b>	Operation of sending network traffic from one network node to all other network nodes.
<b>broadcast accounting server</b>	In RADIUS, server that sends the accounting information to a group of virtual routers. An accounting virtual router group can contain up to four virtual routers, and the E Series router supports a maximum of 100 virtual router groups. The accounting information continues to be sent to the duplicate accounting virtual router, if one is configured. You might use broadcast accounting to send accounting information to a group of your private accounting servers. <i>See also</i> duplicate accounting server.
<b>broadcast address</b>	IPv4 type of address that enables a device to send a packet to all hosts on a subnetwork.
<b>broadcast circuits</b>	Circuits that use designated routers and are represented as virtual nodes in the network topology. They require periodic database synchronization. By default, IS-IS treats the broadcast link as LAN media and tries to bring up the LAN adjacency even when the interface is configured as unnumbered or only a single neighbor exists on that link. <i>See also</i> point-to-point circuits.

<b>broadcast domain</b>	Logical division of a computer network, in which all nodes can reach each other by broadcast at the Data Link Layer.
<b>broadcast multiaccess</b>	BMA. Network on which broadcast or multicast packets can be sent, enabling each device on a network segment to communicate directly with every other device on that segment. <i>See also</i> NBMA.
<b>broadcast network</b>	Network of many routers that can send, or broadcast, a single physical message to all the attached routers. Pairs of routers on a broadcast network are assumed to be able to communicate with each other. On broadcast networks, the OSPF router dynamically detects its neighbor routers by sending hello packets to the multicast address 224.0.0.5. The hello protocol elects a designated router and a backup designated router for the network. Ethernet is an example of a broadcast network.
<b>broadcast, unknown unicast, and multicast</b>	BUM. A type of Layer 2 traffic.
<b>Browser Exploit Against SSL/TLS</b>	BEAST. Leverages weaknesses in cipher block chaining (CBC) to exploit the Secure Sockets Layer (SSL) protocol.
<b>BSC</b>	base station controller. Key network node in third-generation (3G) systems that supervises the functioning and control of multiple base transceiver stations.
<b>BSR</b>	broadband services router. A router used for subscriber management and edge routing.
<b>BSS</b>	<ul style="list-style-type: none"> <li>• base station subsystem. Composed of the base transceiver station (BTS) and base station controller (BSC).</li> <li>• business support systems. In telecommunications, software applications that service providers use for front-office activities, such as billing and call-center automation. <i>See also</i> front office, OSS.</li> </ul>
<b>BSSGP</b>	Base Station System GPRS Protocol. Processes routing and quality-of-service (QoS) information for the BSS.
<b>BSSID</b>	basic service set identifier. Identifier that distinguishes each access point within a basic service set. By convention, the MAC address of an access point is used as its BSSID. When multiple access points exist within each WLAN, the BSSID ensures correct identification of each access point and its associated clients. <i>See also</i> SSID and ESSID.
<b>BSYS</b>	base system. The physical router used in a Junos node slicing setup. The BSYS owns all the physical components of the router, including the line cards and the switching fabric. The BSYS assigns line cards to guest network functions (GNFs). <i>See also</i> Junos node slicing.
<b>BTS</b>	base transceiver station. Mobile telephony equipment housed in cabinets and colocated with antennas. <i>Also known as</i> radio base station.



<b>buffer</b>	Memory space for handling data in transit. Buffers compensate for differences in processing speed between network devices by temporarily handling bursts of data until they can be processed by slower devices.
<b>buffer overflow</b>	Event that occurs when a program or process attempts to store more data in a buffer than the buffer was intended to hold. Buffers provide temporary data storage and are designed to contain a finite amount of data; any additional data can overflow the buffer zone and attempt to enter nearby buffers, corrupting or overwriting that buffer's existing data.
<b>Building Integrated Timing Source (or Supply, or System)</b>	BITS. Dedicated timing source that synchronizes all equipment in a particular building; a method for distributing precise timing synchronization among telecommunications equipment.
<b>BUM</b>	broadcast, unknown unicast, and multicast. A type of Layer 2 traffic.
<b>bundle</b>	<ul style="list-style-type: none"> <li>• Multiple physical links of the same type, such as multiple asynchronous lines, or physical links of different types, such as leased synchronous lines and dial-up asynchronous lines.</li> <li>• Collection of software that makes up a Junos OS release.</li> </ul>
<b>business support systems</b>	BSS. In telecommunications, software applications that service providers use for front-office activities, such as billing and call-center automation. <i>See also</i> front office, OSS.
<b>busy lamp field</b>	BLF. Light on an IP phone that indicates when other extensions connected to the same private branch exchange (PBX) are busy. When the BLF is configured, the phone subscribes to a resource list, available on the IP PBX, to receive notifications about the status of other extensions. BLF works through the Session Initiation Protocol (SIP) and uses the SUBSCRIBE and NOTIFY messages. In a typical scenario, the IP phone is the subscriber and the IP PBX is the notifier.
<b>BYOD</b>	bring your own device. Practice of having employees use their own computing devices—such as smartphones, laptops, and tablets—in the workplace for connectivity to and use on the secure corporate network.
<b>bypass LSP</b>	Carries traffic for an LSP whose link-protected interface has failed. A bypass LSP uses a different interface and path to reach the same destination.
<b>bypass tunnel</b>	Single label-switched path (LSP) used to back up a set of LSPs by bypassing specific links in the LSP. In the event of a failure in any link of the protected RSVP-TE LSP (the primary LSP), MPLS redirects traffic to the associated bypass tunnel in tens of milliseconds.
<b>C</b>	
<b>C form-factor pluggable transceiver</b>	CFP transceiver. 100-Gbps form-factor pluggable transceiver that provides support for fiber-optic cables with built-in clock recovery circuits. (The C stands for <i>centum</i> , or 100.)

<b>C&amp;C server</b>	Command-and-Control server. Centralized computer that issues commands to botnets (compromised networks of computers) and receives reports back from them. Botnets can be used to gather sensitive information, such as account numbers or credit card information, or to participate in a distributed denial-of-service (DDoS) attack.
<b>C-VLAN</b>	customer VLAN. A stacked VLAN, defined by IEEE 802.1ad, that contains an outer tag corresponding to the S-VLAN and an inner tag corresponding to the C-VLAN. A C-VLAN often corresponds to customer premises equipment (CPE). Scheduling and shaping is often used on a C-VLAN to establish minimum and maximum bandwidth limits for a customer. <i>See also</i> S-VLAN.
<b>CA</b>	certificate authority. A trusted third-party organization that creates, enrolls, validates, and revokes digital certificates. The CA guarantees a user's identity and issues public and private keys for message encryption and decryption (coding and decoding).
<b>CAC</b>	<ul style="list-style-type: none"> <li>• call admission control (MPLS). Bandwidth and bandwidth-related resource monitoring and accounting facility that determines whether a setup request can be honored for an MPLS LSP with traffic parameters.</li> <li>• connection admission control (ATM). Set of actions that the network takes during connection setup or renegotiation. ATM networks use CAC to determine whether to accept a connection request, based on whether allocating the connection's requested bandwidth would cause the network to violate the traffic contracts of existing connections.</li> </ul>
<b>cache</b>	A server that participates in the resource public key infrastructure. It downloads and validates route authorization origins using protocols. It exports route validation records to the router over TCP, using the protocol defined in the Internet draft draft-ietf-sidr-rpki-rtr-24, <i>The RPKI/Router Protocol</i> . <i>See also</i> ROA and RPKI.
<b>CAIDA</b>	Cooperative Association for Internet Data Analysis. Association that provides tools and analyses promoting the engineering and maintenance of a robust, scalable Internet infrastructure. One tool, cflowd, allows you to collect an aggregate of sampled flows and send the aggregate to a specified host that runs the cflowd application available from CAIDA.
<b>call admission control</b>	CAC. Bandwidth and bandwidth-related resource monitoring and accounting facility that determines whether a setup request can be honored for an MPLS LSP with traffic parameters.
<b>Call Detail Record</b>	CDR. Contains data unique to a specific call, such as origination, termination, length, and time of day.
<b>callback</b>	Alternative feature to dial-in that enables a device to call back the caller from the remote end of a backup ISDN connection. Instead of accepting a call from the remote end of the connection, the router rejects the call, waits a configured period of time, and calls a number configured on the router's dialer interface. <i>See also</i> dial-in.

<b>caller ID</b>	Telephone number of the caller on the remote end of a backup ISDN connection, used to dial in and also to identify the caller. During dial-in, the router matches the caller ID of the incoming call against all caller IDs configured on its dialer interfaces, and accepts only those calls whose caller IDs are configured.
<b>CAM</b>	content-addressable memory. Memory chip in which content is compared in each bit cell, allowing for very fast table lookups.
<b>CAMA</b>	centralized automatic message accounting. Recording of toll calls at a central point.
<b>CAMEL</b>	Customized Applications of Mobile Enhanced Logic. An ETSI standard for GSM networks that enhances the provision of Intelligent Network services.
<b>candidate configuration</b>	File maintained by Junos OS containing changes to the device's active configuration. This file becomes the active configuration when a user issues the <b>commit</b> command. <i>See also</i> active configuration.
<b>candidate RP advertisements</b>	Information sent by routers in a multicast network when they are configured as a local rendezvous point (RP). This information is unicast to the bootstrap router for the multicast domain.
<b>capability negotiation</b>	Enables devices to communicate without having prior knowledge of the capabilities of the remote entity. This method is used by BGP peers to determine whether they share the same capabilities, and whether the session will be maintained or terminated, given the respective capabilities of the peers. BGP speakers advertise their capabilities in BGP open messages.
<b>carrier-of-carriers VPN</b>	Virtual private network (VPN) service provided to a network service provider that supplies Internet or VPN service to an end customer, establishing a two-tiered relationship between a provider carrier and a customer carrier. The provider carrier provides a VPN backbone network for the customer carrier (Tier 1). The customer carrier, in turn, provides Layer 3 VPN or Internet services to its end customers (Tier 2). For a carrier-of-carriers VPN, the customer's sites are configured within the same autonomous system (AS).
<b>cascade port</b>	In a Junos fusion, the port on the aggregation device that connects the aggregation device to the satellite device. <i>See also</i> aggregation device, extended ports, Junos fusion, satellite device.
<b>catalog</b>	A central repository for objects that you can apply to your services. There are catalogs for rules, monitors, service protection classes, and various SSL items.
<b>CB</b>	Control Board. On a Juniper Networks T640 Core Router routing node, part of the host subsystem that provides control and monitoring functions for router components.
<b>CBC</b>	cipher block chaining. A mode of encryption using 64 or 128 bits of fixed-length blocks in which each block of plain text is XORed with the previous cipher text block before being encrypted. <i>See also</i> XOR.

<b>CBF</b>	connection-based forwarding. A method of forwarding frames in which forwarding decisions are made using only the identity of the ingress interface. No part of a packet's contents is used to determine how a packet should be forwarded.
<b>CBR</b>	constant bit rate. An ATM service category that supports a constant and guaranteed rate to transport services such as video or voice, as well as circuit emulation, requiring rigorous timing control and performance parameters. For ATM1 and ATM2 IQ interfaces, data is serviced at a constant, repetitive rate. CBR is used for traffic that does not need to periodically burst to a higher rate, such as nonpacketized voice and audio.
<b>CC cells</b>	continuity check cells. Cells that provide continual monitoring of a connection on a segment or from end to end.
<b>CCC</b>	circuit cross-connect. Junos OS feature that allows you to configure transparent connections between two circuits. A circuit can be a Frame Relay DLCI, an ATM virtual channel (VC), a PPP interface, a Cisco HDLC interface, or an MPLS label-switched path (LSP).
<b>CCITT</b>	International Telegraph and Telephone Consultative Committee. Now known as ITU-T (Telecommunication Standardization Sector), organization that coordinates standards for telecommunication on behalf of the ITU (International Telecommunication Union). The ITU is a United Nations specialized agency. ITU-T is a subcommittee of ITU. <i>See also</i> ITU-T.
<b>CDMA</b>	code division multiple access. Digital cellular technology that uses spread-spectrum techniques for digital transmission of radio signals, for example, between a mobile telephone and a base transceiver station (BTS). Unlike competing systems that use TDMA (time division multiple access), such as GSM (Global System for Mobile Communications), CDMA does not assign a specific frequency to each user. Instead, every channel uses the full available spectrum. Individual conversations are encoded with a pseudo-random digital sequence. CDMA consistently provides better capacity for voice and data communications than other commercial mobile technologies, allowing more subscribers to connect at any given time.
<b>CDMA2000</b>	Radio transmission and backbone technology standards for the evolution to third-generation (3G) mobile networks.
<b>CDN</b>	content delivery network, content distribution network. A system of computers networked together across the Internet that cooperate transparently to deliver content to end users, most often for the purpose of improving performance, scalability, and cost efficiency.
<b>CDR</b>	Call Detail Record. Contains data unique to a specific call, such as origination, termination, length, and time of day.
<b>CDV</b>	cell delay variation. Difference between a cell's expected and actual transfer delay. CDV determines the amount of jitter. <i>Also known as</i> cell jitter. (JunosE QoS term)
<b>CDVT</b>	cell delay variation tolerance. Acceptable tolerance of CDV (jitter). (JunosE QoS term)

<b>CE</b>	customer edge. Customer router connected to the service provider network.
<b>CE device</b>	customer edge device. Router or switch in the customer's network that is connected to a service provider's provider edge (PE) router and participates in a Layer 3 VPN.
<b>cell delay variation</b>	CDV. Difference between a cell's expected and actual transfer delay. CDV determines the amount of jitter. <i>Also known as cell jitter.</i> (JunosE QoS term)
<b>cell delay variation tolerance</b>	CDVT. Acceptable tolerance of CDV (jitter). (JunosE QoS term)
<b>cell loss priority</b>	CLP. ATM cell bit that communicates the loss priority of the payload. A value of zero (0) specifies that the cell not be discarded if it encounters congestion as it moves through the network. A value of one (1) specifies that the network can drop the cell when congestion is encountered.
<b>cell relay</b>	Data transmission technology based on the use of small, fixed-size packets (cells) that can be processed and switched in hardware at high speeds. Cell relay is the basis for many high-speed network protocols, including ATM and IEEE 802.6.
<b>cell tax</b>	Physical transmission capacity used by header information when sending data packets in an ATM network. Each ATM cell uses a 5-byte header.
<b>cell-relay mode</b>	Layer 2 circuit transport mode that sends ATM cells between ATM2 intelligent queuing (IQ) interfaces over an MPLS core network. You use Layer 2 circuit cell-relay transport mode to tunnel a stream of ATM cells over an MPLS or IP backbone. <i>See also</i> AAL5 mode, Layer 2 circuits, standard AAL5 mode, trunk mode.
<b>CentOS</b>	Community Enterprise Operating System. Free Linux distribution built from the open-source code of Red Hat Enterprise Linux (RHEL).
<b>Central Management Console</b>	CMC. A feature of the Juniper Networks Media Flow Controller management interface that allows you to push configurations to a number of Media Flow Controllers from a central interface.
<b>central office</b>	CO. Local telephone company building that houses circuit switching equipment used for subscriber lines in a given area.
<b>central processing unit</b>	CPU. Hardware component in a computer that executes instructions from memory, performing arithmetic and logical operations as required.
<b>centralized automatic message accounting</b>	CAMA. Recording of toll calls at a central point.
<b>certificate</b>	Electronic document that binds a person or entity to a public key using a digital signature.

<b>certificate authority</b>	CA. A trusted third-party organization that creates, enrolls, validates, and revokes digital certificates. The CA guarantees a user's identity and issues public and private keys for message encryption and decryption (coding and decoding).
<b>certificate revocation list</b>	CRL. List of digital certificates that have been invalidated, including the reasons for revocation and the names of the entities that issued them. A CRL prevents use of digital certificates and signatures that have been compromised.
<b>certificate signing request</b>	CSR. A request created from a self-signed certificate. You can submit the CSR to a certificate authority for them to sign.
<b>CFEB</b>	Compact Forwarding Engine Board. In Juniper Networks M7i and M10i Multiservice Edge Routers, CFEB provides route lookup, filtering, and switching to the destination port.
<b>cflowd</b>	Application available from CAIDA that collects an aggregate of sampled flows and sends the aggregate to a specified host running the cflowd application.
<b>CFM</b>	connectivity fault management. End-to-end per-service-instance Ethernet layer operation, administration, and management (OAM) protocol. CFM includes proactive connectivity monitoring, fault verification, and fault isolation for large Ethernet metropolitan-area networks.
<b>CFP transceiver</b>	C form-factor pluggable transceiver. 100-Gbps form-factor pluggable transceiver that provides support for fiber-optic cables with built-in clock recovery circuits. (The C stands for <i>centum</i> , or 100.)
<b>Challenge Handshake Authentication Protocol</b>	CHAP. Server-driven, three-step authentication of remote users that depends on a shared secret password that resides on both the server and the client. <i>See also</i> PAP.
<b>change of authorization</b>	CoA. RADIUS messages that dynamically modify session authorization attributes, such as data filters.
<b>channel</b>	Communication circuit linking two or more devices, providing an input/output interface between a processor and a peripheral device or between two systems. A single physical circuit can consist of one or many channels, or two systems carried on a physical wire or wireless medium. For example, the dedicated channel between a telephone and the central office (CO) is a twisted-pair copper wire. <i>See also</i> frequency-division multiplexed channel, time-division multiplexed channel.
<b>channel group</b>	Combination of DS0 interfaces partitioned from a channelized interface into a single logical bundle.
<b>channel service unit/data service unit</b>	CSU/DSU. A channel service unit connects a digital phone line to a multiplexer or other digital signal device. A data service unit connects data terminal equipment (DTE) to a digital phone line.
<b>channelized E1</b>	A 2.048 Mbps interface that can be configured as a single clear channel E1 interface or channelized into as many as 31 discrete DS0 interfaces. On most channelized E1 interfaces, time slots are numbered from 1 through 32, and time slot 1 is reserved for framing. On some legacy channelized E1 interfaces, time slots are numbered from 0 through 31, with time slot 0 reserved for framing.

<b>channelized interface</b>	Wideband interface divided into many smaller channels to carry different streams of data. It is a subdivision of a larger interface, minimizing the number of PICs or Physical Interface Modules (PIMs) that an installation requires. On a channelized PIC or PIM, each port can be configured as a single clear channel or partitioned into multiple discrete T3, T1, E1, and DS0 interfaces, depending on the size of the channelized PIC or PIM.
<b>channelized T1</b>	A 1.544 Mbps interface that can be configured as a single clear channel T1 interface or channelized into as many as 24 discrete DS0 interfaces. Time slots are numbered from 1 through 24.
<b>CHAP</b>	Challenge Handshake Authentication Protocol. Server-driven, three-step authentication of remote users that depends on a shared secret password that resides on both the server and the client. <i>See also</i> PAP.
<b>chassis alarm</b>	Predefined alarm triggered by a physical condition on the device such as a power supply failure, excessive component temperature, or media failure.
<b>chassis cluster</b>	Physically connected and configured devices that provide redundancy and ensure service continuity in the event of partial or complete device failure. Chassis clusters provide a resilient system architecture, synchronizing session and kernel states across control and data planes to prevent a single point of failure from disabling the network.
<b>chassis daemon</b>	chassisd. Junos OS process responsible for managing the interaction of the router's physical components.
<b>chassisd</b>	chassis daemon. Junos OS process responsible for managing the interaction of the router's physical components.
<b>CHD</b>	computed historical datapoints. Traffic samples that have been computed in some manner, such as summation and averaging.
<b>Chef</b>	Open-source automation software used by IT teams to manage large-scale deployments of complex compute resources (servers).
<b>CIDR</b>	Classless Interdomain Routing, classless routing. Addressing method that interprets an IP address in two parts: a prefix that identifies the network, followed by notation that indicates the host address and mask; for example, 10.12.8.3/16. CIDR replaces the traditional class structure of IP addresses, in which address allocations were based on octet (8-bit) boundary segments of the 32-bit IP address. In CIDR, the boundary between the network and host portions of an IP address can be on any bit boundary and they have no class restrictions, enabling more efficient use of the IP address space.
<b>CIP</b>	Connector Interface Panel. Panel that contains connectors for the Routing Engines, BITS interfaces, and alarm relay contacts on some M Series and T Series routers.
<b>cipher block chaining</b>	CBC. A mode of encryption using 64 or 128 bits of fixed-length blocks in which each block of plain text is XORed with the previous cipher text block before being encrypted. <i>See also</i> XOR.

<b>CIR</b>	committed information rate. Specifies the average rate at which packets are admitted to the network. Each packet is counted as it enters the network. Packets that do not exceed the CIR are marked green, which corresponds to low loss priority. Packets that exceed the CIR but are below the peak information rate (PIR) are marked yellow, which corresponds to medium loss priority. <i>See also</i> trTCM, PIR.
<b>circuit cross-connect</b>	CCC. Junos OS feature that allows you to configure transparent connections between two circuits. A circuit can be a Frame Relay DLCI, an ATM virtual channel (VC), a PPP interface, a Cisco HDLC interface, or an MPLS label-switched path (LSP).
<b>circuit-level proxy</b>	Generic proxy (intermediary cache or relay between a Web client and a webserver) that is not associated with a specific application; instead, a circuit-level proxy can support multiple applications.
<b>Cisco HDLC</b>	Cisco High-Level Data Link Control. Bit-oriented synchronous Data Link Layer protocol that governs information transfer. Developed by ISO, it specifies a data encapsulation method on synchronous serial links using frame characters and checksums. It is a protocol that has been implemented by many different network equipment vendors. <i>See also</i> SLARP.
<b>Cisco High-Level Data Link Control</b>	Cisco HDLC. Bit-oriented synchronous Data Link Layer protocol that governs information transfer. Developed by ISO, it specifies a data encapsulation method on synchronous serial links using frame characters and checksums. It is a protocol that has been implemented by many different network equipment vendors. <i>See also</i> SLARP.
<b>Cisco-RP-Announce</b>	Message advertised into a multicast network by a router configured as a local rendezvous point (RP) in an auto-RP network. A Cisco-RP-Announce message is advertised in dense-mode PIM to the 224.0.1.39 multicast group address.
<b>Cisco-RP-Discovery</b>	Message advertised by the mapping agent in an auto-RP network. A Cisco-RP-Discovery message contains the rendezvous point (RP) to multicast group address assignments for the domain. It is advertised in dense-mode PM to the 224.0.1.40 multicast group address.
<b>CISPR</b>	International Special Committee on Radio Interference. An International Electrotechnical Commission (IEC) committee whose principal task is to prepare standards that offer protection of radio reception from interference sources at the higher end of the frequency range (from 9 kHz and above), such as electrical appliances of all types; the electricity supply system; industrial, scientific, and electromedical RF; broadcasting receivers (sound and TV); and IT equipment (ITE).
<b>CIST</b>	common and internal spanning tree. Single spanning tree calculated by the Spanning Tree Protocol (STP) and the Rapid Spanning Tree Protocol (RSTP) and the logical continuation of that connectivity through multiple spanning-tree (MST) bridges and regions, calculated to ensure that all LANs in the bridged LAN are simply and fully connected. <i>See also</i> MSTI.
<b>CLACL</b>	classifier control list. Specifies the criteria by which the router defines a packet flow.



<b>class of service</b>	CoS. Method of classifying traffic on a packet-by-packet basis using information in the type-of-service (ToS) byte to provide different service levels to different traffic. <i>See also</i> QoS.
<b>Class Selector code point</b>	CSCP. Eight Differentiated Services code point (DSCP) values of the form xxx000 (where x can be 0 or 1). Defined in RFC 2474, <i>Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers</i> .
<b>class type</b>	In Differentiated Services-aware traffic engineering, a collection of traffic flows that are treated equivalently in a Differentiated Services domain. A class type maps to a queue and is much like a class-of-service (CoS) forwarding class in concept.
<b>class-of-service bits</b>	CoS bits. Experimental bits, located in each MPLS label and used to encode the CoS value of a packet as it traverses an LSP. <i>Also known as</i> EXP bits.
<b>class-of-service process</b>	cosd. Process that enables the routing platform to provide different levels of service to applications based on packet classifications.
<b>classification</b>	Process of taking in a single data stream and sorting it into multiple output substreams. In class of service (CoS), the examination of an incoming packet that associates the packet with a particular CoS servicing level. There are two kinds of classifiers, behavior aggregate and multifield. <i>Also known as</i> packet classification. <i>See also</i> BA classifier, multifield classifier.
<b>classifier</b>	Method of reading a sequence of bits in a packet header or label and determining how the packet should be forwarded internally and scheduled (queued) for output.
<b>classifier control list</b>	CLACL. Specifies the criteria by which the router defines a packet flow.
<b>classifier group</b>	Policy rules that make up a policy list.
<b>Classless Interdomain Routing, classless routing</b>	CIDR. Addressing method that interprets an IP address in two parts: a prefix that identifies the network, followed by notation that indicates the host address and mask; for example, 10.12.8.3/16. CIDR replaces the traditional class structure of IP addresses, in which address allocations were based on octet (8-bit) boundary segments of the 32-bit IP address. In CIDR, the boundary between the network and host portions of an IP address can be on any bit boundary and they have no class restrictions, enabling more efficient use of the IP address space.
<b>CLAT</b>	Customer-side translator (XLAT), defined in RFC 6877, <i>464XLAT: Combination of Stateful and Stateless Translation</i> , that complies with RFC 6145, <i>IP/ICMP Translation Algorithm</i> . CLAT algorithmically translates 1:1 private IPv4 addresses to global IPv6 addresses, and vice versa. The CLAT function is applicable to a router or an end node such as a mobile phone. <i>See also</i> 464XLAT and PLAT.
<b>clear channel</b>	Interface configured on a channelized PIC or PIM that operates as a single channel, does not carry signaling, and uses the entire port bandwidth.

<b>clear to send</b>	CTS. Signaling message transmitted in response to an RTS (request to send) message that enables the sender of the RTS message to begin data transfer
<b>cleartext</b>	Unencrypted form of encrypted text. <i>Also known as</i> plaintext.
<b>CLEC</b>	competitive local exchange carrier. Company that competes with an already-established local telecommunications business by providing its own network and switching.
<b>CLEI</b>	Common Language Equipment Identifier. Inventory code used to identify and track telecommunications equipment.
<b>CLI</b>	command-line interface. Interface provided for entering commands for configuring and monitoring the routing protocol software.
<b>CLI access class</b>	Security level that grants access to specific CLI commands, such as for packet mirroring.
<b>CLI Configlet</b>	Configuration template converted into a CLI configuration string that you can use to easily apply a configuration from Junos Space Network Management Platform to a device. A CLI Configlet contains the Junos OS configuration as formatted ASCII text.
<b>CLI-based packet mirroring</b>	Type of packet mirroring in which an authorized user uses the router CLI commands to configure and manage packet mirroring.
<b>client</b>	Node or software program (front-end device) that requests services from a server. <i>See also</i> SNMP client.
<b>client certificate</b>	An SSL certificate held by a client, granting the client access to a restricted site.
<b>client clock</b>	Real-time clock located in a router acting as a Precision Time Protocol (PTP) client (which is also known as the client node, destination node, or boundary node). The client clock performs clock and time recovery operations on the basis of the received and requested timestamps from the primary clock. <i>Also known as</i> member clock. <i>See also</i> primary clock.
<b>client peer</b>	In a BGP route reflection, a member of a cluster that is not the route reflector. <i>See also</i> nonclient peer.
<b>CLNP</b>	Connectionless Network Protocol. ISO-developed protocol for OSI connectionless network service. A Network Layer protocol used by CLNS to handle data at the Transport Layer. CLNP is the OSI equivalent of IP.
<b>CLNS</b>	Connectionless Network Service. OSI Network Layer service that enables data transmission without establishing a circuit and that routes messages independently of any other messages. A Layer 3 protocol, similar to Internet Protocol version 4 (IPv4), CLNS uses network service access points (NSAP) instead of the prefix addresses found in IPv4 to specify end systems and intermediate systems.

<b>cloned device</b>	Copy of a managed or modeled device in the Junos Space Network Management Platform database. Junos Space Network Management Platform manages active cloned devices only. <i>See also</i> modeled device.
<b>Clos network fabric</b>	Multistage switching network in which switch elements in the middle stages are connected to all switch elements in the ingress and egress stages. Clos networks are well-known for their nonblocking properties—a connection can be made from any idle input port to any idle output port, regardless of the traffic load in the rest of the system.
<b>cloud</b>	Internet-based environment of virtualized computing resources, including servers, software, and applications that can be accessed by individuals or businesses with Internet connectivity. Cloud types include public, private, and hybrid.
<b>cloud computing</b>	Cloud computing represents a paradigm shift in the way companies allocate IT resources. Fundamentally, a cloud is an Internet-based environment of computing resources comprised of servers, software, and applications that can be accessed by any individual or business with Internet connectivity. Customers, referred to as tenants, can access resources that they need to run their business. Clouds offer customers a pay-as-you-go, lease-style investment with little to no upfront costs, versus buying all of the required hardware and software separately. Clouds allow businesses to scale easily and tier more services and functionality on an as-needed basis. Cloud computing is the basis for Infrastructure as a Service (IaaS) and Software as a Service (SaaS). <i>See also</i> Infrastructure as a Service, Software as a Service.
<b>cloud hub</b>	Automation endpoint that is part of a data center or point of presence (POP) acting as a hub point for overlay connections from many spoke devices. Cloud hubs are usually logical entities in a multitenant device (cloud hub device). <i>See also</i> cloud spoke, cloud site.
<b>cloud site</b>	Site where customers access network services and all virtualized network functions (VNFs) from a service provider's cloud in a network point of presence (POP). <i>See also</i> cloud hub, cloud spoke.
<b>cloud spoke</b>	Automation endpoint that is part of a customer virtual private cloud (VPC) on cloud platforms such as Amazon Web Services (AWS). Typically, these points are connected using overlay connections to hub sites. <i>See also</i> cloud hub, cloud site.
<b>CloudStack</b>	Cloud computing software for creating, managing, and deploying infrastructure cloud services.
<b>CLP</b>	cell loss priority. ATM cell bit that communicates the loss priority of the payload. A value of zero (0) specifies that the cell not be discarded if it encounters congestion as it moves through the network. A value of one (1) specifies that the network can drop the cell when congestion is encountered.

<b>cluster</b>	<ul style="list-style-type: none"> <li>• Route reflector and its clients (BGP) that have been grouped together. Consists of one system that acts as a route reflector, along with any number of client peers. Clients peer only with a route reflector and do not peer outside their cluster. Route reflectors peer with clients and other route reflectors within a cluster; outside a cluster they peer with other reflectors and other routers that are neither clients nor reflectors. The client peers receive their route information only from the route reflector system. Routers in a cluster do not need to be fully meshed. <i>See also</i> route reflector, route reflector client.</li> <li>• (of Linux servers) Two or more computers (called nodes or members) that work together to perform a task.</li> </ul>
<b>cluster list</b>	List of paths recorded as a packet travels through a BGP route reflector cluster.
<b>CMC</b>	Central Management Console. A feature of the Juniper Networks Media Flow Controller management interface that allows you to push configurations to a number of Media Flow Controllers from a central interface.
<b>CNA</b>	converged network adapter. Physical adapter that combines the functions of a Fibre Channel host bus adapter (HBA) to process Fibre Channel over Ethernet (FCoE) frames and a lossless Ethernet network interface card (NIC) to process non-FCoE Ethernet frames. CNAs have one or more Ethernet ports. CNAs encapsulate Fibre Channel frames in Ethernet for FCoE transport and de-encapsulate Fibre Channel frames from FCoE to native Fibre Channel.
<b>CnS, CNS</b>	Control and Status messages. 3G modem messages used to configure, set parameters, query status, receive event notification, and control traffic of event notifications for the 3G modem device.
<b>CO</b>	central office. Local telephone company building that houses circuit switching equipment used for subscriber lines in a given area.
<b>CoA</b>	change of authorization. RADIUS messages that dynamically modify session authorization attributes, such as data filters.
<b>Cobbler</b>	Linux application that enables rapid setup of a networking environment on multiple servers from a central host, using services such as Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS). <i>See also</i> DHCP, DNS.
<b>code division multiple access</b>	CDMA. Digital cellular technology that uses spread-spectrum techniques for digital transmission of radio signals, for example, between a mobile telephone and a base transceiver station (BTS). Unlike competing systems that use TDMA (time division multiple access), such as GSM (Global System for Mobile Communications), CDMA does not assign a specific frequency to each user. Instead, every channel uses the full available spectrum. Individual conversations are encoded with a pseudo-random digital sequence. CDMA consistently provides better capacity for voice and data communications than other commercial mobile technologies, allowing more subscribers to connect at any given time.

<b>code-point alias</b>	Name assigned to a pattern of code-point bits. This name is used, instead of the bit pattern, in the configuration of other class-of-service (CoS) components, such as classifiers, drop-profile maps, and rewrite rules.
<b>cold restart</b>	<p>Result of a standby SRP module becoming active without high availability (HA) being configured (no switchover from active SRP). Similar to a cold start, except:</p> <ul style="list-style-type: none"> <li>• The standby SRP becomes active much more quickly because the configuration is already loaded in the standby SRP memory and the device is running.</li> <li>• Line module software is reloaded, so it takes additional time for the newly active SRP to become fully operational.</li> </ul> <p><i>See also</i> graceful restart, warm restart.</p>
<b>color-aware rate limit</b>	Type of rate limit that can change the algorithm used, depending on the color of the incoming packet.
<b>color-based thresholding</b>	Process that assigns precedence to packets in JunosE QoS. Packets within the router are tagged with a drop precedence: committed—green; conformed—yellow; exceeded—red. When the queue fills above the exceeded threshold, the router drops red packets, but still queues yellow and green packets. When the queue fills above the conformed drop threshold, the router queues only green packets.
<b>color-blind rate limit</b>	Type of rate limit that runs the same algorithm for all packets, regardless of their color. <i>See also</i> rate-limit hierarchy.
<b>Command and Control devices</b>	Devices used by malicious users to orchestrate attacks such as DDoS attacks against websites, networks, or specific network devices. These devices can be purpose-built to control compromised devices across a network (including the Internet), or they themselves can be compromised devices to which an attacker has access.
<b>command completion</b>	Function of a router's command-line interface (CLI) that allows a user to enter only the first few characters in any command. Users access this function through the spacebar or Tab key.
<b>command privileges</b>	<p>Feature of the CLI in E Series routers. Command privileges fall within one of the following levels:</p> <ul style="list-style-type: none"> <li>• 0—Allows you to execute the help, enable, disable, and exit commands.</li> <li>• 1—Allows you to execute commands in User Exec mode plus commands at level 0.</li> <li>• 5—Allows you to execute Privileged Exec show commands plus the commands at levels 1 and 0.</li> <li>• 10—Allows you to execute all commands except support commands (provided by Juniper Networks Customer Service), or the privilege command to assign privileges to commands.</li> <li>• 15—Allows you to execute support commands and assign privileges to commands.</li> </ul>

<b>Command-and-Control server</b>	C&C server. Centralized computer that issues commands to botnets (compromised networks of computers) and receives reports back from them. Botnets can be used to gather sensitive information, such as account numbers or credit card information, or to participate in a distributed denial-of-service (DDoS) attack.
<b>command-line interface</b>	CLI. Interface provided for entering commands for configuring and monitoring the routing protocol software.
<b>commit</b>	Junos OS CLI configuration mode command that saves changes made to a router configuration, verifies the syntax, applies the changes to the configuration currently running on the router, and identifies the resulting file as the current operational configuration.
<b>commit script</b>	Enforces custom configuration rules. A script runs each time a new candidate configuration is committed and inspects the configuration. If a configuration breaks your custom rules, the script can generate actions for Junos OS.
<b>commit script macro</b>	Sequence of commands that allow you to create custom configuration syntax to simplify the task of configuring a routing platform. By itself, your custom syntax has no operational impact on the routing platform. A corresponding commit script macro uses your custom syntax as input data for generating standard Junos OS configuration statements that execute your intended operation.
<b>committed action</b>	In a rate-limit profile, action that drops, transmits, marks (IP and IPv6), or marks-exp (MPLS) when traffic flow does not exceed the rate. The mark value is not supported for hierarchical rate limits, and the transmit values—conditional, unconditional, and final—are supported only on hierarchical rate limits.
<b>committed information rate</b>	CIR. Specifies the average rate at which packets are admitted to the network. Each packet is counted as it enters the network. Packets that do not exceed the CIR are marked green, which corresponds to low loss priority. Packets that exceed the CIR but are below the peak information rate (PIR) are marked yellow, which corresponds to medium loss priority. <i>See also</i> trTCM, PIR.
<b>common and internal spanning tree</b>	CIST. Single spanning tree calculated by the Spanning Tree Protocol (STP) and the Rapid Spanning Tree Protocol (RSTP) and the logical continuation of that connectivity through multiple spanning-tree (MST) bridges and regions, calculated to ensure that all LANs in the bridged LAN are simply and fully connected. <i>See also</i> MSTI.
<b>Common Criteria</b>	International standard (ISO/IEC 15408) for computer security. <i>See also</i> EAL3.
<b>Common Criteria Evaluation Assurance Level 3</b>	EAL3. Compliance requirement defined by Common Criteria. Higher levels have more stringent requirements. <i>See also</i> Common Criteria.
<b>Common Language Equipment Identifier</b>	CLEI. Inventory code used to identify and track telecommunications equipment.
<b>Common Open Policy Service</b>	COPS. A query-and-response protocol used to exchange policy information between a policy server and its clients.

<b>Common Open Policy Service usage for policy provisioning</b>	COPS-PR. An IETF standard where the policy enforcement point (PEP) requests policy provisioning when the operational state of the interface and DHCP addresses change.
<b>Common Vulnerabilities and Exposures</b>	CVE. Dictionary of publicly known information security vulnerabilities and exposures that is international in scope and free for public use.
<b>community</b>	<ul style="list-style-type: none"> <li>• In BGP, a logical group of prefixes or destinations that share a common attribute; used to simplify a routing policy. Community members can be on different networks and in different autonomous systems. BGP allows you to define the community to which a prefix belongs. A prefix can belong to more than one community. The community attribute lists the communities to which a prefix belongs. Community information is included as one of the path attributes in BGP update messages.</li> <li>• In SNMP, an authentication scheme that authorizes SNMP clients based on the source IP address of incoming SNMP packets, defines which MIB objects are available, and specifies the operations (read-only or read-write) allowed on those objects.</li> </ul>
<b>Community Enterprise Operating System</b>	CentOS. Free Linux distribution built from the open-source code of Red Hat Enterprise Linux (RHEL).
<b>community list</b>	Sequential collection of permit and deny conditions. Each condition describes the community number to be matched. The router tests the community attribute of a route against the conditions in a community list one by one. The first match determines whether the router accepts (the route is permitted) or rejects (the route is denied) a route having the specified community. Because the router stops testing conditions after the first match, the order of the conditions is critical. If no conditions match, the router rejects the route.
<b>Compact Forwarding Engine Board</b>	CFEB. In Juniper Networks M7i and M10i Multiservice Edge Routers, CFEB provides route lookup, filtering, and switching to the destination port.
<b>CompactFlash drive</b>	Nonvolatile memory card in Juniper Networks M Series, MX Series, T Series, and J Series platforms used for storing a copy of Junos OS and the current and most recent router configurations. It also typically acts as the primary boot device.
<b>competitive local exchange carrier</b>	CLEC (pronounced “see-lek”). Company that competes with an already-established local telecommunications business by providing its own network and switching.
<b>complete sequence number PDU</b>	CSNP. Packet that contains a complete list of all the LSPs in the IS-IS database.
<b>compound explicit shared shaper</b>	One of four types of shared shapers, in which the software selects constituents based on the shared priority and shared weight configured using a JunosE command. If no attributes are specified, the software supplies a shared priority consistent with the legacy scheduler configuration. <i>See also</i> compound implicit shared shaper, simple explicit shared shaper, simple implicit shared shaper, CSNP.

<b>compound implicit shared shaper</b>	One of four types of shared shapers, in which the software selects constituents automatically. If a node exists in a given traffic-class group, the node is active and the queues stacked above it are inactive constituents. <i>See also</i> compound explicit shared shaper, simple explicit shared shaper, simple implicit shared shaper, CSNP.
<b>compound shared shaping</b>	Hardware-assisted mechanism that controls bandwidth for all scheduler objects associated with the subscriber logical interface. <i>See also</i> shared shaping, simple shared shaping.
<b>Compressed Real-Time Transport Protocol</b>	CRTP. Decreases the size of the IP, UDP, and RTP headers and works with reliable and fast point-to-point links for voice over IP (VoIP) traffic. CRTP is defined in RFC 2508, <i>Compressing IP/UDP/RTP Headers for Low-Speed Serial Links</i> .
<b>computed historical datapoints</b>	CHD. Traffic samples that have been computed in some manner, such as summation and averaging.
<b>concurrent routing and bridging</b>	CRB. Mechanism whereby an E Series router can route a protocol among a group of interfaces in one bridge group and concurrently bridge the same protocol among a separate group of interfaces in a different bridge group on the router.
<b>Concurrent Versions System</b>	CVS. Widely used version control system for software development or data archives.
<b>confederation</b>	In BGP, group of systems that appears to external autonomous systems as a single autonomous system. A set of sub-ASs is established within an AS to reduce mesh overhead. BGP peers within each sub-AS are fully meshed, but the sub-ASs do not have to be fully meshed within the AS. <i>See also</i> route reflection.
<b>configlet</b>	Feature that contains the initial configuration required to connect a modeled or cloned device to Junos Space Network Management Platform. Using a USB storage device, you can copy and download the configlet in XML, CLI, or curly-braces format to a device.
<b>configuration caching</b>	Mechanism that prevents the system from being partially configured with changes in the event of a reset. When a script or macro begins execution, the resulting configuration changes are automatically cached in system RAM rather than being committed to nonvolatile storage (NVS). When the script or macro completes execution, the cache is flushed as a background operation, saving the configuration changes to NVS.
<b>configuration group</b>	Collection of configuration statements whose inheritance can be directed in the rest of the device configuration. The same group can be applied to different sections of the configuration, and different sections of one group's configuration statements can be inherited in different places in the configuration.
<b>configuration management server</b>	Remote server used to configure Juniper Networks routers when using the NETCONF XML Management Protocol or the Junos XML Management Protocol.
<b>configuration mode</b>	Junos OS mode that allows a user to alter the router's current configuration.



<b>configuration statement</b>	Type of command that you use to configure a device running Junos OS. A configuration is stored as a hierarchy of statements. In configuration mode, you enter these statements to define all properties of Junos OS, including interfaces, general routing information, routing protocols, user access, and several system and hardware properties. <i>Also known as</i> configuration command.
<b>configure script</b>	The script that must be run after installing and before starting the Junos App Balancer. It deals with fundamental settings such as passwords and specifying whether the Junos App Balancer should stand alone or join an existing cluster.
<b>conflict</b>	Problem that occurs when an address within the IP address pool is being used by a host that does not have an associated binding in the DHCP server's database. Addresses with conflicts are removed from the pool and logged in a conflicts list until you clear the list.
<b>conformed action</b>	In a rate-limit profile, an action that drops, transmits, marks (IP and IPv6), or marks-exp (MPLS) when traffic flow exceeds the rate but not the excess burst. The mark value is not supported for hierarchical rate limits, and the transmit values—conditional, unconditional, and final—are supported only on hierarchical rate limits.
<b>connect</b>	BGP neighbor state in which the local router has initiated the TCP session and is waiting for the remote peer to complete the TCP connection.
<b>connection admission control</b>	CAC. Set of actions that the network takes during connection setup or renegotiation. ATM networks use CAC to determine whether to accept a connection request, based on whether allocating the connection's requested bandwidth would cause the network to violate the traffic contracts of existing connections.
<b>connection management</b>	Settings for managing the connection between a remote client and a virtual server, or between a pool and its nodes.
<b>connection-based forwarding</b>	CBF. A method of forwarding frames in which forwarding decisions are made using only the identity of the ingress interface. No part of a packet's contents is used to determine how a packet should be forwarded.
<b>connection-oriented protocol</b>	Protocol that exchanges control information with a remote computer to verify that the remote computer is ready to receive data before the originating computer sends the data.
<b>Connectionless Network Protocol</b>	CLNP. ISO-developed protocol for OSI connectionless network service. A Network Layer protocol used by CLNS to handle data at the Transport Layer. CLNP is the OSI equivalent of IP.
<b>Connectionless Network Service</b>	CLNS. OSI Network Layer service that enables data transmission without establishing a circuit and that routes messages independently of any other messages. A Layer 3 protocol, similar to Internet Protocol version 4 (IPv4), CLNS uses network service access points (NSAP) instead of the prefix addresses found in IPv4 to specify end systems and intermediate systems.

<b>connectionless protocol</b>	Protocol, such as IP, that does not exchange control information to establish an end-to-end connection before transmitting data.
<b>connectivity fault management</b>	CFM. End-to-end per-service-instance Ethernet layer operation, administration, and management (OAM) protocol. CFM includes proactive connectivity monitoring, fault verification, and fault isolation for large Ethernet metropolitan-area networks.
<b>Connector Interface Panel</b>	CIP. Panel that contains connectors for the Routing Engines, BITS interfaces, and alarm relay contacts on some M Series and T Series routers.
<b>constant bit rate</b>	CBR. An ATM service category that supports a constant and guaranteed rate to transport services such as video or voice, as well as circuit emulation, requiring rigorous timing control and performance parameters. For ATM1 and ATM2 IQ interfaces, data is serviced at a constant, repetitive rate. CBR is used for traffic that does not need to periodically burst to a higher rate, such as nonpacketized voice and audio.
<b>constituent</b>	Scheduler node or queue associated with a logical interface. A shared shaper is configured for a logical interface; all queues and scheduler nodes associated with that logical interface are constituents of the shared shaper. <i>See also</i> active constituent; inactive constituent.
<b>constrained path</b>	In traffic engineering, a path determined by using the CSPF algorithm. The Explicit Route Object (ERO) carried in the RSVP packets contains the constrained path information. <i>See also</i> ERO.
<b>Constrained Shortest Path First</b>	CSPF. MPLS algorithm modified to take into account specific restrictions when calculating the shortest path across the network.
<b>Constraint-Based Routed Label Distribution Protocol</b>	CR-LDP. Traffic engineering signaling protocol for MPLS IP networks. CR-LDP provides mechanisms for establishing explicitly routed label switched paths (LSPs).
<b>constraint-based routed label-switched path</b>	CR-LSP. Explicitly routed label switched path (LSP) established by means of CR-LDP
<b>constraint-based routing (MPLS)</b>	Mechanism to establish paths based on certain criteria (explicit route, QoS parameters). The standard routing protocols can be enhanced to carry additional information to be used when running the route calculation.
<b>content addressable memory</b>	CAM. Memory chip in which content is compared in each bit cell, allowing for very fast table lookups.
<b>content delivery network</b>	CDN. A system of computers networked together across the Internet that cooperate transparently to deliver content to end users, most often for the purpose of improving performance, scalability, and cost efficiency. <i>Also known as</i> content distribution network.

<b>content distribution network</b>	CDN. A system of computers networked together across the Internet that cooperate transparently to deliver content to end users, most often for the purpose of improving performance, scalability, and cost efficiency. <i>Also known as</i> content delivery network.
<b>context node</b>	Node that the Extensible Stylesheet Language for Transformations (XSLT) processor is currently examining. XSLT changes the context as it traverses the XML document's hierarchy. <i>See also</i> XSLT.
<b>context-sensitive help</b>	Function of the router's command-line interface (CLI) that allows a user to request information about the Junos OS hierarchy. You can access context-sensitive help in both operational and configuration mode.
<b>continuity check cells</b>	CC cells. Cells that provide continual monitoring of a connection on a segment or from end to end.
<b>Contrail</b>	Open, standards-based software solution that delivers network virtualization and service automation for federated cloud networks.
<b>Contrail Service Orchestration</b>	CSO. Comprehensive management and orchestration platform that delivers virtualized, managed software-defined WAN (SD-WAN), VPN, and security network services and orchestrates the entire service life cycle, from creation to delivery, in a modular, open framework.
<b>contributing routes</b>	Active IP routes in the routing table that share the same most-significant bits and are more specific than an aggregated or generated route.
<b>Control and Status messages</b>	CnS, CNS. 3G modem messages used to configure, set parameters, query status, receive event notification, and control traffic of event notifications for the 3G modem device.
<b>Control Board</b>	CB. On a Juniper Networks router, part of the host subsystem that provides control and monitoring functions for router components.
<b>control plane</b>	Virtual network path used to set up, maintain, and terminate data plane connections. <i>See also</i> data plane.
<b>controller</b>	On-premise component that serves as an intermediary between SRX Series devices and various sources of security intelligence. Controllers run as virtual machines (VMs) inside the Junos Space Fabric. Security Director manages the SRX Series devices and the security intelligence connectors. <i>Also known as</i> connector.
<b>converged network adapter</b>	CNA. Physical adapter that combines the functions of a Fibre Channel host bus adapter (HBA) to process Fibre Channel over Ethernet (FCoE) frames and a lossless Ethernet network interface card (NIC) to process non-FCoE Ethernet frames. CNAs have one or more Ethernet ports. CNAs encapsulate Fibre Channel frames in Ethernet for FCoE transport and de-encapsulate Fibre Channel frames from FCoE to native Fibre Channel.

<b>convergence</b>	State in which a set of devices in a network share the same topology information. The routers in the network collect the topology information from one another through the routing protocol. The routers achieve a state of convergence when they share routing information so that the routing tables in all devices map to the same network topology and the devices know the best route to a destination. In a converged network, all devices are aware of the network topology and the optimal route to send a packet. Any change—for example, the failure of a device—in the network affects convergence until information about the change is propagated to all devices and convergence is achieved again. <i>See also</i> convergence time.
<b>convergence time</b>	Time taken by the devices in a network to reach convergence after a change in topology. <i>See also</i> convergence.
<b>cookie</b>	A small item of data given to a client by a server that is stored either on the client's file system or in the browser client session. The client stores the data and provides it to the server on subsequent requests. Cookies are used to track client data such as session persistence maps.
<b>Cooperative Association for Internet Data Analysis</b>	CAIDA. Association that provides tools and analyses promoting the engineering and maintenance of a robust, scalable Internet infrastructure. One tool, cflowd, allows you to collect an aggregate of sampled flows and send the aggregate to a specified host that runs the cflowd application available from CAIDA.
<b>cooperative route filtering</b>	Enables a BGP speaker to send an inbound route filter to a peer and have the peer install it as an outbound filter on the remote end of the session. <i>Also known as</i> outbound route filtering (ORF).
<b>Coordinated Universal Time</b>	UTC. Historically referred to as Greenwich mean time (GMT), a high-precision atomic time standard that tracks Universal Time (UT) and is the basis for legal civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC.
<b>COPS</b>	Common Open Policy Service (Protocol). A query-and-response protocol used to exchange policy information between a policy server and its clients.
<b>COPS-PR</b>	COPS usage for policy provisioning. An IETF standard where the policy enforcement point (PEP) requests policy provisioning when the operational state of the interface and DHCP addresses change.
<b>core</b>	Central backbone of the network.
<b>core dump file</b>	In E Series routers, file that indicates which module has failed by referencing that module's hardware slot number (the slot number designation on the system backplane). This slot number is different from the chassis slot number that appears on the front of the chassis and in screen displays.
<b>CoS</b>	class of service. Method of classifying traffic on a packet-by-packet basis using information in the type-of-service (ToS) byte to provide different service levels to different traffic. <i>See also</i> QoS.
<b>CoS bits</b>	class-of-service bits. Experimental bits, located in each MPLS label and used to encode the CoS value of a packet as it traverses an LSP. <i>Also known as</i> EXP bits.

<b>cosd</b>	Class-of-service process that enables the routing platform to provide different levels of service to applications based on packet classifications.
<b>cost</b>	Unitless number assigned to a path between neighbors, based on throughput, round-trip time, and reliability. The sum of path costs between source and destination hosts determines the overall path cost. OSPF uses the lowest cost to determine the best path.
<b>CPE</b>	customer premises equipment. Telephone, modem, router, or other service provider equipment located at a customer site.
<b>CPU</b>	central processing unit. Hardware component in a computer that executes instructions from memory, performing arithmetic and logical operations as required.
<b>CR-LDP</b>	Constraint-Based Routed Label Distribution Protocol. Traffic engineering signaling protocol for MPLS IP networks. CR-LDP provides mechanisms for establishing explicitly routed label-switched paths (LSPs).
<b>CR-LSP</b>	constraint-based routed label-switched path. Explicitly routed label-switched path (LSP) established by means of CR-LDP.
<b>craft interface</b>	Mechanisms used by a Communication Workers of America craftsperson to operate, administer, and maintain equipment or provision data communications. On a Juniper Networks router, the craft interface allows you to view status and troubleshooting information and perform system control functions.
<b>CRB</b>	concurrent routing and bridging. Mechanism whereby an E Series router can route a protocol among a group of interfaces in one bridge group and concurrently bridge the same protocol among a separate group of interfaces in a different bridge group on the router.
<b>CRC</b>	cyclic redundancy check. Error-checking technique that uses a calculated numeric value to detect errors in transmitted data.
<b>CRC errors</b>	Indicates the number of packets generating a cyclic redundancy code error processed through the security device over the selected interface.
<b>Critical Security Parameter</b>	CSP. On routers running Junos-FIPS software, a collection of cryptographic keys and passwords that must be protected at all times.
<b>CRL</b>	certificate revocation list. List of digital certificates that have been invalidated, including the reasons for revocation and the names of the entities that issued them. A CRL prevents use of digital certificates and signatures that have been compromised.
<b>C RTP</b>	Compressed Real-Time Transport Protocol. Decreases the size of the IP, UDP, and RTP headers and works with reliable and fast point-to-point links for voice over IP (VoIP) traffic. CRTP is defined in RFC 2508, <i>Compressing IP/UDP/RTP Headers for Low-Speed Serial Links</i> .

<b>Crypto Accelerator Module</b>	Processor card that speeds up certain cryptographic IP Security (IPsec) services on some Juniper Networks devices. For supported cryptographic algorithms, refer to the product documentation for the devices that support the Crypto Accelerator Module.
<b>Crypto Officer</b>	Superuser responsible for the proper operation of a router running Junos-FIPS software.
<b>CSCP</b>	Class Selector code point. Eight Differentiated Services code point (DSCP) values of the form xxx000 (where x can be 0 or 1). Defined in RFC 2474, <i>Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers</i> .
<b>CSNP</b>	complete sequence number PDU. Packet that contains a complete list of all the LSPs in the IS-IS database.
<b>CSO</b>	Contrail Service Orchestration. Comprehensive management and orchestration platform that delivers virtualized, managed software-defined WAN (SD-WAN), VPN, and security network services and orchestrates the entire service life cycle, from creation to delivery, in a modular, open framework.
<b>CSP</b>	Critical Security Parameter. On routers running Junos-FIPS software, a collection of cryptographic keys and passwords that must be protected at all times.
<b>CSPF</b>	Constrained Shortest Path First. MPLS algorithm modified to take into account specific restrictions when calculating the shortest path across the network.
<b>CSR</b>	certificate signing request. A request created from a self-signed certificate. You can submit the CSR to a certificate authority for them to sign.
<b>CSU/DSU</b>	channel service unit/data service unit. A channel service unit connects a digital phone line to a multiplexer or other digital signal device. A data service unit connects data terminal equipment (DTE) to a digital phone line.
<b>CTS</b>	clear to send (signal). Signaling message transmitted in response to an RTS (request to send) message that enables the sender of the RTS message to begin data transfer.
<b>custom feed</b>	Feed template where settings and requirements are specified by the user. Using a custom feed, you can modify or customize the name and parameters of any field and change the order of any field.
<b>customer edge</b>	CE. Customer router connected to the service provider network.
<b>customer edge device</b>	CE device. Router or switch in the customer's network that is connected to a service provider's provider edge (PE) router and participates in a Layer 3 VPN.
<b>customer premises equipment</b>	CPE. Telephone, modem, router, or other service provider equipment located at a customer site.

<b>customer VLAN</b>	C-VLAN. A stacked VLAN, defined by IEEE 802.1ad, that contains an outer tag corresponding to the S-VLAN and an inner tag corresponding to the C-VLAN. A C-VLAN often corresponds to customer premises equipment (CPE). Scheduling and shaping is often used on a C-VLAN to establish minimum and maximum bandwidth limits for a customer. <i>See also</i> S-VLAN.
<b>customer-side translator</b>	CLAT. Defined in RFC 6877, <i>464XLAT: Combination of Stateful and Stateless Translation</i> , that complies with RFC 6145, <i>IP/ICMP Translation Algorithm</i> . CLAT algorithmically translates 1:1 private IPv4 addresses to global IPv6 addresses, and vice versa. The CLAT function is applicable to a router or an end node such as a mobile phone. <i>See also</i> 464XLAT and PLAT.
<b>Customized Applications of Mobile Enhanced Logic</b>	CAMEL. An ETSI standard for GSM networks that enhances the provision of Intelligent Network services.
<b>CVE</b>	Common Vulnerabilities and Exposures. Dictionary of publicly known information security vulnerabilities and exposures that is international in scope and free for public use.
<b>CVS</b>	Concurrent Versions System. Widely used version control system for software development or data archives.
<b>CXP</b>	100/120-Gbps extended form-factor pluggable transceiver that provides support for fiber-optic cables without built-in clock recovery circuits. (The C stands for <i>centum</i> , or 100, but do not use centum in the expansion.)
<b>cyclic redundancy check</b>	CRC. Error-checking technique that uses a calculated numeric value to detect errors in transmitted data.
<b>D</b>	
<b>D-channel</b>	delta channel. Circuit-switched channel that carries signaling and control for B-channels. In Basic Rate Interface (BRI) applications, it can also support customer packet data traffic at speeds up to 9.6 Kbps. <i>See also</i> B-channel, BRI.
<b>daemon</b>	Background process that performs operations for the system software and hardware. Daemons normally start when the system software is booted, and run as long as the software is running. In Junos OS, daemons are also referred to as processes.
<b>damping</b>	Method of reducing the number of update messages sent between BGP peers, thereby reducing the load on those peers without adversely affecting the route convergence time for stable routes. <i>Also known as</i> flap damping.
<b>data carrier detect</b>	DCD. Hardware signal defined by the RS-232C standard that indicates that the device, usually a modem, is online and ready for transmission.
<b>data center</b>	Centralized physical or virtual facility in which all data for a specific purpose is stored, managed, and communicated.

<b>data center bridging</b>	DCB. Set of IEEE specifications that enhances the Ethernet standard to allow it to support converged Ethernet (LAN) and Fibre Channel (SAN) traffic on one Ethernet network. DCB features include priority-based flow control (PFC), enhanced transmission selection (ETS), Data Center Bridging Capability Exchange protocol (DCBX), quantized congestion notification (QCN), and full-duplex 10-Gigabit Ethernet ports.
<b>Data Center Bridging Capability Exchange protocol</b>	DCBX. Discovery and exchange protocol for conveying configuration and capabilities among neighbors to ensure consistent configuration across the network. It is an extension of the Link Layer Data Protocol (LLDP, described in IEEE 802.1ab, <i>Station and Media Access Control Connectivity Discovery</i> ).
<b>data circuit-terminating equipment</b>	DCE. Device, such as a modem, that provides the interface between a circuit and data terminal equipment (DTE). <i>Also known as</i> data communications equipment.
<b>data communications equipment</b>	DCE. Device, such as a modem, that provides the interface between a circuit and data terminal equipment (DTE). <i>Also known as</i> data circuit-terminating equipment.
<b>Data Encryption Standard</b>	DES. Method for encrypting information using a 56-bit key. Considered to be a legacy method and insecure for many applications. <i>See also</i> 3DES.
<b>Data Encryption Standard-Cipher Block Chaining</b>	DES-CBC. Method for encrypting single DES keys.
<b>data exchange interface</b>	DXI. Specification developed by the switched megabit data services (SMDS) interest group to define the interaction between internetworking devices and CSUs/DSUs that are transmitting over an SMDS access line.
<b>Data Link Layer</b>	Second level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer provides the functional and procedural means to transfer data between network entities by splitting data into frames to send on the Physical Layer and receiving acknowledgment frames. It performs error checking and retransmits frames not received correctly. In general, it controls the flow of information across the link, providing an error-free virtual channel to the Network Layer. <i>Also known as</i> Layer 2.
<b>data link switching</b>	DLSw. Method of tunneling IBM System Network Architecture (SNA) and NetBIOS traffic over an IP network, used because Junos OS does not support NetBIOS. <i>See also</i> tunneling protocol.
<b>data model</b>	DM. In NSM, an XML file that contains configuration data for an individual device. The DM is stored in the NSM Device Server. When you create, update, or import a device, the GUI Server edits the Abstract Data Model (ADM) to reflect the changes, then translates that information to the DM.
<b>data modeling</b>	Software process used to define and analyze data requirements that support a business process.
<b>data modeling language</b>	Software language, such as YANG, used for data modeling. <i>See also</i> data modeling, YANG.



<b>data packet</b>	Chunk of data transiting the router from the source to a destination.
<b>data plane</b>	Virtual network path used to distribute data between nodes. <i>Also known as</i> transport plane. <i>See also</i> control plane.
<b>Data Plane Development Kit</b>	DPDK. Set of libraries and drivers used in the development of applications that perform fast processing of packets on industry-standard processors, such as x86 processors.
<b>data service unit</b>	channel service unit, CSU/DSU. A channel service unit connects a digital phone line to a multiplexer or other digital signal device. A data service unit connects data terminal equipment (DTE) to a digital phone line.
<b>data set ready</b>	DSR. One of the control signals on a standard RS-232C connector that indicates whether the DCE is connected and ready to start.
<b>data store</b>	General term for a repository of data, such as a database or an electronic file.
<b>data stream inversion</b>	Collection of data bits in a data stream that are inverted for transmission.
<b>data terminal equipment</b>	DTE. RS-232-C interface that a computer uses to exchange information with a serial device, such as a computer, host, or terminal, that communicates with DCE. At the terminal end of a data transmission, DTE comprises the transmit and receive equipment. <i>See also</i> DCE.
<b>data terminal ready signal</b>	DTR signal. Sent over a dedicated wire (RS-232 connection) from a computer (or terminal) to a transmission device to indicate that the computer is ready to receive data.
<b>data-driven multicast distribution tree tunnel</b>	data-MDT tunnel. Multicast tunnel created and deleted based on defined traffic loads and designed to ease loading on the default MDT tunnel.
<b>data-link connection identifier</b>	DLCI. 10-bit channel number attached to data frames to inform a Frame Relay network how to route the data in a Frame Relay virtual connection (a logical interface).
<b>data-MDT tunnel</b>	data-driven multicast distribution tree (MDT) tunnel. Multicast tunnel created and deleted based on defined traffic loads and designed to ease loading on the default MDT tunnel.
<b>database description packet</b>	OSPF packet type used in the formation of an adjacency. The packet sends summary information about the local router's database to the neighboring router.
<b>datagram</b>	Packet format defined by IP.
<b>datapath debugging</b>	Method to collect traces and packet captures at different locations in a packet-processing path of an SRX Series Services Gateway. For example, on high-end SRX Series devices, packet captures can be collected at multiple processing units such as ingress network processor, services processing unit, egress network processor, and so on.

<b>DCB</b>	data center bridging. Set of IEEE specifications that enhances the Ethernet standard to allow it to support converged Ethernet (LAN) and Fibre Channel (SAN) traffic on one Ethernet network. DCB features include priority-based flow control (PFC), enhanced transmission selection (ETS), Data Center Bridging Capability Exchange protocol (DCBX), quantized congestion notification (QCN), and full-duplex 10-Gigabit Ethernet ports.
<b>DCBX</b>	Data Center Bridging Capability Exchange protocol. Discovery and exchange protocol for conveying configuration and capabilities among neighbors to ensure consistent configuration across the network. It is an extension of the Link Layer Data Protocol (LLDP, described in IEEE 802.1ab, <i>Station and Media Access Control Connectivity Discovery</i> ).
<b>dcd</b>	device control process. Junos OS interface process (daemon).
<b>DCD</b>	data carrier detect. Hardware signal defined by the RS-232C standard that indicates that the device, usually a modem, is online and ready for transmission.
<b>DCE</b>	<ul style="list-style-type: none"> <li>• data communications equipment, data circuit-terminating equipment. Device, such as a modem, that provides the interface between a circuit and data terminal equipment (DTE).</li> <li>• Distributed Computing Environment. An industry-standard software technology for setting up and managing computing and data exchange in a system of distributed computers. DCE is typically used in a large client/server network of computing systems that include servers of different sizes, scattered geographically. With DCE, application users can share applications and data at remote servers. Application programmers don't need to be aware of where their programs will run or where the data will be located.</li> </ul>
<b>DCU</b>	destination class usage. Means of tracking traffic originating from specific prefixes on the customer edge router and destined for specific prefixes on the provider core router, based on the IP source and destination addresses.
<b>DDoS</b>	distributed denial-of-service attack. Attack, typically a flood, from multiple source points. A DDoS attack can be more effective in disrupting services than a DoS, because the flood of incoming attacks are coming from multiple sources.
<b>DE</b>	discard-eligible bit. In a Frame Relay network, header bit that notifies devices on the network that traffic can be dropped during congestion to ensure the delivery of higher priority traffic (those without the DE bit set).
<b>deactivate</b>	Method of modifying the router's active configuration. Portions of the hierarchy marked as inactive using this command are ignored during the router's commit process as if they were not configured at all.
<b>dead interval</b>	Amount of time that an OSPF router maintains a neighbor relationship before declaring that neighbor as no longer operational. Junos OS uses a default value of 40 seconds for this timer.

<b>dead peer detection</b>	DPD. Method that recognizes the loss of the primary IPsec Internet Key Exchange (IKE) peer and establishes a secondary IPsec tunnel to a backup peer. It is a keepalive mechanism that enables the E Series router to detect when communication to a remote IPsec peer has been disconnected. DPD enables the router to reclaim resources and to optionally redirect traffic to an alternate failover destination. If DPD is not enabled, traffic continues to be sent to the unavailable destination. <i>Also known as</i> IKE keepalive.
<b>debugging</b>	Technique used by programmers to find and reduce the number of bugs, or defects, in a computer program or a piece of electronic hardware, thus making it behave as expected. <i>See also</i> tracing.
<b>Deep Inspection</b>	DI. Firewall methodology that builds on the strength of stateful inspection, integrating intrusion prevention technology to provide application-level attack protection at the network perimeter. The Deep Inspection firewall can efficiently perform network security functions as well as analysis on the application message to determine whether to accept or deny traffic.
<b>Deep Inspection action</b>	Action performed by a security device when the permitted traffic matches an attack object specified in the rule. Deep Inspection actions include drop connection, drop packet, close client, and so on.
<b>Deep Inspection profile</b>	DI profile. Contains predefined attack object groups (created by Juniper Networks), and your own custom attack object groups. After creating the DI Profile, you add the Profile object in the Rule Option column of a firewall rule.
<b>default address</b>	Router address that is used as the source address on unnumbered interfaces.
<b>default configuration</b>	Configuration that takes place on a device that cannot locate a configuration (boot) file. You can set up two default configuration files for autoinstallation on the device: <b>network.conf</b> to specify IP address-to-hostname mappings for devices on the network, and <b>router.conf</b> to provide just enough configuration for your subsequent Telnet access.
<b>default route</b>	Route used to forward IP packets when a more specific route is not present in the routing table. Often represented as 0.0.0.0/0, the default route is sometimes referred to as the route of last resort.
<b>delta</b>	Difference or discrepancy. For example, in NSM, the difference between the configuration running on the physical device and the configuration in NSM is called the delta.
<b>delta channel</b>	D-channel. Circuit-switched channel that carries signaling and control for B-channels. In Basic Rate Interface (BRI) applications, it can also support customer packet data traffic at speeds up to 9.6 Kbps. <i>See also</i> B-channel, BRI.
<b>demand circuit</b>	Network segment whose cost varies with usage, according to a service-level agreement (SLA) with a service provider. Demand circuits limit traffic based on either bandwidth (bits or packets transmitted) or access time. <i>See also</i> multicast.

<b>demilitarized zone</b>	DMZ. Physical or logical subnet used as an additional layer of security between an organization's network and an untrusted network (often the Internet); a neutral zone used to secure a network from external access. An attacker only has access to equipment in the DMZ.
<b>denial of service</b>	DoS. System security breach in which network services become unavailable to users.
<b>denial-of-service attack</b>	DoS attack. Any attempt to deny valid users access to network or server resources by using up all the resources of the network element or server. Typically, an attacker sends a flood of information to overwhelm a service system's resources, causing the server to ignore valid service requests.
<b>dense mode</b>	Method of forwarding multicast traffic to interested listeners. Dense mode forwarding assumes that most of the hosts on the network will receive the multicast data. Routers flood packets and prune unwanted traffic every 3 minutes. <i>See also</i> sparse mode.
<b>Dense Port Concentrator</b>	DPC. Network interface-specific card that can be installed in the router.
<b>dense wavelength division multiplexing</b>	DWDM. Technology that enables data from different sources to be carried together on an optical fiber, with each signal carried on its own separate wavelength.
<b>DES</b>	Data Encryption Standard. Method for encrypting information using a 56-bit key. Considered to be a legacy method and insecure for many applications. <i>See also</i> 3DES.
<b>DES-CBC</b>	Data Encryption Standard-Cipher Block Chaining. Method for encrypting single DES keys.
<b>designated intermediate system</b>	DIS. An IS-IS router that is elected by priority on an interface basis. In the case of a tie, the router with the highest MAC address becomes the DIS. DIS is analogous to the designated router in OSPF, although the election process and adjacencies within multiaccess media differ significantly. DIS assists broadcast routers to synchronize their IS-IS databases.
<b>designated router</b>	DR. <ul style="list-style-type: none"> <li>• Router on a subnet that is selected to control multicast routes for the sources and receivers on the subnet. If several routers are present, the selected DR is the router with the highest priority. If the DR priorities match, the router with the highest IP address is selected as the DR. The source's DR sends PIM register messages from the source network to the rendezvous point (RP). The receiver's DR sends PIM join and PIM prune messages from the receiver network toward the RP.</li> <li>• In OSPF, a router, selected by other routers, that is responsible for sending link-state advertisements (LSAs) that describe the network, thereby reducing the amount of network traffic and the size of the topology databases maintained on the other routers.</li> </ul>
<b>destination class usage</b>	DCU. Means of tracking traffic originating from specific prefixes on the customer edge router and destined for specific prefixes on the provider core router, based on the IP source and destination addresses.
<b>destination prefix length</b>	Number of bits of the network address used for the host portion of a CIDR IP address.

<b>destination service access point</b>	DSAP. Identifies the destination for which a logical link control protocol data unit (LPDU) is intended.
<b>device administrator</b>	Person who uses an interface to control and manage a network security device.
<b>device control process</b>	dcd. Junos OS interface process (daemon).
<b>device discovery</b>	Process of discovering devices in your network to add them to the Junos Space Network Management Platform database. Junos Space Network Management Platform uses SSH, ICMP ping, or SNMP to perform device discovery. The inventory and configuration of the device at the time of device discovery is added to the Junos Space Network Management Platform database. Use an IP address, a DNS hostname, an IP address range, or an IP subnet to discover devices and credentials, RSA keys, or SSH fingerprints to authenticate the discovered devices in the network.
<b>device discovery rules</b>	Sets of rules that define subnets or ranges of IP addresses to scan for devices in your network.
<b>Device Management Interface</b>	DMI. In NSM, a common, secure management interface used by all device families. DMI is based on a common protocol and device-specific schemas for configuration, inventory management, logging, and status monitoring. DMI schemas can be updated without the need to upgrade NSM.
<b>Device Monitor</b>	Displays information in NSM about individual devices, their configuration and connection status, and memory usage.
<b>Device Server</b>	In NSM, component of the management system that handles communication between the GUI server and the device, collects data from the managed devices on your network, formats configuration information sent to your managed device, and consolidates log and event data.
<b>device template</b>	Feature in Junos Space Network Management Platform to deploy a common configuration to multiple devices from the Junos Space user interface. You can access and configure all the configuration parameters for all devices supported on Junos Space Network Management Platform when you create the template. Before you deploy a device template to a device, you can assign the template to the device and validate the configuration in the template.
<b>DevOps</b>	Software development method in which development and operations staff collaborate from design to release of new software and services. The purpose of the method is to optimize operational performance of the software, often with a goal of automating its development and deployment.
<b>DF</b>	do not fragment (bit). One-bit flag in the IP datagram header that specifies if a datagram should be fragmented. A value of zero (0) indicates to fragment the datagram; a value of one (1) indicates not to fragment the datagram.
<b>DFC</b>	dynamic flow capture. Process of collecting packet flows that match a particular filter list to one or more content destinations using an on-demand control protocol that relays requests from one or more control sources.

<b>DHCP</b>	Dynamic Host Configuration Protocol. Mechanism through which hosts using TCP/IP can obtain protocol configuration parameters automatically from a DHCP server on the network; allocates IP addresses dynamically so that they can be reused when no longer needed.
<b>DHCP equal access mode</b>	Mode in which a DHCP local server works with the Juniper Networks Session and Resource Control (SRC) software to provide an advanced subscriber configuration and management service. In equal access mode, the router enables access to non-PPP users. Non-PPP equal access requires the use of the E Series router DHCP local server and SRC software, which communicates with a RADIUS server.
<b>DHCP external server</b>	Server that enables an E Series router not running DHCP relay or DHCP proxy server to monitor DHCP packets and keep information for subscribers based on their IP and MAC addresses. When this server application is used, all DHCP traffic to and from the external server is monitored by the router. The services provided by integrating the E Series router DHCP external server application with SRC software are similar to those provided when the DHCP local server is integrated with SRC software. This application is used with other features of the router to provide subscriber management.
<b>DHCP options</b>	Configuration settings sent within a DHCP message from a DHCP server to a DHCP client.
<b>DHCP proxy client</b>	Configuration that enables the router to obtain an IP address from a DHCP server for a remote PPP client. Each virtual router (acting as a DHCP proxy client) can query up to five DHCP servers. For PPP users, the router acts as a DHCP client to obtain an address for the user.
<b>DHCP relay client</b>	Enhanced component of DHCP relay that manages host routes for DHCP clients, including selecting the single most appropriate offer from multiple DHCP servers.
<b>DHCP relay proxy</b>	Enhancement to the E Series router's DHCP relay component that manages host routes for DHCP clients, including selecting the single most appropriate offer from multiple DHCP servers. <i>Also known as relay proxy.</i>
<b>DHCP server</b>	Host that provides an IP address and configuration settings to a DHCP client. A J Series or an SRX Series device is a DHCP server.
<b>DHCP standalone mode</b>	Mode in which the DHCP local server operates as a basic DHCP server. Clients are not authenticated by default; however, you can optionally configure the DHCP local server to use AAA authentication for the incoming clients.
<b>dhcpcd</b>	DHCP process that implements the DHCP client, allowing the device to obtain IP addresses from the network DHCP server, set other configuration parameters, manage TCP/IP settings propagation, and display client-related information.
<b>DI</b>	Deep Inspection. Firewall methodology that builds on the strength of stateful inspection, integrating intrusion prevention technology to provide application-level attack protection at the network perimeter. The DI firewall can efficiently perform network security functions as well as analysis on the application message to determine whether to accept or deny traffic.

<b>DI profile</b>	Deep Inspection profile. Contains predefined attack object groups (created by Juniper Networks), and your own custom attack object groups. After creating the DI Profile, you add the Profile object in the Rule Option column of a firewall rule.
<b>diagnose pages</b>	The section of the admin server that helps you diagnose and fix any faults with your Junos App Balancer setup.
<b>Diagnostic Mode</b>	DM. Qualcomm protocol specification and mechanism used to collect debug logs from Sierra 3G wireless modem firmware.
<b>dial backup</b>	Feature that reestablishes network connectivity through one or more backup ISDN dialer interfaces after a primary interface fails. When the primary interface is reestablished, the ISDN interface is disconnected.
<b>dial-in</b>	Feature that enables a device to receive calls from the remote end of a backup ISDN connection. The remote end of the ISDN call might be a service provider, a corporate central location, or a customer premises equipment (CPE) branch office. All incoming calls can be verified against caller IDs configured on the router's dialer interface. <i>See also</i> callback.
<b>dial-on-demand routing (DDR) backup</b>	Feature that provides a device with full-time connectivity across an ISDN line. When routes on a primary serial T1, E1, T3, E3, Fast Ethernet, or PPPoE interface are lost, an ISDN dialer interface establishes a backup connection. To save connection time costs, the Services Router drops the ISDN connection after a configured period of inactivity. Services Routers with ISDN interfaces support two types of dial-on-demand routing backup: on-demand routing with a dialer filter and dialer watch. <i>See also</i> dialer filter, dialer watch.
<b>dial-out route</b>	Route definition that contains the dial-out target, as well as a domain name and profile. The domain name is used in the initial Access Request message. The profile is used to create the IP/Point-to-Point Protocol (PPP) stack for the dial-out session.
<b>dial-out session</b>	Control entity for a triggered IP flow that is used to manage the establishment of an associated L2TP session for dial-out.
<b>dial-out target</b>	Virtual router context and an IP address prefix, for which the arrival of an IP packet (a dial-out trigger) initiates a dial-out session.
<b>dial-out trigger</b>	IP packet that initiates a dial-out session.
<b>dialed number identification service</b>	DNIS. If users have a called number associated with them, the router searches the domain map for the called number. If it finds a match, the router uses the matching domain map entry information to authenticate the user. If the router does not find a match, it searches the domain map using normal processing.

<b>dialer filter</b>	Stateless firewall filter that enables dial-on-demand routing backup when applied to a physical ISDN interface and its dialer interface is configured as a passive static route. The passive static route has a lower priority than dynamic routes. If all dynamic routes to an address are lost from the routing table and the router receives a packet for that address, the dialer interface initiates an ISDN backup connection and sends the packet over it. <i>See also</i> dial-on-demand routing (DDR) backup, floating static route.
<b>dialer interface</b>	Logical interface for configuring dialing properties and the control interface for a backup ISDN connection.
<b>dialer pool</b>	One or more physical interfaces that are associated with a dialer profile.
<b>dialer profile</b>	Set of characteristics configured for the ISDN dialer interface. Dialer profiles allow the configuration of physical interfaces to be separated from the logical configuration of dialer interfaces required for ISDN connectivity. This feature also allows physical and logical interfaces to be bound together dynamically on a per-connection basis.
<b>dialer watch</b>	Dial-on-demand routing (DDR) backup feature that provides reliable connectivity without relying on a dialer filter to activate the ISDN interface. The ISDN dialer interface monitors the existence of each route on a watch list. If all routes on the watch list are lost from the routing table, dialer watch initiates the ISDN interface for failover connectivity. <i>See also</i> dial-on-demand routing (DDR) backup.
<b>DID</b>	direct inward dialing. Feature of a trunk line that allows incoming calls to be routed directly to selected stations without help from an attendant.
<b>Differentiated Services</b>	DiffServ. An architecture based on RFC 2474, <i>Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers</i> , that provides assured forwarding and expedited forwarding by classifying packets into one of a small number of aggregated flows or traffic classes for which you can configure different QoS characteristics. The Juniper Networks QoS architecture extends DiffServ to support edge features such as high-density queuing. DiffServ uses the type-of-service (ToS) byte to identify different packet flows on a packet-by-packet basis. DiffServ adds a Class Selector code point (CSCP) and a Differentiated Services code point (DSCP).
<b>Differentiated Services aware</b>	DiffServ-aware. Paradigm that gives different treatment to traffic based on the experimental (EXP) bits in the MPLS label header and allows you to provide multiple classes of service.
<b>Differentiated Services code point</b>	DSCP, DiffServ code point. Values for a 6-bit field defined for IPv4 and IPv6 packet headers that can be used to enforce class-of-service (CoS) distinctions in routers.
<b>Differentiated Services domain</b>	Routers in a network that have Differentiated Services enabled.
<b>Differentiated Services-aware traffic engineering</b>	Type of constraint-based routing that can enforce different bandwidth constraints for different classes of traffic. It can also do call admission control (CAC) on each traffic engineering class when a label-switched path (LSP) is established.



<b>Diffie-Hellman key exchange</b>	Feature of SSH that provides server authentication by protecting against hackers who interject mimics to obtain your password, so that you can be confident that you are connected to your own router. A method of key exchange whereby an algorithm negotiates a session key without sending the key itself across the network, by allowing each party to pick a partial key independently and send part of it to each other. Each side then calculates a common key value. This is a symmetrical method, and keys are typically used only for a short time, then discarded and regenerated.
<b>DiffServ</b>	Differentiated Services. An architecture based on RFC 2474, <i>Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers</i> , that provides assured forwarding and expedited forwarding by classifying packets into one of a small number of aggregated flows or traffic classes for which you can configure different QoS characteristics. The Juniper Networks QoS architecture extends DiffServ to support edge features such as high-density queuing. DiffServ uses the type-of-service (ToS) byte to identify different packet flows on a packet-by-packet basis. DiffServ adds a Class Selector code point (CSCP) and a Differentiated Services code point (DSCP).
<b>DiffServ-aware</b>	Differentiated Services-aware. Paradigm that gives different treatment to traffic based on the experimental (EXP) bits in the MPLS label header and allows you to provide multiple classes of service.
<b>digital certificate</b>	Electronic file based on private and public key technology that verifies the identity of the certificate's holder to protect data exchanged online. Digital certificates are issued by a certificate authority (CA).
<b>digital signal</b>	DS. Discontinuous signal used in direct sequence spread spectrum modulation, also known as direct sequence code division multiple access (DS-CDMA). DS-CDMA is one of two approaches to spread spectrum modulation for digital signal transmission over the airwaves. In direct sequence spread spectrum, the stream of information to be transmitted is divided into small pieces, each of which is allocated across to a frequency channel across the spectrum.
<b>digital signal level 0</b>	DS0. In T-carrier systems, a basic digital signaling rate of 64 Kbps. The DS0 rate forms the basis for the North American digital multiplex transmission hierarchy.
<b>digital signal level 1</b>	DS1. In T-carrier systems, a digital signaling rate of 1.544 Mbps. A standard used in telecommunications to transmit voice and data between devices. <i>See also</i> T1.
<b>digital signal level 3</b>	DS3. In T-carrier systems, a digital signaling rate of 44.736 Mbps. This level of carrier can transport 28 DS1 level signals and 672 DS0 level channels within its payload. <i>See also</i> T3.
<b>Digital Signature Algorithm</b>	DSA. Cryptographic standard used for authenticating electronic documents, much as a written signature verifies the authenticity of a paper document.
<b>digital subscriber line</b>	DSL. Technology that increases the digital capacity of standard telephone lines into the home or office and provides always-on Internet operation. <i>See also</i> ADSL, SDSL.

<b>digital subscriber line access multiplexer</b>	DSLAM. Network device directly connected to subscriber premises that handles the copper termination and aggregates traffic into a higher-speed uplink. The output from a DSLAM is fed into the router through a DS3 or OC3 link.
<b>Dijkstra algorithm</b>	Algorithm used by IS-IS and OSPF to make routing decisions based on the state of network links. <i>Also known as</i> shortest path first (SPF).
<b>DIMM</b>	dual inline memory module. A 168-pin memory module that supports 64-bit data transfer.
<b>DIOD</b>	direct inward and outward dialing. Feature of a trunk line that allows both incoming and outgoing calls to be routed directly without help from an attendant. <i>See also</i> DID, DOD.
<b>direct inward and outward dialing</b>	DIOD. Feature of a trunk line that allows both incoming and outgoing calls to be routed directly without help from an attendant. <i>See also</i> DID, DOD.
<b>direct inward dialing</b>	DID. Feature of a trunk line that allows incoming calls to be routed directly to selected stations without help from an attendant.
<b>direct outward dialing</b>	DOD. Feature of a trunk line that allows outgoing calls to be routed directly to selected stations without help from an attendant.
<b>direct routes</b>	Routes that are in the routing table because an interface has been configured with an IP address. <i>Also known as</i> interface routes.
<b>direct server access</b>	First authentication or accounting server that you configure in RADIUS. This server is treated as the primary authentication or accounting server, the next server configured is the secondary, and so on. <i>See also</i> round-robin server access.
<b>direct server return</b>	DSR. In Juniper Networks Media Flow Controller, a method of handling TCP traffic using a proxy.
<b>directive</b>	In NSM, a command sent to managed devices. Directives include importing, updating, rebooting, and so on. When a command is sent to a device or group of devices, NSM creates a job for that command and displays information about that job in the NSM Job Manager.
<b>DIS</b>	designated intermediate system. An IS-IS router that is elected by priority on an interface basis. In the case of a tie, the router with the highest MAC address becomes the DIS. DIS is analogous to the designated router in OSPF, although the election process and adjacencies within multiaccess media differ significantly. DIS assists broadcast routers to synchronize their IS-IS databases.
<b>disable</b>	Method of modifying the router's active configuration. When portions of the hierarchy are marked as disabled (mainly router interfaces), the router uses the configuration but ignores the disabled portions.
<b>disabled node</b>	A node in a pool that is not used—it is not monitored, and no traffic is sent to it. Disabling a node is an alternative to removing the node from the pool, but disabling it allows it to be reinstated more easily.

<b>discard</b>	Junos OS syntax command used in a routing policy or a firewall filter. The command halts the logical processing of the policy or filter when a set of match conditions is met. The specific route or IP packet is dropped from the network silently. It can also be a next-hop attribute assigned to a route in the routing table.
<b>discard-eligible bit</b>	DE. In a Frame Relay network, a header bit that notifies devices on the network that traffic can be dropped during congestion to ensure the delivery of higher priority traffic (those without the DE bit set).
<b>discrete multitone</b>	DMT. Modulation method used by VDSL2 for separating a digital subscriber line signal so that the usable frequency range is divided into 256 frequency bands (or channels) of 4.3125 KHz each.
<b>disk-on-key</b>	Memory device (stick) that plugs into a USB port to load a complete Junos OS configuration with VoIP onto a Services Router. You must first use an Electronic Preinstallation Worksheet (EPW) to download the configuration to the disk-on-key device. The EPW and disk-on-key device provide an alternative method to configure the router for VoIP.
<b>Distance Vector Multicast Routing Protocol</b>	DVMRP. Dynamically generates IP multicast delivery trees using a technique called reverse-path multicasting (RPM) to forward multicast traffic to downstream interfaces. An interior gateway protocol (IGP) that supports operations within an autonomous system (AS), but not between ASs. The multicast backbone of the Internet uses DVMRP to forward multicast datagrams. DVMRP is a dense-mode multicasting protocol and therefore uses a broadcast-and-prune mechanism. <i>See also</i> dense mode.
<b>distance-vector</b>	Method used in Bellman-Ford routing protocols to determine the best path to all routers in the network. Each router determines the distance (metric) to the destination and the vector (next hop) to follow.
<b>distance-vector routing</b>	One of two major dynamic routing classes, requires each router to inform its neighbors of its routing table. For each network path, the receiving router picks the neighbor advertising the lowest metric, then adds this entry into its routing table for readvertisement. This method has less computational complexity and less message overhead than the other major class (link-state routing).
<b>Distributed Computing Environment</b>	DCE. An industry-standard software technology for setting up and managing computing and data exchange in a system of distributed computers. DCE is typically used in a large client/server network of computing systems that include servers of different sizes, scattered geographically. With DCE, application users can share applications and data at remote servers. Application programmers don't need to be aware of where their programs will run or where the data will be located.
<b>distributed denial-of-service attack</b>	DDoS. Attack, typically a flood, from multiple source points. A DDoS attack can be more effective in disrupting services than a DoS, because the flood of incoming attacks are coming from multiple sources.
<b>distributed port scan</b>	Denial-of-service attack that uses multiple source addresses to scan ports on a network.
<b>distribution list</b>	List that controls routing information that is accepted or transmitted to peer routers. Distribution lists always use access lists to identify routes for distribution. For example, distribution lists can use access lists to specify routes to advertise. <i>See also</i> access lists.

<b>DLCI</b>	data-link connection identifier. 10-bit channel number attached to data frames to inform a Frame Relay network how to route the data in a Frame Relay virtual connection (a logical interface).
<b>DLSw</b>	data link switching. Method of tunneling IBM System Network Architecture (SNA) and NetBIOS traffic over an IP network, used because Junos OS does not support NetBIOS. <i>See also</i> tunneling protocol.
<b>DLSw circuit</b>	Path formed by establishing data link control (DLC) connections between an end system and a local router configured for DLSw. Each DLSw circuit is identified by the circuit ID that includes the end system method authenticity code (MAC) address, local service access point (LSAP), and DLC port ID. Multiple DLSw circuits can operate over the same DLSw connection.
<b>DLSw connection</b>	Set of TCP connections between two DLSw peers that is established after the initial handshake and successful capabilities exchange.
<b>DM</b>	<ul style="list-style-type: none"> <li>• data model. In NSM, an XML file that contains configuration data for an individual device and is stored in the NSM Device Server. When you create, update, or import a device, the GUI Server edits the Abstract Data Model (ADM) to reflect the changes, then translates that information to the DM.</li> <li>• Diagnostic Mode. Qualcomm protocol specification and mechanism used to collect debug logs from Sierra 3G wireless modem firmware.</li> </ul>
<b>DMI</b>	Device Management Interface. In NSM, a common, secure management interface used by all device families. DMI is based on a common protocol and device-specific schemas for configuration, inventory management, logging, and status monitoring. DMI schemas can be updated without the need to upgrade NSM.
<b>DMT</b>	discrete multitone. Modulation method used by VDSL2 for separating a digital subscriber line signal so that the usable frequency range is divided into 256 frequency bands (or channels) of 4.3125 KHz each.
<b>DMZ</b>	demilitarized zone. Physical or logical subnet used as an additional layer of security between an organization's network and an untrusted network (often the Internet); a neutral zone used to secure a network from external access. An attacker only has access to equipment in the DMZ.
<b>DNIS</b>	dialed number identification service. If users have a called number associated with them, the router searches the domain map for the called number. If it finds a match, the router uses the matching domain map entry information to authenticate the user. If the router does not find a match, it searches the domain map using normal processing.
<b>DNS</b>	Domain Name System. A system that stores information about hostnames and domain names. It provides an IP address for each hostname and lists the e-mail exchange servers accepting e-mail addresses for each domain.

<b>DNS doctoring</b>	Repair process performed by the Domain Name System (DNS) Application Layer Gateway (ALG) to address issues related to Network Address Translation (NAT). DNS provides name-to-address mapping within a routing class, whereas NAT attempts to provide transparent routing between hosts in disparate address realms of the same routing class. As a result, NAT can cause some DNS issues that the DNS ALG must handle through the DNS doctoring process. The process translates a public address (the routable or mapped address) in a DNS reply to a private address (the real address) when the DNS client is on a private interface and translates a private address to a public address when the DNS client is on the public interface. DNS doctoring also involves parsing DNS packets and performing sanity checks. <i>See also</i> DNS, NAT.
<b>DNS-ALG</b>	Domain Name System-Application Level Gateway. Facilitates name-to-address mapping over bidirectional NAT or twice NAT.
<b>do not fragment (bit)</b>	DF. One-bit flag in the IP datagram header that specifies if a datagram should be fragmented. A value of zero (0) indicates to fragment the datagram; a value of one (1) indicates not to fragment the datagram.
<b>Docker</b>	Software container platform that is used to package and run applications as lightweight, portable containers.
<b>document type definition</b>	DTD. Defines the elements and structure of an Extensible Markup Language (XML) document or data set.
<b>DOD</b>	direct outward dialing. Feature of a trunk line that allows outgoing calls to be routed directly to selected stations without help from an attendant.
<b>domain</b>	<ul style="list-style-type: none"> <li>• Logical grouping of devices, policies, and access privileges that can also contain templates, objects, VPNs, administrators, activities, authentication servers, and groups—a representation of all or a subset of the physical devices and functionality on a network. The domain at a level above a domain is the parent domain, and the domain at a level below a domain is the child domain. Domains at the same level are considered peer domains. Also refers to a collection of routers that use a common interior gateway protocol (IGP).</li> <li>• Name in a network address that identifies the type of entity owning the address (for example, .com for commercial users or .edu for educational institutions) or the geographical location of the address (for example, .fr for France or .sg for Singapore). The domain is the last element of the address (for example, www.acm.org).</li> </ul>
<b>Domain Menu</b>	In NMS, the pull-down menu above the navigation tree where domains and subdomains are selected.
<b>Domain Name System</b>	DNS. A system that stores information about hostnames and domain names. It provides an IP address for each hostname and lists the e-mail exchange servers accepting e-mail addresses for each domain.
<b>Domain Name System-Application Level Gateway</b>	DNS-ALG. Facilitates name-to-address mapping over bidirectional NAT or twice NAT.

<b>domain-specific part</b>	DSP. Section of the Network Service Access Point (NSAP) address that uniquely identifies a system on the network.
<b>DoS</b>	denial of service. System security breach in which network services become unavailable to users.
<b>DoS attack</b>	denial-of-service attack. Any attempt to deny valid users access to network or server resources by using up all the resources of the network element or server. Typically, an attacker sends a flood of information to overwhelm a service system's resources, causing the server to ignore valid service requests.
<b>downstream on demand</b>	Method of label distribution whereby MPLS devices do not signal a FEC-to-label binding until requested to do so by an upstream device. Downstream on demand conserves labels by not binding until needed, and the label-switching router (LSR) receives label bindings (also known as label mappings) from a neighbor that is the next hop to a destination. It is used when RSVP is the signaling protocol. <i>See also</i> downstream unsolicited, independent control, ordered control.
<b>downstream unsolicited</b>	Label distribution method whereby MPLS devices do not wait for a request from an upstream device before signaling FEC-to-label bindings. As soon as the LSR learns a route, it sends a binding for that route to all peer LSRs, both upstream and downstream. Downstream unsolicited does not conserve labels, because an LSR receives label mappings from neighbors that might not be the next hop for the destination; it is used by BGP or LDP when adjacent peers are configured to use the platform label space. <i>See also</i> downstream on demand, independent control, ordered control.
<b>DPC</b>	Dense Port Concentrator. Network interface-specific card that can be installed in the router.
<b>DPD</b>	dead peer detection. Method that recognizes the loss of the primary IPsec Internet Key Exchange (IKE) peer and establishes a secondary IPsec tunnel to a backup peer. It is a keepalive mechanism that enables the E Series router to detect when communication to a remote IPsec peer has been disconnected. DPD enables the router to reclaim resources and to optionally redirect traffic to an alternate failover destination. If DPD is not enabled, traffic continues to be sent to the unavailable destination. <i>Also known as</i> IKE keepalive.
<b>DPDK</b>	Data Plane Development Kit. Set of libraries and drivers used in the development of applications that perform fast processing of packets on industry-standard processors, such as x86 processors.
<b>DR</b>	designated router. <ul style="list-style-type: none"> <li>• Router on a subnet that is selected to control multicast routes for the sources and receivers on the subnet. If several routers are present, the selected DR is the router with the highest priority. If the DR priorities match, the router with the highest IP address is selected as the DR. The source's DR sends PIM register messages from the source network to the rendezvous point (RP). The receiver's DR sends PIM join and PIM prune messages from the receiver network toward the RP.</li> <li>• In OSPF, a router, selected by other routers, that is responsible for sending link-state advertisements (LSAs) that describe the network, thereby reducing the amount of network traffic and the size of the topology databases maintained on the other routers.</li> </ul>

<b>draining node</b>	A node in a pool that is being sent no new connections. When all existing connections and sessions to this node have expired, it can safely be removed from the pool.
<b>drop probability</b>	Percentage value that expresses the likelihood that an individual packet will be dropped from the network. <i>See also</i> drop profile.
<b>drop profile</b>	Template that defines parameters that allow packets to be dropped from the network, controlling the dropping behavior of a set of egress queues. The profile defines the range within the queue where random early detection (RED) operates, the maximum percentage of packets to drop, and the sensitivity to bursts of packets. Weighted random early detection (WRED) is an extension to RED that enables an administrator to assign different RED drop profiles to each color of traffic. When you configure drop profiles, there are two important values: the queue fullness and the drop probability. <i>See also</i> drop probability, queue fullness, RED.
<b>DS</b>	<ul style="list-style-type: none"> <li>• Differentiated Services (field). The IPv4 header ToS octet or the IPv6 Traffic Class octet used to mark packets to enable differentiated services. <i>See also</i> DiffServ.</li> <li>• digital signal. Discontinuous signal used in direct sequence spread spectrum modulation, also known as direct sequence code division multiple access (DS-CDMA). DS-CDMA is one of two approaches to spread spectrum modulation for digital signal transmission over the airwaves. In direct sequence spread spectrum, the stream of information to be transmitted is divided into small pieces, each of which is allocated across to a frequency channel across the spectrum.</li> </ul>
<b>DS-BGP</b>	dual-stack Border Gateway Protocol. Router that runs both the IPv4 and the IPv6 protocol stack. DS-BGP routers are typically used to connect IPv6 islands across IPv4 clouds.
<b>DS0</b>	digital signal level 0. In T-carrier systems, a basic digital signaling rate of 64 Kbps. The DS0 rate forms the basis for the North American digital multiplex transmission hierarchy.
<b>DS1</b>	digital signal level 1. In T-carrier systems, a digital signaling rate of 1.544 Mbps. A standard used in telecommunications to transmit voice and data between devices. <i>See also</i> T1.
<b>DS3</b>	digital signal level 3. In T-carrier systems, a digital signaling rate of 44.736 Mbps. This level of carrier can transport 28 DS1 level signals and 672 DS0 level channels within its payload. <i>See also</i> T3.
<b>DSA</b>	Digital Signature Algorithm. Cryptographic standard used for authenticating electronic documents, much as a written signature verifies the authenticity of a paper document.
<b>DSAP</b>	destination service access point. Identifies the destination for which a logical link control protocol data unit (LPDU) is intended.
<b>DSCP</b>	Differentiated Services code point, DiffServ code point. Values for a 6-bit field defined for IPv4 and IPv6 packet headers that can be used to enforce class-of-service (CoS) distinctions in routers.

<b>DSI</b>	dynamic subscriber interface. Associated with a primary IP interface and dynamically created in response to an external event, such as packet detection or a DHCP event.
<b>DSL</b>	digital subscriber line. Technology that increases the digital capacity of standard telephone lines into the home or office and provides always-on Internet operation. <i>See also</i> ADSL, SDSL.
<b>DSLAM</b>	digital subscriber line access multiplexer. Network device directly connected to subscriber premises that handles the copper termination and aggregates traffic into a higher-speed uplink. The output from DSLAMs is fed into the router through a DS3 or OC3 link.
<b>DSP</b>	domain-specific part. Section of the Network Service Access Point (NSAP) address that uniquely identifies a system on the network.
<b>DSR</b>	<ul style="list-style-type: none"> <li>• data set ready. One of the control signals on a standard RS-232C connector that indicates whether the DCE is connected and ready to start.</li> <li>• direct server return. In Juniper Networks Media Flow Controller, a method of handling TCP traffic using a proxy.</li> </ul>
<b>DSU</b>	data service unit. Device used to connect a DTE to a digital phone line. DSU converts digital data from a router to voltages and encoding required by the phone line. <i>See also</i> CSU/DSU.
<b>DTCP</b>	Dynamic Tasking Control Protocol. Means of communicating filter requests and acknowledgments between one or more clients and a monitoring platform, used in dynamic flow capture (DFC) and flow-tap configurations. The protocol is defined in Internet draft draft-cavuto-dtcp-00.txt, <i>DTCP, Dynamic Tasking Control Protocol</i> .
<b>DTD</b>	document type definition. Defines the elements and structure of an Extensible Markup Language (XML) document or data set.
<b>DTE</b>	data terminal equipment. RS-232-C interface that a computer uses to exchange information with a serial device, such as a computer, host, or terminal, that communicates with DCE. At the terminal end of a data transmission, DTE comprises the transmit and receive equipment. <i>See also</i> DCE.
<b>DTR signal</b>	data terminal ready signal. Sent over a dedicated wire (RS-232 connection) from a computer (or terminal) to a transmission device to indicate that the computer is ready to receive data.
<b>dual inline memory module</b>	DIMM. A 168-pin memory module that supports 64-bit data transfer.
<b>dual touchpoint-based GNF management</b>	Method of managing guest network function (GNF) life cycle by using two touchpoints. In this method, a software-defined networking (SDN) controller (for example, OpenDaylight or ODL) sends RPCs to, and receive responses from, Juniper Device Manager (JDM) and the base system (BSYS) separately.
<b>dual-core processor</b>	Two process execution systems located on the same physical processor. The dual-core processor architecture enables faster computing speed and greater data throughput.



<b>dual-stack Border Gateway Protocol</b>	DS-BGP. Router that runs both the IPv4 and the IPv6 protocol stack. DS-BGP routers are typically used to connect IPv6 islands across IPv4 clouds.
<b>duplex mode</b>	Transmission and reception of signals in both directions. <i>See also</i> full-duplex mode, half-duplex mode.
<b>duplicate accounting server</b>	In RADIUS, a server that sends the accounting information to a particular router. You might use duplicate accounting to send the accounting information to a customer's accounting server. <i>See also</i> broadcast accounting server.
<b>DVMRP</b>	Distance Vector Multicast Routing Protocol. Dynamically generates IP multicast delivery trees using a technique called reverse-path multicasting (RPM) to forward multicast traffic to downstream interfaces. An interior gateway protocol (IGP) that supports operations within an autonomous system (AS), but not between ASs. The multicast backbone of the Internet uses DVMRP to forward multicast datagrams. DVMRP is a dense-mode multicasting protocol and therefore uses a broadcast-and-prune mechanism. <i>See also</i> dense mode.
<b>DVMRP tunnels</b>	Allow the exchange of IP multicast traffic between routers separated by networks that do not support multicast routing.
<b>DWDM</b>	dense wavelength division multiplexing. Technology that enables data from different sources to be carried together on an optical fiber, with each signal carried on its own separate wavelength.
<b>DXI</b>	data exchange interface. Specification developed by the switched megabit data services (SMDS) interest group to define the interaction between internetworking devices and CSUs/DSUs that are transmitting over an SMDS access line.
<b>dynamic CAC</b>	Dynamic call admission control application that blocks calls on a WAN interface when the bandwidth is exhausted. <i>See also</i> CAC.
<b>dynamic encapsulation lockout</b>	Mechanism that temporarily prevents an ATM 1483 subinterface from autodetecting, accepting, and creating dynamic interface columns for a configurable time period.
<b>dynamic feed</b>	Data set that contains all of the potential dynamic creative assets (such as headlines, logos, and images) to tailor content to the viewer on every single impression. Dynamic feeds enable you to update content easily and quickly, without having to update the creative assets.
<b>dynamic flow capture</b>	DFC. Process of collecting packet flows that match a particular filter list to one or more content destinations using an on-demand control protocol that relays requests from one or more control sources.
<b>Dynamic Host Configuration Protocol</b>	DHCP. Mechanism through which hosts using TCP/IP can obtain protocol configuration parameters automatically from a DHCP server on the network; allocates IP addresses dynamically so that they can be reused when no longer needed.

<b>dynamic interface</b>	Type of interface created through an external event, typically through the receipt of data over a lower-layer link, such as an ATM virtual circuit. The layers of a dynamic interface are created based on the packets received on the link and can be configured through RADIUS authentication, profiles, or a combination of RADIUS authentication and profiles. <i>See also</i> static interface.
<b>dynamic label-switched path (LSP)</b>	MPLS network path established by signaling protocols such as RSVP and LDP.
<b>dynamic oversubscription</b>	Mechanism that enables the router to vary queue thresholds based on the amount of egress buffer memory in use. <i>See also</i> bandwidth oversubscription, static oversubscription.
<b>dynamic routing</b>	Method that adjusts to changing network circumstances by analyzing incoming routing update messages. If a message indicates that a network change has occurred, the routing software recalculates routes and sends out new routing update messages, using different routes, based on current conditions of communications circuits. There are two common forms of dynamic routing: distance vector routing and link state routing.
<b>dynamic subscriber interface</b>	DSI. Associated with a primary IP interface and dynamically created in response to an external event, such as packet detection or a DHCP event.
<b>Dynamic Tasking Control Protocol</b>	DTCP. Means of communicating filter requests and acknowledgments between one or more clients and a monitoring platform, used in dynamic flow capture (DFC) and flow-tap configurations. The protocol is defined in Internet draft draft-cavuto-dtcp-00.txt, <i>DTCP: Dynamic Tasking Control Protocol</i> .
<b>dynamic translation</b>	One of two NAT methods used to assign a translated IP address. This method uses access list rules and NAT address pools. Use it when you want the NAT router to initiate and manage address translation and session flows between address realms on demand.
<b>dynamic tunnel-server ports</b>	Module that supports dynamic tunnel-server ports. It provides both tunnel services and regular access services. <i>Also known as</i> shared tunnel-server module.
<b>dynamic VPN</b>	Type of virtual private network (VPN) that allows administrators to provide IPsec access to a gateway on a branch SRX Series device while also providing a way to distribute VPN software to remote clients through a secure Web portal. <i>Also known as</i> remote access VPN and IPsec VPN client.

## E

<b>E-carrier</b>	European carrier. Standards that form part of the Synchronous Digital Hierarchy (SDH), in which groups of E1 circuits are bundled onto higher-capacity E3 links between telephone exchanges or countries. E-carrier standards are used just about everywhere in the world except North America and Japan, and are incompatible with the T-carrier standards.
<b>E-LSP</b>	EXP-inferred PSC-LSP. One of two types of LSPs used by MPLS to support differentiated services. The EXP field of the MPLS shim header is used to determine the per-hop behavior applied to the packet. <i>See also</i> L-LSP, shim header.

<b>E-UTRAN</b>	Evolved Universal Terrestrial Radio Access Network. Radio access network standard. E-UTRAN is a new air interface system. It provides higher data rates and lower latency and is optimized for packet data. It uses orthogonal frequency-division multiple access (OFDMA) for the downlink and single-carrier frequency-division multiple access (SC-FMDA) for the uplink.
<b>E1</b>	High-speed WAN digital communication protocol that operates at a rate of 2.048 Mbps.
<b>E3</b>	High-speed WAN digital communication protocol that operates at a rate of 34.368 Mbps and uses time-division multiplexing to carry 16 E1 circuits.
<b>EAL3</b>	Common Criteria Evaluation Assurance Level 3. Compliance requirement defined by Common Criteria. Higher levels have more stringent requirements. <i>See also</i> Common Criteria.
<b>EAP</b>	Extensible Authentication Protocol. Industry standard for network access that acts as a transport for multiple authentication methods or types. Defined by RFC 2284, <i>PPP Extensible Authentication Protocol (EAP)</i> .
<b>early packet discard</b>	EPD. For ATM2 interfaces only, a limit on the number of transmit packets that can be queued. Packets that exceed the limit are dropped. <i>See also</i> queue length.
<b>EBGP</b>	External Border Gateway Protocol, external BGP. Configuration in which sessions are established between routers in different autonomous systems (ASs).
<b>EBGP session</b>	External Border Gateway Protocol session. Session between two BGP speakers that are in different autonomous systems. EBGP sessions typically exist between peers that are physically connected. <i>See also</i> IBGP session.
<b>ECC</b>	error checking and correction, error-checking code. Process of detecting errors during the transmission or storage of digital data and correcting them automatically. This usually involves sending or storing extra bits of data according to specified algorithms.
<b>ECMP</b>	equal-cost multipath. Traffic load-balancing feature that enables traffic to the same destination to be distributed over multiple paths that have the same cost.
<b>ECP</b>	Encryption Control Protocol. Responsible for configuring and enabling data encryption algorithms on both ends of a PPP link.
<b>ECSA</b>	Exchange Carriers Standards Association. Organization created after the divestiture of the Bell System to represent the interests of interexchange carriers.

<b>edge cache</b>	Appliance between the Internet and the end user, nearer to the end user, that caches and delivers content such as Java scripts, common channel signaling (CSS), images, and so on. This frees up web servers for other processes. When Media Flow Controller is used as an edge cache, it is effectively a “reverse proxy,” that provides these benefits: reduces the network and CPU load on an origin server by servicing previously retrieved content, and enhances the user experience due to a decrease in latency.
<b>edge router</b>	In MPLS, the router located at the beginning or end of a label-switching tunnel. When at the beginning of a tunnel, it applies labels to new packets entering the tunnel. When at the end of a tunnel, it removes labels from packets exiting the tunnel. <i>See also</i> MPLS.
<b>editor macros</b>	Emacs. Shortcut keystrokes used within the router’s command-line interface (CLI). These macros move the cursor and delete characters based on the sequence you specify.
<b>EEPROM</b>	electrically erasable programmable read-only memory. Chip used to store small amounts of configuration data.
<b>effective weight</b>	Result of a weight or an assured rate. Users configure the scheduler node by specifying either an assured rate or a weight within a scheduler profile. An assured rate, in bits per second, is translated into a weight, referred to as an effective weight.
<b>EGP</b>	exterior gateway protocol. Distributes routing information to routers that connect separate autonomous systems. <i>See also</i> IGP, BGP.
<b>egress</b>	Outbound, referring to packets exiting a device. <i>See also</i> ingress.
<b>egress router</b>	In MPLS, the last router in a label-switched path (LSP). <i>See also</i> ingress router.
<b>EIA</b>	Electronic Industries Association. United States trade group that represents manufacturers of electronic devices and sets standards and specifications.
<b>EIA-530</b>	Serial interface that employs the EIA-530 standard for the interconnection of DTE and DCE equipment.
<b>EIR</b>	equipment identity register. Mobile network database that contains information about devices using the network.
<b>electrically erasable programmable read-only memory</b>	EEPROM. Chip used to store small amounts of configuration data.
<b>electromagnetic interference</b>	EMI. Any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics or electrical equipment.
<b>Electronic Industries Association</b>	EIA. United States trade group that represents manufacturers of electronic devices and sets standards and specifications.

<b>Electronic Preinstallation Worksheet</b>	EPW. Customized Microsoft Excel spreadsheet used with a disk-on-key USB memory stick to configure VoIP on a Services Router. You download the EPW from an Avaya website.
<b>Electronic Serial Number</b>	ESN. Standardized code that uniquely identifies a mobile device. It can be printed on the device and is also digitally assigned to the device's firmware, and can be displayed by using a command such as <b>show modem wireless interface firmware</b> .
<b>electrostatic discharge</b>	ESD. Stored static electricity that can damage electronic equipment and impair electrical circuitry when released.
<b>electrostatic discharge wrist strap</b>	ESD wrist strap. Strap with a metal contact that is tied to the user's wrist in order to channel static electricity to a proper ground when the user handles sensitive computer equipment.
<b>Element Management System</b>	EMS. Web-based or other GUI for managing a specific network device.
<b>Emacs</b>	editor macros. Shortcut keystrokes used within the router's command-line interface (CLI). These macros move the cursor and delete characters based on the sequence you specify.
<b>embedded OS software</b>	Software used by a router to operate the physical router components.
<b>embedded system</b>	Special-purpose computer system designed to perform one or a few dedicated functions, usually embedded as part of a complete device that includes hardware and mechanical parts.
<b>emergency transfer relay</b>	ETR. Feature that provides an emergency link between the telephone connected to the first line port on the TGM550 and the trunk connected to the trunk port on the TGM550 if power is disconnected from the Services Router or if the TGM550 becomes unregistered from its Media Gateway Controller (MGC).
<b>EMI</b>	electromagnetic interference. Any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics or electrical equipment.
<b>EMS</b>	Element Management System. Web-based or other GUI for managing a specific network device.
<b>Encapsulating Security Payload</b>	ESP. Protocol for securing packet flows for IPsec using encryption, data integrity checks, and sender authentication, which are added as a header to an IP packet. If an ESP packet is successfully decrypted, and no other party knows the secret key the peers share, the packet was not wiretapped in transit. See <i>also</i> AH.
<b>encryption</b>	Process of changing data into a form that can be read only by the intended receiver. A software mechanism that makes data confidential by making it unreadable to everyone except the sender and the intended recipient. The receiver of the encrypted message must have the correct decryption key to decipher the message.
<b>Encryption Control Protocol</b>	ECP. Responsible for configuring and enabling data encryption algorithms on both ends of a PPP link.

<b>end system</b>	ES. Any nonrouting network node or host in OSI internetworking. <i>See also</i> intermediate system.
<b>End System-to-Intermediate System</b>	ES-IS. Protocol that resolves Layer 3 ISO network service access points (NSAPs) to Layer 2 addresses. ES-IS resolution is similar to the way ARP resolves Layer 2 addresses for IPv4.
<b>endpoint</b>	The designation for an end user computer that accesses an IC Series device. An endpoint uses client software to access the device.
<b>endpoint discriminator</b>	LCP negotiation option that identifies the system or device transmitting the packet.
<b>Endpoint Security Assessment Plug-in</b>	ESAP. Secure Access (SA) plug-in that checks third-party applications on endpoints for compliance with the predefined rules you configure in a Host Checker policy.
<b>enhanced transmission selection</b>	ETS. Mechanism that provides finer granularity of bandwidth management within a link.
<b>eNodeB</b>	Evolved Node B. Device connected to the mobile phone network that communicates directly with mobile handsets, such as a base transceiver station in Global System for Mobile Communications (GSM) networks. An eNodeB is controlled by a radio network controller (RNC).
<b>enterprise MIB</b>	SNMP term for a MIB defined by a single vendor. In addition to providing consistency of management data representation across that vendor's product line, the enterprise MIB also accounts for proprietary functions and value-added features not addressed by standard MIBs.
<b>EPC</b>	evolved packet core. Main component of System Architecture Evolution (SAE). The EPC supports the IP network and serves as the equivalent of a General Packet Radio Service (GPRS) network by using the mobility management entity (MME), Serving Gateway (SGW), and Packet Data Network Gateway (PGW) subcomponents. <i>Also known as</i> SAE core.
<b>EPD</b>	early packet discard. For ATM2 interfaces only, a limit on the number of transmit packets that can be queued. Packets that exceed the limit are dropped. <i>See also</i> queue length.
<b>EPW</b>	Electronic Preinstallation Worksheet. Customized Microsoft Excel spreadsheet used with a disk-on-key USB memory stick to configure VoIP on a Services Router. You download the EPW from an Avaya website.
<b>equal access mode</b>	Mode in which a DHCP local server works with the Juniper Networks Session and Resource Control (SRC) software to provide an advanced subscriber configuration and management service. In equal access mode, the router enables access to non-PPP users. Non-PPP equal access requires the use of the E Series router DHCP local server and SRC software, which communicates with a RADIUS server. <i>Also known as</i> DHCP equal access mode.
<b>equal-cost multipath</b>	ECMP. Traffic load-balancing feature that enables traffic to the same destination to be distributed over multiple paths that have the same cost.

<b>equipment identity register</b>	EIR. Mobile network database that contains information about devices using the network.
<b>ERO</b>	Explicit Route Object. Extension to RSVP that allows an RSVP PATH message to traverse an explicit sequence of routers that is independent of conventional shortest-path IP routing.
<b>error checking and correction</b>	ECC, error-checking code. Process of detecting errors during the transmission or storage of digital data and correcting them automatically. This usually involves sending or storing extra bits of data according to specified algorithms.
<b>error file</b>	A file sent to the client when no nodes are available to respond to its request. Error files are set up on a per-pool basis.
<b>error-checking code</b>	ECC, error checking and correction. Process of detecting errors during the transmission or storage of digital data and correcting them automatically. This usually involves sending or storing extra bits of data according to specified algorithms.
<b>errored frame</b>	Frame with one or more bits with errors. This frame will be dropped at the next Ethernet node and become a lost frame.
<b>errored second</b>	Period of a second with one or more errored or lost frames.
<b>ES</b>	end system. Any nonrouting network node or host in OSI internetworking. <i>See also</i> intermediate system.
<b>ES-IS</b>	End System-to-Intermediate System. Protocol that resolves Layer 3 ISO network service access points (NSAPs) to Layer 2 addresses. ES-IS resolution is similar to the way ARP resolves Layer 2 addresses for IPv4.
<b>ESAP</b>	Endpoint Security Assessment Plug-in. Secure Access (SA) plug-in that checks third-party applications on endpoints for compliance with the predefined rules you configure in a Host Checker policy.
<b>ESD</b>	electrostatic discharge. Stored static electricity that can damage electronic equipment and impair electrical circuitry when released.
<b>ESD wrist strap</b>	electrostatic discharge wrist strap. Strap with a metal contact that is tied to the user's wrist in order to channel static electricity to a proper ground when the user handles sensitive computer equipment.
<b>ESN</b>	Electronic Serial Number. Standardized code that uniquely identifies a mobile device. It can be printed on the device and is also digitally assigned to the device's firmware, and can be displayed by using a command such as <b>show modem wireless interface firmware</b> .
<b>ESP</b>	Encapsulating Security Payload. Protocol for securing packet flows for IPsec using encryption, data integrity checks, and sender authentication, which are added as a header to an IP packet. If an ESP packet is successfully decrypted, and no other party knows the secret key the peers share, the packet was not wiretapped in transit. <i>See also</i> AH.

<b>ESSID</b>	extended service set identifier. Identifier of a service set that consists of all the building-block service sets (known as <i>basic</i> service sets) in a given network. <i>See also</i> SSID and BSSID.
<b>established</b>	BGP neighbor state that represents a fully functional BGP peering session.
<b>ESX, VMWare ESXi</b>	Enterprise-level software hypervisors from VMware that do not need an additional operating system to run on host server hardware.
<b>Ethernet</b>	Local area network (LAN) technology used for transporting information from one location to another, formalized in the IEEE standard 802.3. Ethernet uses either coaxial cable or twisted-pair cable. Transmission speeds for data transfer range from the original 10 Mbps (10BaseT), to Fast Ethernet at 100 Mbps, to Gigabit Ethernet at 1000 Mbps.
<b>Ethernet link aggregation</b>	Process that enables grouping of Ethernet interfaces at the Physical Layer to form a single Link Layer interface. <i>Also known as</i> 802.3ad link aggregation, link aggregation group (LAG), LAG bundle.
<b>Ethernet PAUSE</b>	As defined in IEEE 802.3X, a flow control mechanism that temporarily stops the transmission of Ethernet frames on a link for a specified period. A receiving element sends an Ethernet PAUSE frame when a sender transmits data faster than the receiver can accept it. Ethernet PAUSE affects the entire link, not just an individual flow. An Ethernet PAUSE frame temporarily stops all traffic transmission on the link.
<b>Ethernet VPN</b>	EVPN. Type of VPN that enables you to connect a group of dispersed customer sites by using a Layer 2 virtual bridge. As with other types of VPNs, an EVPN comprises customer edge (CE) devices (routers or switches) connected to provider edge (PE) devices. The PE devices can include an MPLS edge switch that acts at the edge of the MPLS infrastructure.
<b>ETR</b>	emergency transfer relay. Feature that provides an emergency link between the telephone connected to the first line port on the TGM550 and the trunk connected to the trunk port on the TGM550 if power is disconnected from the Services Router or if the TGM550 becomes unregistered from its Media Gateway Controller (MGC).
<b>ETS</b>	enhanced transmission selection. Mechanism that provides finer granularity of bandwidth management within a link.
<b>ETSI</b>	European Telecommunications Standardization Institute. Nonprofit organization that produces voluntary telecommunications standards used throughout Europe.
<b>European carrier</b>	E-carrier. Standards that form part of the Synchronous Digital Hierarchy (SDH), in which groups of E1 circuits are bundled onto higher-capacity E3 links between telephone exchanges or countries. E-carrier standards are used just about everywhere in the world except North America and Japan, and are incompatible with the T-carrier standards.



<b>European Telecommunications Standardization Institute</b>	ETSI. Nonprofit organization that produces voluntary telecommunications standards used throughout Europe.
<b>EV-DO</b>	Evolution Data Optimized. Telecommunications standard for transmitting data through radio signals.
<b>event</b>	In Junos App Balancer, an event is raised when a particular change or occurrence takes place, such as an IP address transfer or a node failure or recovery. All events are logged to the global event log.
<b>event categories</b>	Classification groups and severity levels for system events that can be used to track system changes. Severity levels (categories) include: Emergency, Alert, Critical, Error, Warning, Notice, Info, and Debug.
<b>event handler</b>	An event handler configures the actions that the Junos App Balancer should take when an event in the associated event type occurs.
<b>event ID</b>	event identifier. System log message code that uniquely identifies a system log message. The code begins with a prefix indicating the software process or library that generated the event.
<b>event log</b>	The Junos App Balancer's log of events within the Junos App Balancer. These are graded as INFO, WARN, SERIOUS, FATAL and so on, and can be viewed within the Diagnose pages.
<b>event MIB</b>	Enables you to create trigger conditions, test those conditions, and determine which action to take when a trigger meets those conditions, for object integers accessible in the SNMP agent, making it possible to monitor any aspect of a device without defining specific notifications. <i>See also</i> event table (mteEventTable), objects table (mteObjectsTable), SNMP Server Event Manager, trigger table (mteTriggerTable).
<b>event policy process</b>	eventd. Process that performs configured actions in response to events on a routing platform that trigger system log messages.
<b>event table (mteEventTable)</b>	SNMP term for a table that defines which action you want a device to take when a trigger occurs. This action can be in the form of a notification, setting a specified MIB object, or both. The results of these actions are controlled within two subordinate MIB tables—notification and set. One of the three parts of the Event MIB. <i>See also</i> objects table (mteObjectsTable), trigger table (mteTriggerTable).
<b>event type</b>	A set of events, grouped for administrative convenience. When any event in a particular event type occurs, the Junos App Balancer can run the actions associated with that event type.
<b>eventd</b>	Event policy process that performs configured actions in response to events on a routing platform that trigger system log messages.
<b>events</b>	system events. System changes that can be classified into log event categories and that can be used for tracking purposes.
<b>Evolution-Data Optimized</b>	EV-DO. Telecommunications standard for transmitting data through radio signals.

<b>Evolved Node B</b>	eNodeB. Device connected to the mobile phone network that communicates directly with mobile handsets, such as a base transceiver station in Global System for Mobile Communications (GSM) networks. An eNodeB is controlled by a radio network controller (RNC).
<b>evolved packet core</b>	EPC. Main component of System Architecture Evolution (SAE). The EPC supports the IP network and serves as the equivalent of a General Packet Radio Service (GPRS) network by using the mobility management entity (MME), Serving Gateway (SGW), and Packet Data Network Gateway (PGW) subcomponents. <i>Also known as</i> SAE core.
<b>Evolved Universal Terrestrial Radio Access Network</b>	E-UTRAN. Radio access network standard. E-UTRAN is a new air interface system. It provides higher data rates and lower latency and is optimized for packet data. It uses orthogonal frequency-division multiple access (OFDMA) for the downlink and single-carrier frequency-division multiple access (SC-FDMA) for the uplink.
<b>EVPN</b>	Ethernet VPN. Type of VPN that enables you to connect a group of dispersed customer sites by using a Layer 2 virtual bridge. As with other types of VPNs, an EVPN comprises customer edge (CE) devices (routers or switches) connected to provider edge (PE) devices. The PE devices can include an MPLS edge switch that acts at the edge of the MPLS infrastructure.
<b>exact</b>	Junos OS routing policy match type that represents only the route specified in a route filter.
<b>exceeded action</b>	In a rate-limit profile, an action that drops, transmits, marks (IP and IPv6), or marks-exp (MPLS) when traffic flow exceeds the rate. The mark value is not supported for hierarchical rate limits, and the transmit values conditional, unconditional, and final are supported only on hierarchical rate limits.
<b>exception packet</b>	IP packet that is not processed by the normal packet flow through the Packet Forwarding Engine. Exception packets include local delivery information, expired TTL packets, and packets with an IP option specified.
<b>exchange</b>	OSPF adjacency state in which two neighboring routers are actively sending database description packets to each other to exchange their database contents.
<b>Exchange Carriers Standards Association</b>	ECSA. Organization created after the divestiture of the Bell System to represent the interests of interexchange carriers.
<b>exclusive or</b>	XOR. Logical operator (exclusive disjunction) in which the operation yields the result of true when one, and only one, of its operands is true.
<b>Exec mode</b>	CLI mode assigned to a user that determines which functions that user can perform when logged in to the system. <i>See also</i> Global Configuration mode, Privileged Exec mode, privileged level, User Exec mode.
<b>EXP bits</b>	Experimental bits, located in each MPLS label and used to encode the CoS value of a packet as it traverses an LSP. <i>Also known as</i> class-of-service (CoS) bits.

<b>EXP-inferred PSC-LSP</b>	E-LSP. One of two types of LSPs used by MPLS to support differentiated services. The EXP field of the MPLS shim header is used to determine the per-hop behavior applied to the packet. <i>See also</i> L-LSP, shim header.
<b>explicit path</b>	In traffic engineering, a specific, defined path determined using RSVP signaling. The Explicit Route Object carried in the packets contains the explicit path information. <i>Also known as</i> signaled path.
<b>Explicit Route Object</b>	ERO. Extension to RSVP that allows an RSVP PATH message to traverse an explicit sequence of routers that is independent of conventional shortest-path IP routing.
<b>explicit routing</b>	Subset of constraint-based routing where the constraint is an explicit route: the route the LSP takes is defined by the ingress node.
<b>explicit shared shaper</b>	Type of shared shaper in which you select the active constituents in a scheduler profile. A subset of the interface traffic is shaped to the shared rate. <i>See also</i> implicit shared shaper, shared shaping.
<b>export</b>	Placing of routes from the routing table into a routing protocol.
<b>export map</b>	Route map applied to a VRF to modify or filter routes exported from the VRF to the global BGP VPN routing information base (RIB) in the parent virtual router (VR). <i>See also</i> import map.
<b>export rules</b>	When you have two or more virtual routers on a security device, you can configure export rules that define which routes on one virtual router are allowed to be learned by another virtual router. <i>See also</i> import rules.
<b>ExStart</b>	OSPF adjacency state in which the neighboring routers negotiate to determine which router is in charge of the synchronization process.
<b>extended ports</b>	In a Junos fusion, the network-facing ports on satellite devices. <i>See also</i> cascade port, Junos fusion, satellite device.
<b>extended service set identifier</b>	ESSID. Identifier of a service set that consists of all the building-block service sets (known as <i>basic</i> service sets) in a given network. <i>See also</i> SSID and BSSID.
<b>Extensible Authentication Protocol</b>	EAP. Industry standard for network access that acts as a transport for multiple authentication methods or types. Defined by RFC 2284, <i>PPP Extensible Authentication Protocol (EAP)</i> .
<b>Extensible Markup Language</b>	XML. Used for defining a set of markers, called tags, that define the function and hierarchical relationships of the parts of a document or data set.
<b>Extensible Markup Path Language</b>	XPath. Standard used in XSLT to specify and locate elements in the input document's XML hierarchy. XPath is fully described in the W3C specification at <a href="http://w3c.org/TR/xpath">http://w3c.org/TR/xpath</a> . <i>Also known as</i> XML Path Language.

<b>Extensible Stylesheet Language for Transformations</b>	XSLT. Standard for processing XML data developed by the World Wide Web Consortium (W3C). XSLT performs XML-to-XML transformations, turning an input XML hierarchy into an output XML hierarchy. The XSLT specification is on the W3C website at <a href="http://www.w3c.org/TR/xslt">http://www.w3c.org/TR/xslt</a> .
<b>exterior gateway protocol</b>	EGP. Distributes routing information to routers that connect separate autonomous systems. <i>See also</i> IGP, BGP.
<b>External Border Gateway Protocol</b>	EBGP, external BGP. Configuration in which sessions are established between routers in different autonomous systems (ASs).
<b>External Border Gateway Protocol session</b>	EBGP session. Session between two BGP speakers that are in different autonomous systems. EBGP sessions typically exist between peers that are physically connected. <i>See also</i> IBGP session.
<b>External Data Representation Standard</b>	XDR. Standard for the description and encoding of data. XDR can be used to transfer data between computers.
<b>external metric</b>	Cost included in a route when OSPF exports route information from external autonomous systems. There are two types of external metrics: Type 1 and Type 2. Type 1 external metrics are equivalent to the link-state metric; that is, the cost of the route, used in the internal autonomous system. Type 2 external metrics are greater than the cost of any path internal to the autonomous system.
<b>external neighbors</b>	Two BGP routers that are peers, and reside in two different autonomous systems.
<b>extranet</b>	Private network that connects two or more intranets, allowing secure sharing of a part of a business's information with users outside the company, for example, allowing two or more companies or users to share resources and communicate over the Internet in their own virtual space. This technology greatly enhances business-to-business communications.

## F

<b>fabric</b>	<ul style="list-style-type: none"> <li>• Interconnection of network nodes using one or more network switches that function as a single logical entity.</li> <li>• (of Linux servers) Python library and command-line tool for streamlining the use of SSH for application deployment or systems administration tasks.</li> </ul>
<b>fabric schedulers</b>	Identify a packet as high or low priority based on its forwarding class, and associate schedulers with the fabric priorities.
<b>facilities data link</b>	FDL. Type of message that can be used to determine the status of a line and to display statistics for the remote end of a connection.
<b>facility</b>	Group of system log messages that either are generated by the same software process (such as accounting statistics) or that concern a similar condition or activity (such as authentication attempts).

<b>failover</b>	Process by which a standby or secondary system component automatically takes over the functions of an active or primary component when the primary component fails or is temporarily shut down or removed for servicing. During failover, the system continues to perform normal operations with little or no interruption in service. <i>See also</i> GRES, switchover.
<b>failure pool</b>	In Junos App Balancer, if all the nodes in a pool should fail, requests are sent to its failure pool, if one is configured.
<b>false alert</b>	Any situation in which benign traffic causes an IDS (intrusion detection system) to generate an alert. <i>Also known as</i> false positive.
<b>false positive</b>	Any situation in which benign traffic causes an IDS (intrusion detection system) to generate an alert. <i>Also known as</i> false alert.
<b>far-end alarm and control</b>	FEAC. T3 signal used to send alarm or status information from the far-end terminal back to the near-end terminal, and to initiate T3 loopbacks at the far-end terminal from the near-end terminal.
<b>Fast Ethernet</b>	Term encompassing a number of Ethernet standards that carry traffic at the nominal rate of 100 Mbps, instead of the original Ethernet speed of 10 Mbps. <i>See also</i> Ethernet, Gigabit Ethernet.
<b>fast port</b>	Fast Ethernet port on a J4300 Services Router, and either a Fast Ethernet port or DS3 port on a J6300 Services Router. Only enabled ports are counted. A two-port Fast Ethernet PIM with one enabled port counts as one fast port. The same PIM with both ports enabled counts as two fast ports.
<b>fast reroute</b>	FRR. Mechanism for automatically rerouting traffic on an LSP if a node or link in an LSP fails, thus reducing the loss of packets traveling over the LSP. <i>Also known as</i> MPLS fast reroute (MPLS FRR).
<b>fault tolerance</b>	In Junos App Balancer, the ability of a cluster or pool to cope with failure of one or more of its servers, without interruption to service.
<b>fault, configuration, accounting, performance, and security</b>	FCAPS. ISO model that defines the categories for the functions of a network management system. Sometimes followed by the term <i>management</i> .
<b>FBF</b>	filter-based forwarding. Filter that classifies packets to determine their forwarding path within a router. FBF is used to redirect traffic for analysis. <i>Also known as</i> policy-based routing (PBR).
<b>FC</b>	Fibre Channel. High-speed network technology used for storage area networks (SANs).

<b>FC forwarder</b>	<p>FCF. The two types of forwarders are:</p> <ul style="list-style-type: none"> <li>• Fibre Channel switch that has all physical Fibre Channel ports and the necessary set of services as defined in the T11 Organization Fibre Channel Switched Fabric (FC-SW) standards.</li> <li>• Device that has the necessary set of services defined in the T11 Organization Fibre Channel Switched Fabric (FC-SW) standards and which has the FCoE capabilities to act as an FCoE-based Fibre Channel switch, as defined by the Fibre Channel Backbone – 5 (FC-BB-5) Rev. 2.00 specification.</li> </ul>
<b>FCAPS</b>	fault, configuration, accounting, performance, and security. ISO model that defines the categories for the functions of a network management system. Sometimes followed by the term <i>management</i> .
<b>FCF</b>	<p>FC forwarder, FCoE forwarder. The two types of forwarders are:</p> <ul style="list-style-type: none"> <li>• FC forwarder. Fibre Channel switch that has all physical Fibre Channel ports and the necessary set of services as defined in the T11 Organization Fibre Channel Switched Fabric (FC-SW) standards.</li> <li>• FCoE forwarder. Device that has the necessary set of services defined in the T11 Organization Fibre Channel Switched Fabric (FC-SW) standards and which has the FCoE capabilities to act as an FCoE-based Fibre Channel switch, as defined by the Fibre Channel Backbone – 5 (FC-BB-5) Rev. 2.00 specification.</li> </ul>
<b>FCIP</b>	Fibre Channel over IP. IP-based storage networking technology developed by the IETF that overcomes the distance limitations of native Fibre Channel. With FCIP technology, Fibre Channel information is transmitted by tunneling data between geographically separated storage area networks (SANs) by using existing IP infrastructure, while keeping fabric services intact. <i>Also known as Fibre Channel tunneling, storage tunneling. See also Fibre Channel, SAN.</i>
<b>FCoE</b>	Fibre Channel over Ethernet. Standard for transporting FC frames over Ethernet networks. FCoE encapsulates Fibre Channel frames in Ethernet so that the same high-speed Ethernet physical infrastructure can transport both data and storage traffic while preserving the lossless CoS that FC requires. FCoE servers connect to a switch that supports both FCoE and native FC protocols. This allows FCoE servers on the Ethernet network to access FC storage devices in the SAN fabric on one converged network
<b>FCoE forwarder</b>	FCF. Device that has the necessary set of services defined in the T11 Organization Fibre Channel Switched Fabric (FC-SW) standards and which has the FCoE capabilities to act as an FCoE-based Fibre Channel switch, as defined by the Fibre Channel Backbone – 5 (FC-BB-5) Rev. 2.00 specification.
<b>FCoE Initialization Protocol</b>	FIP. Layer 2 protocol that establishes and maintains Fibre Channel (FC) virtual links between pairs of FCoE devices such as server FCoE nodes (ENodes) and FC switches.

<b>FCoE Initialization Protocol snooping</b>	FIP snooping. Security feature enabled for FCoE VLANs on an Ethernet switch that connects FCoE nodes to Fibre Channel switches or FCFs. The two types of FIP snooping inspect data in FIP frames and use that data to create firewall filters that are installed on the ports in the FCoE VLAN. The filters permit only traffic from sources that perform a successful fabric login to the Fibre Channel switch. All other traffic on the VLAN is denied. FIP snooping can also provide additional visibility into FCoE Layer 2 operation.
<b>FCoE transit switch</b>	<p>Switch with a minimum set of features designed to support FCoE Layer 2 forwarding and FCoE security. The switch can also have optional additional features. Minimum feature support is:</p> <ul style="list-style-type: none"> <li>• Priority-based flow control (PFC)</li> <li>• Enhanced transmission selection (ETS)</li> <li>• Data Center Bridging Capability Exchange (DCBX) protocol, including the FCoE application TLV</li> <li>• FIP snooping (minimum support is FIP automated filter programming at the ENode edge)</li> </ul> <p>A transit switch has a Fibre Channel stack even though it is not a Fibre Channel switch or an FC forwarder.</p>
<b>FCoE VLAN</b>	Fibre Channel over Ethernet VLAN. VLAN dedicated to carrying only FCoE traffic. FCoE traffic must travel in a VLAN. Only FCoE interfaces should be members of an FCoE VLAN. Ethernet traffic that is not FCoE traffic must travel in a different VLAN.
<b>FCS</b>	frame check sequence. Calculation added to a frame for error control. FCS is used in HDLC, Frame Relay, and other Data Link Layer protocols.
<b>FDDI</b>	Fiber Distributed Data Interface. Set of ANSI protocols for sending digital data over fiber-optic cable. FDDI networks are token-passing networks, and support data rates of up to 100 Mbps (100 million bits). FDDI networks are typically used as backbones for wide area networks.
<b>FDL</b>	facilities data link. Type of message that can be used to determine the status of a line and to display statistics for the remote end of a connection.
<b>FEAC</b>	far-end alarm and control. T3 signal used to send alarm or status information from the far-end terminal back to the near-end terminal, and to initiate T3 loopbacks at the far-end terminal from the near-end terminal.
<b>FEB</b>	Forwarding Engine Board. In M5 and M10 routers, provides route lookup, filtering, and switching to the destination port.
<b>FEC</b>	forwarding equivalence class. Set of packets with similar or identical characteristics that are forwarded in the same manner, on the same path, with the same forwarding treatment, and using the same MPLS label. FECs are defined in the base LDP specification and can be extended through the use of additional parameters. FECs are also represented in other label distribution protocols.

<b>FECN</b>	forward explicit congestion notification. In a Frame Relay network, a header bit transmitted by the source device requesting that the destination device slow down its requests for data. FECN and BECN minimize the possibility that packets will be discarded when more packets arrive than can be handled. <i>See also</i> BECN.
<b>Federal Information Processing Standards</b>	FIPS. Defines, among other things, security levels for computer and networking equipment. FIPS is usually applied to military environments.
<b>feed source</b>	Source from which a configurable threat feed originates. Configurable threat feeds provide actionable intelligence to policies about various types of threats. Juniper Networks Sky Advanced Threat Prevention (Sky ATP) is an example of a feed source. You can customize feed sources by adding IP addresses, domains, and URLs to your own lists.
<b>FIB</b>	forwarding information base. In the JunosE Software, the IP routing table. Referred to in the context of BGP.
<b>Fiber Distributed Data Interface</b>	FDDI. Set of ANSI protocols for sending digital data over fiber-optic cable. FDDI networks are token-passing networks, and support data rates of up to 100 Mbps (100 million bits). FDDI networks are typically used as backbones for wide area networks.
<b>Fibre Channel</b>	FC. High-speed network technology used for storage area networks (SANs).
<b>Fibre Channel fabric</b>	Network of Fibre Channel devices that provides communication among devices, device name lookup, security, and redundancy.
<b>Fibre Channel over Ethernet</b>	FCoE. Standard for transporting FC frames over Ethernet networks. FCoE encapsulates Fibre Channel frames in Ethernet so that the same high-speed Ethernet physical infrastructure can transport both data and storage traffic while preserving the lossless CoS that FC requires. FCoE servers connect to a switch that supports both FCoE and native FC protocols. This allows FCoE servers on the Ethernet network to access FC storage devices in the SAN fabric on one converged network
<b>Fibre Channel over Ethernet VLAN</b>	FCoE VLAN. VLAN dedicated to carrying only FCoE traffic. FCoE traffic must travel in a VLAN. Only FCoE interfaces should be members of an FCoE VLAN. Ethernet traffic that is not FCoE traffic must travel in a different VLAN.
<b>Fibre Channel over IP</b>	FCIP. IP-based storage networking technology developed by the IETF that overcomes the distance limitations of native Fibre Channel. With FCIP technology, Fibre Channel information is transmitted by tunneling data between geographically separated storage area networks (SANs) by using existing IP infrastructure, while keeping fabric services intact. <i>Also known as</i> Fibre Channel tunneling, storage tunneling. <i>See also</i> Fibre Channel, SAN.
<b>field-programmable gate array</b>	FPGA. Semiconductor device that contains programmable logic components and interconnects. Also a category of hardware classifier.



<b>field-replaceable unit</b>	FRU. Router component that customers can replace onsite.
<b>FIFO</b>	first in, first out. Scheduling method in which the first data packet stored in the queue is the first data packet removed from the queue. All Junos OS interface queues operate in this mode by default.
<b>file system synchronization mode</b>	<p>Default behavior mode for E Series routers that contain redundant SRP modules, and available only to SRP modules. Characteristics of this mode include:</p> <ul style="list-style-type: none"> <li>• Files and data in nonvolatile storage (NVS) remain synchronized between the primary (active) SRP module and standby SRP module.</li> <li>• SRP modules reload all line modules and restart from saved configuration files.</li> <li>• If the active SRP module switches over to the standby SRP, the router cold-restarts as follows: all line modules are reloaded; user connections are lost; forwarding through the chassis stops until the router SRP module recovers; the standby SRP module boots from the last known good configuration from NVS.</li> </ul> <p><i>See also</i> high availability mode, switchover.</p>
<b>File Transfer Protocol</b>	FTP. Application protocol that is part of the TCP/IP stack model. Used for transferring files between network nodes. FTP is defined in RFC 959, <i>File Transfer Protocol</i> .
<b>filter</b>	Process or device that screens packets based on certain characteristics, such as source address, destination address, or protocol, and forwards or discards packets that match the filter. Filters are used to control data packets or local packets. <i>See also</i> packet.
<b>filter-based forwarding</b>	FBF. Filter that classifies packets to determine their forwarding path within a router. FBF is used to redirect traffic for analysis. <i>Also known as</i> policy-based routing (PBR).
<b>FIP</b>	FCoE Initialization Protocol. Layer 2 protocol that establishes and maintains Fibre Channel (FC) virtual links between pairs of FCoE devices such as server FCoE nodes (ENodes) and FC switches.
<b>FIP snooping</b>	FCoE Initialization Protocol snooping. Security feature enabled for FCoE VLANs on an Ethernet switch that connects FCoE nodes to Fibre Channel switches or FCFs. The two types of FIP snooping inspect data in FIP frames and use that data to create firewall filters that are installed on the ports in the FCoE VLAN. The filters permit only traffic from sources that perform a successful fabric login to the Fibre Channel switch. All other traffic on the VLAN is denied. FIP snooping can also provide additional visibility into FCoE Layer 2 operation.
<b>FIPS</b>	Federal Information Processing Standards. Defines, among other things, security levels for computer and networking equipment. FIPS is usually applied to military environments.

<b>FIPS mode</b>	Federal Information Processing Standards (FIPS) 140-2 defines security levels for hardware and software that perform cryptographic functions. By meeting the applicable overall requirements within the FIPS standard, Juniper Networks M Series, MX Series, T Series, and PTX Series routers and EX Series switches running Junos OS in FIPS mode comply with the FIPS 140-2 Level 1 standard.
<b>Firefly Perimeter</b>	Virtual security appliance that provides security and networking services at the perimeter or edge in virtualized private or public cloud environments. Firefly Perimeter runs as a virtual machine (VM) on standard x86 servers. <i>Renamed</i> vSRX as of Junos OS Release 12.1X47-D20. <i>See also</i> vSRX.
<b>firewall action</b>	Action performed by a security device when the device receives traffic that matches the direction, source, destination, and service. Firewall actions include permit, deny, reject.
<b>firewall device</b>	Security gateway positioned between two networks, usually between a trusted network and the Internet. It is a means of controlling access to a network to protect it from misuse and malicious intent from other users (for example, denial-of-service attacks). A firewall ensures that all traffic that crosses it conforms to the organization's security policy. Firewalls track and control communications, deciding whether to pass, reject, discard, encrypt, or log them based on a defined set of security rules. A firewall, which can be either a physical or a virtual device, can also be used to secure sensitive portions of a local network.
<b>firewall filter</b>	At the firewall, a policy that evaluates the context of connections and permits or denies traffic based on the context, updating this information dynamically. Context includes IP source and destination addresses, port numbers, TCP sequencing information, and TCP connection flags. The context established in the first packet of a TCP session must match the context contained in all subsequent packets if a session is to remain active. <i>Also known as</i> access control list, authorization profile, packet filter. <i>See also</i> stateful firewall filter, stateless firewall filter.
<b>firmware</b>	Instructions and data programmed directly into the circuitry of a hardware device for the purpose of controlling the device. Firmware is used for vital programs that must not be lost when the device is powered off.
<b>first in, first out</b>	FIFO. Scheduling method in which the first data packet stored in the queue is the first data packet removed from the queue. All Junos OS interface queues operate in this mode by default.
<b>First Revenue Shipment</b>	FRS. Indicates that a product is released to production.
<b>flap damping</b>	Method of reducing the number of update messages sent between BGP peers, thereby reducing the load on those peers without adversely affecting the route convergence time for stable routes. <i>Also known as</i> damping.
<b>flapping</b>	Condition of network instability where a route is announced and withdrawn repeatedly, often as the result of an intermittently failing link. <i>Also known as</i> route flapping.
<b>Flash Media Server</b>	FMS. An Adobe Systems proprietary data and media server that works with the Flash Player runtime application to create media-driven, multiuser rich Internet applications (RIAs).

<b>flexible bandwidth allocation</b>	Technique to temporarily provide additional capacity on a link to handle bursts in data, videoconferencing, or other variable bit rate applications. <i>Also known as</i> bandwidth on demand.
<b>Flexible PIC Concentrator</b>	FPC. An interface concentrator on which physical interface cards (PICs) are mounted. An FPC is inserted into a slot in a Juniper Networks router. <i>See also</i> PIC.
<b>floating static route</b>	Route with an administrative distance greater than the administrative distance of the dynamically learned versions of the same route. The static route is used only when the dynamic routes are no longer available. When a floating static route is configured on an interface with a dialer filter, the interface can be used for backup.
<b>flood and prune</b>	Method of forwarding multicast data packets in a dense-mode network. Flooding and pruning occur every 3 minutes.
<b>flooding</b>	Distribution and synchronization of the link-state database between OSPF routers.
<b>flow</b>	Stream of routing information and packets that are handled by the Routing Engine and the Packet Forwarding Engine. The Routing Engine handles the flow of routing information between the routing protocols and the routing tables and between the routing tables and the forwarding tables, as well as the flow of local packets from the router physical interfaces to the Routing Engine. The Packet Forwarding Engine handles the flow of data packets into and out of the router physical interfaces.
<b>flow collection interface</b>	Interface that combines multiple cflowd records into a compressed ASCII data file and exports the file to an FTP server for storage and analysis, allowing users to manipulate the output from traffic monitoring operations.
<b>flow control action</b>	Junos OS syntax used in a routing policy or firewall filter. It alters the default logical processing of the policy or filter when a set of match conditions is met.
<b>flow monitoring</b>	Application that monitors the flow of traffic and enables lawful interception of packets transiting between two routers. Traffic flows can be passively monitored by an offline router or actively monitored by a router participating in the network. <i>See also</i> active flow monitoring.
<b>flow tracking</b>	Method of reducing false positives, it correlates multiple TCP (Transmission Control Protocol) or UDP (User Datagram Protocol) connections into a single flow to determine the validity of the traffic.
<b>flow-tap application</b>	Uses Dynamic Tasking Control Protocol (DTCP) requests to intercept IPv4 packets in an active monitoring router and send a copy of packets that match filter criteria to one or more content destinations. Flow-tap configurations can be used in flexible trend analysis for detecting new security threats and for lawfully intercepting data.

<b>flowd</b>	Flow-based packet forwarding process that applies ingress interface filters and policers to packets entering the device. The flowd establishes the state of the packet's session and manages the packet as it transits the security flow and associated features, applying output filtering and traffic shaping before transmitting the packet out the egress interface.
<b>FMS</b>	Flash Media Server. An Adobe Systems proprietary data and media server that works with the Flash Player runtime application to create media-driven, multiuser rich Internet applications (RIAs).
<b>forward explicit congestion notification</b>	FECN. In a Frame Relay network, a header bit transmitted by the source device requesting that the destination device slow down its requests for data. FECN and BECN minimize the possibility that packets will be discarded when more packets arrive than can be handled. <i>See also</i> BECN.
<b>forwarding address</b>	In an OSPF network, address used to direct packets to a next hop other than the OSPF router advertising the route. Normally, the OSPF forwarding address field is set to 0.0.0.0. Use this forwarding address only when the advertising router has an OSPF adjacency on the next hop and this adjacency is multi-access (not point-to-point or multipoint).
<b>forwarding adjacency</b>	RSVP LSP tunnel through which one or more other RSVP LSPs can be tunneled.
<b>forwarding classes</b>	Defined set associated with each received packet on a router. These classes affect the forwarding, scheduling, and marking policies applied as the packet transits a routing platform. The forwarding class plus the loss priority define the per-hop behavior. <i>Also known as</i> ordered aggregates (in the IETF Differentiated Services architecture).
<b>Forwarding Engine Board</b>	FEB. In M5 and M10 routers, provides route lookup, filtering, and switching to the destination port.
<b>forwarding equivalence class</b>	FEC. Set of packets with similar or identical characteristics that are forwarded in the same manner, on the same path, with the same forwarding treatment, and using the same MPLS label. FECs are defined in the base LDP specification and can be extended through the use of additional parameters. FECs are also represented in other label distribution protocols.
<b>forwarding information base</b>	FIB, forwarding table. In the JunosE Software, the IP routing table. Referred to in the context of BGP.
<b>forwarding table</b>	Table of best routes to all destinations reachable by the router. For each destination, the table has only the single best route to the destination selected from the IP routing table. The Junos OS routing protocol process installs active routes from its routing tables into the Routing Engine forwarding table. The kernel copies this forwarding table into the Packet Forwarding Engine, which determines which interface transmits the packets. <i>Also known as</i> kernel forwarding table, Cisco Express Forwarding (CEF).
<b>forwarding table entry</b>	FTE. Of all destinations reachable by the router, the single best route to a given destination selected from the IP routing table.
<b>FPC</b>	Flexible PIC Concentrator. An interface concentrator on which physical interface cards (PICs) are mounted. An FPC is inserted into a slot in a Juniper Networks router. <i>See also</i> PIC.

<b>FPGA</b>	field-programmable gate array. Semiconductor device that contains programmable logic components and interconnects. Also a category of hardware classifier.
<b>FQDN</b>	fully qualified domain name. The hostname and domain name for a specific system.
<b>fractional E1</b>	Interface that contains one or more of the 32 DS0 time slots that can be reserved from an E1 interface. (The first time slot is reserved for framing.)
<b>fractional interface</b>	Interface that contains one or more DS0 time slots reserved from an E1 or T1 interface, allowing service providers to provision part of the interface to one customer and the other part to another customer. The individual fractional interfaces connect to different destinations, and customers pay for only the bandwidth fraction used and not for the entire E1 or T1 interface. Fractional interfaces can be configured on both channelized PICs and PIMs and unchannelized, regular E1 and T1 PICs and PIMs.
<b>fractional T1, fractional T1 channel</b>	Interface that contains one or more of the 24 DS0 time slots that can be reserved from a T1 interface. A DS0 portion of a 24-DS0 T1 line. Fractional T1s enable you to separate out one DS0 line or combine several lines into bundles (usually in multilink PPP).
<b>fragmentation</b>	In TCP/IP, the process of breaking packets into the smallest maximum size packet data unit (PDU) supported by any of the underlying networks. Required when IP must transmit a large packet through a network that transmits smaller packets, or when the MTU size of the other network is smaller. In the Open Systems Interconnection (OSI) Reference Model, this process is known as segmentation. For Junos OS applications, split Layer 3 packets can then be encapsulated in MLFR or MLPPP for transport.
<b>fragmentation and assembly</b>	<ul style="list-style-type: none"> <li>• In Frame Relay, a feature that reduces excessive delays of Frame Relay packets by breaking them into smaller fragments that are then interleaved with real-time frames.</li> <li>• In the Multilink Point-to-Point Protocol (MLPPP), fragmentation is the process by which a large packet is broken up into multiple smaller fragments for simultaneous transmission across multiple links of an MLPPP bundle. Reassembly is the process by which the destination router reassembles the fragments into the original packets.</li> </ul>
<b>frame check sequence</b>	FCS. Calculation added to a frame for error control. FCS is used in HDLC, Frame Relay, and other Data Link Layer protocols.
<b>Frame Relay</b>	Public, connection-oriented packet service based on the core aspects of the Integrated Services Digital Network. It eliminates all processing at the Network Layer and greatly restricts Data Link Layer processing. Frame Relay is an efficient replacement for the older X.25 protocol that does not require explicit acknowledgment of each frame of data. It allows private networks to reduce costs by using shared facilities between the end-point switches of a network managed by a Frame Relay service provider. Individual data-link connection identifiers (DLCIs) are assigned to ensure that each customer receives only its own traffic.
<b>Frame Relay Forum</b>	FRF. Technical committee that promotes Frame Relay by negotiating agreements and developing standards.

<b>Frame Relay LMI</b>	Frame Relay local management interface. Provides the operator with configuration and status information relating to the Frame Relay VCs in operation. LMI specifies a polling mechanism to receive incremental and full-status updates from the network. The router can represent either side of the User-to-Network Interface (UNI) and supports unidirectional LMI. Bidirectional support for the Network-to-Network Interface (NNI) is also supported.
<b>frequency-division multiplexed channel</b>	Signals that are carried at different frequencies and transmitted over a single wire or wireless medium.
<b>FRF</b>	Frame Relay Forum. Technical committee that promotes Frame Relay by negotiating agreements and developing standards.
<b>FRF.15</b>	Implementation of MLFR using multiple virtual connections to aggregate logical bandwidth for end-to-end Frame Relay, defined by the Frame Relay Forum in <i>End-to-End Multilink Frame Relay Implementation Agreement FRF.15</i> .
<b>FRF.16</b>	Implementation of MLFR in which a single logical connection is provided by multiplexing multiple physical interfaces for user-to-network interface and network-to-network interface (UNI/NNI) connections. Defined by the Frame Relay Forum in <i>Multilink Frame Relay UNI/NNI Implementation Agreement FRF.16.1</i> .
<b>front office</b>	Physical or virtual location that a vendor uses for activities directly related to customers, such as billing or purchasing. <i>See also</i> back office, OSS.
<b>front-end IP address</b>	The permanent, externally available IP address of a Junos App Balancer.
<b>front-end server</b>	A server that is contactable from the Internet, such as a Junos App Balancer.
<b>FRR</b>	fast reroute. Mechanism for automatically rerouting traffic on an LSP if a node or link in an LSP fails, thus reducing the loss of packets traveling over the LSP. <i>Also known as</i> MPLS fast reroute (MPLS FRR).
<b>FRS</b>	First Revenue Shipment. Indicates that a product is released to production.
<b>FRU</b>	field-replaceable unit. Router component that customers can replace onsite.
<b>FTE</b>	forwarding table entry. Of all destinations reachable by the router, the single best route to a given destination selected from the IP routing table.
<b>FTP</b>	File Transfer Protocol. Application protocol that is part of the TCP/IP stack model. Used for transferring files between network nodes. FTP is defined in RFC 959, <i>File Transfer Protocol</i> .
<b>Fuel</b>	Open-source deployment and management tool for OpenStack.
<b>Full</b>	OSPF adjacency state that represents a fully functional neighbor relationship.

<b>full download</b>	In virtual player functions, an HTTP media delivery method in which the entire media file is downloaded before playback, in contrast with other methods such as progressive download, which partially downloads before initiating playback, or streaming modes that simultaneously download and play back in real time. <i>See also</i> progressive download.
<b>full virtualization</b>	Virtualization technique in which the underlying hardware is fully simulated in one or more virtual machines (VMs). <i>See also</i> paravirtualization.
<b>full-duplex mode</b>	Transmission mode that supports transmission and reception of signals in both directions simultaneously. <i>See also</i> duplex mode, half-duplex mode.
<b>full-mesh VPN</b>	VPN in which each site in the VPN can communicate with every other site in that same VPN. <i>See also</i> hub-and-spoke VPN, overlapping VPN.
<b>fully qualified domain name</b>	FQDN. The hostname and domain name for a specific system.
<b>fwauthd</b>	Firewall authentication process that implements and manages user authentication configuration, and authenticates users who access the firewall.
<b>fxp0</b>	management Ethernet interface. Permanent interface that provides an out-of-band method, such as SSH and telnet, to connect to the routing platform. SNMP can use the management interface to gather statistics from the routing platform. <i>See also</i> permanent interface.
<b>fxp1</b>	Junos OS permanent interface used for communications between the Routing Engine and the Packet Forwarding Engine. This interface is not present in all routers.
<b>fxp2</b>	Junos OS permanent interface used for communications between the Routing Engine and the Packet Forwarding Engine. This interface is not present in all routers.

## G

<b>G-CDR</b>	GGSN call detail record. Collection of charges in ASN.1 format that is eventually billed to a Mobile Station user.
<b>G-PDU</b>	User data message sent in a path. It consists of a T-PDU plus a GTP header.
<b>G.992.1</b>	ITU-T G.992.1. International standard recommendation that describes ADSL. Annex A defines how ADSL works over twisted-pair copper (POTS) lines. Annex B defines how ADSL works over ISDN lines.
<b>G.SHDSL</b>	symmetric high-speed digital subscriber line (SHDSL). Standard published in 2001 by the ITU-T with recommendation ITU G.991.2. G.SHDSL incorporates features of other DSL technologies such as asymmetrical DSL (ADSL). <i>See also</i> SHDSL, ADSL.
<b>garbage collection timer</b>	Timer used in a distance-vector network that represents the time remaining before a route is removed from the routing table.

<b>gateway</b>	Program or device that converts one protocol or format to another, or acts as a go-between two or more networks that use the same protocols. In this case, the gateway functions as an entry/exit point to the network. Also, an older term for a router.
<b>gateway GPRS support node</b>	GGSN. Router that serves as a gateway between mobile networks and packet data networks.
<b>gateway router</b>	Device that passes DHCP messages between DHCP clients and DHCP servers. <i>Also known as</i> relay agent.
<b>GBIC</b>	Gigabit Interface Connector. Interface module card used on some security devices for connecting to a fiber optic network.
<b>general community</b>	Convenient way to categorize groups of routes to facilitate the use of routing policies. <i>Also known as</i> private community or local-use community.
<b>General Packet Radio Service</b>	GPRS. Packet-switched service that enables high-speed wireless Internet and other data communications, allowing full mobility and wide-area coverage as information is sent and received across a mobile network. Using a packet data service, subscribers are always connected and always online so services are easy and quick to access.
<b>Generalized Multiprotocol Label Switching</b>	GMPLS. A protocol that extends the functionality of MPLS to include a wider range of label-switched path (LSP) options for a variety of network devices.
<b>generated route</b>	Summary route that uses an IP address next hop to forward packets in an IP network. A generated route is functionally similar to an aggregated route.
<b>generic routing encapsulation</b>	GRE. General tunneling protocol that can encapsulate many types of packets to enable data transmission through a tunnel. GRE is used with IP to create a virtual point-to-point link to routers at remote points in a network. <i>See also</i> tunneling protocol.
<b>generic token card</b>	GTC. Carries user-specific token cards for authentication.
<b>GeoIP</b>	Method of locating the geographic location of a computer device by tracing its IP address.
<b>GGSN</b>	gateway GPRS support node. Router that serves as a gateway between mobile networks and packet data networks.
<b>GGSN call detail record</b>	G-CDR. Collection of charges in ASN.1 format that is eventually billed to a Mobile Station user.
<b>GI interface</b>	Interface between a GSN and an external network or the Internet.
<b>Gigabit Backplane Physical Interface Module</b>	GPIM. SRX mid-range services gateway network interface card (NIC) that includes standard GPIMs installed in a single-high, single-wide GPIM slot and has gigabit connectivity to the system backplane.



<b>Gigabit Ethernet</b>	Term describing various technologies for implementing Ethernet networking at a nominal speed of one gigabit per second. Gigabit Ethernet is supported over both optical fiber and twisted-pair cable. Physical Layer standards include 1000BASE-T, 1 Gbps over CAT-5e copper cabling, and 1000BASE-SX for short to medium distances over fiber. <i>See also</i> Ethernet, Fast Ethernet.
<b>GitHub</b>	Web-based Git or version control repository and Internet hosting service based on a graphical interface.
<b>global AS</b>	Autonomous system (AS) consisting of multiple subautonomous systems (sub-ASs).
<b>Global Configuration mode</b>	Privileged Exec mode from which you can set parameters or enable features. Within Global Configuration mode, you can apply features globally to a router, enable a feature or function, disable a feature or function, and configure a feature or function. <i>See also</i> Privileged Exec mode, User Exec mode.
<b>global domain</b>	Top level, or root domain, that contains all subdomains (logical groupings of devices, policies, and access privileges). <i>See also</i> domain.
<b>global export map</b>	Route map applied to a VRF to modify and filter routes exported by the VRF to the global BGP non-VPN RIB in the parent VR. <i>See also</i> export map, global import map, import map.
<b>global import map</b>	Route map applied to a VRF to modify and filter routes imported to the the BGP RIB of the VRF from the global BGP non-VPN RIB in the parent VR. <i>See also</i> export map, global export map, import map.
<b>global routing table</b>	Database maintained by IP on E Series router SRP modules. Contains at most one route per protocol to each prefix in the table. <i>See also</i> local routing table, forwarding table, routing table.
<b>Global System for Mobile Communications</b>	GSM. A second-generation (2G) mobile wireless networking standard defined by ETSI that uses TDMA technology and operates in the 900-MHz radio band. <i>See also</i> TDMA.
<b>GMPLS</b>	Generalized Multiprotocol Label Switching. A protocol that extends the functionality of MPLS to include a wider range of label-switched path (LSP) options for a variety of network devices.
<b>GMT</b>	Greenwich Mean Time, UTC, (Coordinated Universal Time). Historically referred to as Greenwich mean time (GMT), a high-precision atomic time standard that tracks Universal Time (UT) and is the basis for legal civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC.
<b>Gn interface</b>	Interface between two GSNs within the same Public Land Mobile Network (PLMN).
<b>GNF</b>	guest network function. Router partition configured using the Junos node slicing feature. You can configure multiple GNFs on a physical router. A GNF logically owns the line cards assigned to it by the base system (BSYS), and maintains the forwarding state of the line cards. A GNF, equivalent to a standalone router, has its own Junos OS control plane, which runs as a virtual machine (VM). GNFs are configured and administered independently, and are operationally isolated from each other. <i>See also</i> BSYS, Junos node slicing, VNF.

<b>Gp interface</b>	Interface between two GSNs located in different Public Land Mobile Networks (PLMNs).
<b>GPIM</b>	Gigabit Backplane Physical Interface Module. SRX Series mid-range services gateway network interface card (NIC) that includes standard GPIMs installed in a single-high, single-wide GPIM slot and has gigabit connectivity to the system backplane.
<b>GPRS</b>	General Packet Radio Service. Packet-switched service that enables high-speed wireless Internet and other data communications, allowing full mobility and wide-area coverage as information is sent and received across a mobile network. Using a packet data service, subscribers are always connected and always online so services are easy and quick to access.
<b>GPRS Roaming Exchange</b>	GRX. Acts as a hub for GPRS connections from roaming users, removing the need for a dedicated link between each GPRS service provider.
<b>GPRS tunneling protocol</b>	GTP. Transports IP packets between an SGSN and a GGSN. <i>See also</i> tunneling protocol.
<b>graceful restart</b>	Process that allows a router whose control plane is undergoing a restart to continue to forward traffic while recovering its state from neighboring routers. Without graceful restart, a control plane restart disrupts services provided by the router. Implementation varies by protocol. <i>Also known as</i> nonstop forwarding. <i>See also</i> cold restart, warm restart.
<b>graceful Routing Engine switchover</b>	GRES. In a router that contains a primary and a backup Routing Engine, allows the backup Routing Engine to assume the primary role automatically, with no disruption of packet forwarding. <i>Also known as</i> Stateful Switchover (SSO).
<b>graceful switchover</b>	Junos OS feature that allows a change from the primary device, such as a Routing Engine, to the backup device without interruption of packet forwarding.
<b>gratuitous ARP</b>	Broadcast request for a router's own IP address to check whether that address is being used by another node. Primarily used to detect IP address duplication.
<b>GRE</b>	generic routing encapsulation. General tunneling protocol that can encapsulate many types of packets to enable data transmission through a tunnel. GRE is used with IP to create a virtual point-to-point link to routers at remote points in a network. <i>See also</i> tunneling protocol.
<b>GRE tunnel</b>	IP tunnel that uses GRE-encapsulated IP packets to enable data transmission. The resulting encapsulated packet contains a GRE header and a delivery header. Consequently, the packet requires more processing than an IP packet, and GRE can be slower than native routing protocols. GRE tunnels can be secured with IPsec.
<b>Greenwich Mean Time</b>	GMT, UTC, (Coordinated Universal Time). Historically referred to as Greenwich mean time (GMT), a high-precision atomic time standard that tracks Universal Time (UT) and is the basis for legal civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC.

<b>GRES</b>	graceful Routing Engine switchover. In a router that contains a primary and a backup Routing Engine, allows the backup Routing Engine to assume the primary role automatically, with no disruption of packet forwarding. <i>Also known as Stateful Switchover (SSO).</i>
<b>group</b>	Collection of related BGP peers that organizes previously created devices into user-defined groups, making it easier for you to configure and manage devices in your domain. Groups enable you to execute certain NSM operations on multiple security devices at the same time.
<b>group address</b>	IP address used as the destination address in a multicast IP packet. The group address functionally represents the senders and interested receivers for a particular multicast data stream.
<b>group expression object</b>	Represents a statement that sets conditions for authentication requirements that enable you to combine multiple external user objects. You can create group expressions using the operator OR, AND, or NOT to combine user objects, user group objects, or other group expressions.
<b>group node</b>	Scheduler node associated with a {port interface, traffic-class group} pair. Because the logical interface is the port, only one such scheduler node can exist for each traffic-class group above the port. This node aggregates all traffic for traffic classes in the group.
<b>group preshared keys</b>	Secure remote access method that uses L2TP/IPsec when connecting to networks that do not use a certificate authority (CA) to issue certificates. A group preshared key is associated with a local IP address in the E Series router and is used to authenticate L2TP/IPsec clients that target this IP address as their VPN server address. Group preshared keys are not fully secure; they open to man-in-the-middle attacks. Digital certificates are preferred instead.
<b>GRX</b>	GPRS Roaming Exchange. Acts as a hub for GPRS connections from roaming users, removing the need for a dedicated link between each GPRS service provider.
<b>GSM</b>	Global System for Mobile Communications. A second-generation (2G) mobile wireless networking standard defined by ETSI that uses TDMA technology and operates in the 900-MHz radio band. <i>See also</i> TDMA.
<b>GTC</b>	generic token card. Carries user-specific token cards for authentication.
<b>GTP</b>	GPRS tunneling protocol. Transports IP packets between an SGSN and a GGSN. <i>See also</i> tunneling protocol.
<b>GTP tunnel</b>	Tunnel in the GTP-U plane defined for each PDP context in the GSNs. A GTP tunnel in the GTP-C plane is defined for all PDP contexts with the same PDP address and APN (for Tunnel Management messages) or for each MS (for messages not related to Tunnel Management). A GTP tunnel is identified in each node with a TEID, an IP address, and a UDP port number. A GTP tunnel is necessary to forward packets between an external network and an MS user.
<b>GTP-C</b>	GGSN tunneling protocol, control. Allows an SGSN to establish packet data network access for a Mobile Station. <i>See also</i> tunneling protocol.

<b>GTP-C message</b>	Control messages exchanged between GSN pairs in a path to transfer GSN capability information between the pairs, to create, update and delete GTP tunnels, and for path management.
<b>GTP-PDU</b>	GTP Protocol Data Unit. Either a GTP-C message or a GTP-U message.
<b>GTP-U</b>	GGSN tunneling protocol, user plane. Carries Mobile Station user data packets. <i>See also</i> tunneling protocol.
<b>GTP-U message</b>	GTP-User Data message. Messages exchanged between GSN pairs or GSN/RNC pairs in a path to carry user data packets, and used as signaling messages for path management and error indication.
<b>guest</b>	In cloud computing, a discrete virtual machine (VM) that runs on a hypervisor-based host and shares its resources. A VM can be a virtualized workstation or server or other type of hardware. Each VM runs its own operating system image and applications that can be different from that of another VM running on the same host.
<b>guest machine</b>	<i>See</i> virtual machine.
<b>guest network function</b>	GNF. Router partition configured using the Junos node slicing feature. You can configure multiple guest network functions (GNFs) on a physical router. A GNF logically owns the line cards assigned to it by the base system (BSYS), and maintains the forwarding state of the line cards. A GNF, equivalent to a standalone router, has its own Junos OS control plane, which runs as a virtual machine (VM). GNFs are configured and administered independently, and are operationally isolated from each other. <i>See also</i> base system, Junos node slicing, virtual network function.
<b>GUI Server</b>	Manages the system resources in NSM and data that drives NSM functionality. It contains the NSM databases and centralizes information for devices, their configurations, attack and server objects, and policies.

## H

<b>H.323</b>	ITU-T recommendation that describes packet-based multimedia communications over networks that do not guarantee class of service, such as IP networks, providing a widely used standard for VoIP and conferencing that is modeled on ISDN PRI. It is implemented as an Application Layer Gateway (ALG) that provides secure VoIP communication between terminal hosts, such as IP phones and multimedia devices, in which the gatekeeper devices manage call registration, admission, and call status for VoIP calls. The gatekeepers can reside in the two different zones, or in the same zone. <i>Also known as</i> ITU-T H.323.
<b>HA</b>	high availability. Configuring devices to ensure service continuity in the event of a network outage or device failure. Used to provide fault detection and correction procedures to maximize the availability of critical services and applications. High availability provides both hardware-specific and software-specific methods to ensure minimal downtime and ultimately improve the performance of your network. <i>See also</i> high availability mode, chassis cluster.

<b>HAG</b>	hybrid access gateway. Logical function in the operator network that implements the network-side mechanisms for simultaneous use of both fixed broadband and 3GPP access networks. The gateway enables subscriber management by aggregating a subscriber's traffic from the two networks.
<b>half-duplex mode</b>	Transmission mode that supports transmission and reception of signals in both directions, but not at the same time. <i>See also</i> duplex mode, full-duplex mode.
<b>handshake</b>	Process of exchanging signaling information between two communications devices to establish the method and transmission speed of a connection.
<b>HAR</b>	hierarchical assured rate. Calculation process that dynamically adjusts bandwidth for scheduler nodes—a more powerful and efficient method of configuring assured rates than static assured rates. <i>See also</i> SHA-1, MD5.
<b>hard disk drives</b>	HDD. Refers to system storage media used for caching functions and installation procedures.
<b>hardened system</b>	Secure server with all appropriate security patches and bug fixes. These systems are designed to resist penetration.
<b>Hashed Message Authentication Code</b>	HMAC. Mechanism for message authentication that uses cryptographic hash functions. HMAC can be used with any iterative cryptographic hash function—for example, MD5 or SHA-1—in combination with a secret shared key. The cryptographic strength of HMAC depends on the properties of the underlying hash function. Defined in RFC 2104, <i>HMAC: Keyed-Hashing for Message Authentication</i> .
<b>hashing</b>	Cryptographic technique applied over and over (iteratively) to a message of arbitrary length to produce a hash “message digest” or “signature” of fixed length that is appended to the message when it is sent. In security, it is used to validate that the contents of a message have not been altered in transit. The Secure Hash Algorithm (especially SHA-1) and Message Digest 5 (MD5) are commonly used hashes. <i>See also</i> SHA, SHA-1, MD5.
<b>HBA</b>	host bus adapter. Physical mechanism that connects a host system to a server or storage devices.
<b>HDD</b>	hard disk drives. Refers to system storage media used for caching functions and installation procedures.
<b>HDLC</b>	High-Level Data Link Control. International Telecommunication Union (ITU) standard for a bit-oriented Data Link Layer protocol on which most other bit-oriented protocols are based. <i>Also known as</i> High-Speed Data Link Control.
<b>head-of-line blocking</b>	HOLB. When an ingress port sends traffic to multiple egress ports, congestion on one egress port can affect uncongested egress ports. For example, an ingress port sends traffic to two egress ports. One egress port experiences congestion and sends a message to the ingress port to stop sending traffic. The ingress port stops sending traffic and buffers it instead. However, the ingress port buffers all traffic, not just traffic destined for the congested port, so traffic destined for the uncongested port is also stopped because of HOLB.

<b>health monitor</b>	Junos OS extension to the RMON alarm system that provides predefined monitoring for file system, CPU, and memory usage. The health monitor also supports unknown or dynamic object instances such as Junos OS processes.
<b>heartbeat connection</b>	IP-based, bidirectional packet connection between the router and backup router in an MX Series Virtual Chassis. The member routers forming the heartbeat connection exchange <i>heartbeat packets</i> that provide critical information about the availability and health of each member router. During a disruption or split in the Virtual Chassis configuration, the heartbeat connection prevents the member routers from changing primary and backup roles unnecessarily. Without the heartbeat connection, a change in roles in such a situation can produce undesirable results, such as having two primary routers or no primary router.
<b>hello interval</b>	Amount of time an OSPF router continues to send a hello packet to each adjacent neighbor.
<b>hello mechanism</b>	Process used by an RSVP router to enhance the detection of network outages in an MPLS network.
<b>hello messages</b>	Messages used to detect adjacent peers and maintain adjacency.
<b>hello packet</b>	Message sent out to the current network to announce the presence of the current routing instance to the network. Hello packets aid in the discovery of neighbors and in a router being able to connect to other devices on the network. When an OSPF interface is created, the interface sends Hello packets to the network to announce itself.
<b>hello protocol</b>	Establishes and maintains neighbor relationships; communication between neighbors is bidirectional. The hello protocol also dynamically discovers neighboring routers on broadcast or point-to-point networks.
<b>hierarchical assured rate</b>	HAR. Calculation process that dynamically adjusts bandwidth for scheduler nodes—a more powerful and efficient method of configuring assured rates than static assured rates. <i>See also</i> SHA, SHA-1, MD5.
<b>hierarchical round-robin</b>	HRR. Scheme for allocating bandwidth to queues in proportion to their weights.
<b>high availability</b>	HA. Configuring devices to ensure service continuity in the event of a network outage or device failure. Used to provide fault detection and correction procedures to maximize the availability of critical services and applications. High availability provides both hardware-specific and software-specific methods to ensure minimal downtime and ultimately improve the performance of your network. <i>See also</i> high availability mode, chassis cluster.
<b>high availability mode</b>	Ensures rapid system module recovery following a switchover. High availability mode uses an initial bulk file transfer and subsequent transaction-based mirroring. High availability mode also keeps state and dynamic configuration data from memory synchronized between the primary and standby modules. <i>Also known as</i> stateful switchover.
<b>High Speed Downlink Packet Access</b>	HSDPA. Enhanced 3G mobile communications protocol.

<b>high-density Ethernet</b>	Process by which a module allows oversubscription of Ethernet packets. The module manages oversubscription by prioritizing and dropping certain packets. <i>Also known as oversubscribed Ethernet.</i>
<b>high-density keepalive mode</b>	Mode whereby, when the keepalive timer expires, the interface first verifies whether any frames were received from the peer in the prior keepalive timeout interval. If so, the interface does not send an LCP echo request (keepalive). Keepalive packets are sent only if the peer is silent (if no traffic was received from the peer during the previous keepalive timeout interval). <i>Also known as smart keepalive. See also low-density keepalive mode.</i>
<b>High-Level Data Link Control</b>	HDLC. International Telecommunication Union (ITU) standard for a bit-oriented Data Link Layer protocol on which most other bit-oriented protocols are based. <i>Also known as High-Speed Data Link Control.</i>
<b>High-Speed Circuit Switched Data</b>	HSCSD. Circuit-switched wireless data transmission for mobile users, at data rates up to 38.4 Kbps.
<b>High-Speed Data Link Control</b>	HDLC. International Telecommunication Union (ITU) standard for a bit-oriented data-link layer protocol on which most other bit-oriented protocols are based. <i>Also known as High-Level Data Link Control.</i>
<b>high-speed serial interface</b>	HSSI. Interface that supports high-speed WAN switching services such as Frame Relay and Switched Multimegabit Data Service (SMDS) trunk encapsulation. You can configure an interface to act as data communications equipment (DCE) or data terminal equipment (DTE).
<b>histogram</b>	Vertical graph that represents different amounts by thin, color-coded bands or bars. These bars represent a frequency distribution; heights of the bars represent observed frequencies.
<b>HLR</b>	Home Location Register. Database containing information about a subscriber and the current location of a subscriber's Mobile Station.
<b>HMAC</b>	Hashed Message Authentication Code. Mechanism for message authentication that uses cryptographic hash functions. HMAC can be used with any iterative cryptographic hash function—for example, MD5 or SHA-1—in combination with a secret shared key. The cryptographic strength of HMAC depends on the properties of the underlying hash function. Defined in RFC 2104, <i>HMAC: Keyed-Hashing for Message Authentication</i> .
<b>HMAC MD5 authentication</b>	Method for IS-IS that prevents unauthorized routers from injecting false routing information into your network or forming adjacencies with your router. The router creates secure digests of the packets, encrypted according to the HMAC MD5 message-digest algorithms. The digests are inserted into the packets from which they are created. Depending on the commands you issue, the digests can be inserted into hello packets, link-state PDUs, complete sequence number PDUs, and partial sequence number PDUs. <i>Also known as MD5 authentication.</i>

<b>HOLB</b>	head-of-line blocking. When an ingress port sends traffic to multiple egress ports, congestion on one egress port can affect uncongested egress ports. For example, an ingress port sends traffic to two egress ports. One egress port experiences congestion and sends a message to the ingress port to stop sending traffic. The ingress port stops sending traffic and buffers it instead. However, the ingress port buffers all traffic, not just traffic destined for the congested port, so traffic destined for the uncongested port is also stopped because of HOLB.
<b>hold down</b>	Timer used by distance-vector protocols to prevent the propagation of incorrect routing knowledge to other routers in the network.
<b>hold time</b>	Maximum number of seconds allowed to elapse between successive keepalive or update messages that a BGP system receives from a peer. In OSPF, the maximum amount of time between instances of initiating Shortest Path First (SPF) computations.
<b>Home Location Register</b>	HLR. Database containing information about a subscriber and the current location of a subscriber's Mobile Station.
<b>hop count</b>	Number of routers that data packets must traverse between RIP networks. <i>See also</i> RIP metric.
<b>host</b>	In cloud computing, virtualized software whose hypervisor allows multiple guest VMs to run on it concurrently and share its resources.
<b>host bus adapter</b>	HBA. Physical mechanism that connects a host system to a server or storage devices.
<b>Host Checker</b>	A standards-based component that provides a wide variety of security checks for endpoints. Host Checker policies are configured on the IC Series device.
<b>host identifier</b>	Name defined by a security application using known host information such as IP address, MAC address, username, and hostname and used to assign an identifier to the host.
<b>host membership query</b>	Internet Group Management Protocol (IGMP) packet sent by a router to determine whether interested receivers exist on a broadcast network for multicast traffic.
<b>host membership report</b>	IGMP packet sent by an interested receiver for a particular multicast group address. Hosts send report messages when they first join a group or in response to a query packet from the local router.
<b>host module</b>	On an M160 router, provides the routing and system management functions of the router. Consists of the Routing Engine and Miscellaneous Control Subsystem (MCS).
<b>host subsystem</b>	Comprises a Routing Engine and an adjacent Control Board (CB), and provides the routing and system management functions of the router.



<b>host-specific configuration</b>	Configuration that takes place on a device for which you have created a host-specific autoinstallation configuration file ( <b>hostname.conf</b> ). The <b>hostname.conf</b> file contains all the information necessary for configuring the named host device. <i>See also</i> <b>hostname.conf</b> .
<b>hostname.conf</b>	Host-specific configuration file for autoinstallation on a device that contains all the information necessary for configuring the device. In the filename, <i>hostname</i> is replaced with the hostname that you are assigning to the device.
<b>hot content</b>	Media content that is often requested. Media Flow Controller caches content hierarchically according to how “hot” it is: short tail video (a few videos requested often by many clients) can be cached closer to the subscriber, while long tail video (videos seldom requested) can be kept deeper in the network.
<b>hot fix</b>	One or more files that update an operational E Series router. Hot fixes can do any of the following: address one or more specific, critical software issues by replacing or adding functionality to one or more software components; enable the delivery of software updates without having to load an entire software release; or deploy debugging code to collect data that facilitates troubleshooting of software issues.
<b>hot standby</b>	In Junos OS, method used with link services intelligent queuing interfaces (LSQ) to enable rapid switchover between primary and secondary (backup) PICs. <i>See also</i> warm standby.
<b>hot swap</b>	Disconnecting or connecting peripherals without interrupting system operations. Media Flow Controller supports hot swapping of caching storage drives.
<b>hot-insertable</b>	Used to describe a component that can be inserted into the chassis while the device is running.
<b>hot-pluggable</b>	Software or hardware component that can be installed or uninstalled while the software is running, as well as the software application that supports the installation and uninstallation of such components. Juniper Networks Service Automation is a hot-pluggable application.
<b>hot-removable</b>	Used to describe a component that can be removed from the chassis while the device is running.
<b>HRR</b>	hierarchical round-robin. Scheme for allocating bandwidth to queues in proportion to their weights.
<b>HRR scheduler</b>	One part of the integrated scheduler used to extend ATM QoS functionality on all E Series router ASIC-enabled line modules. <i>See also</i> SAR scheduler.
<b>HSCSD</b>	High-Speed Circuit Switched Data. Circuit-switched wireless data transmission for mobile users, at data rates up to 38.4 Kbps.
<b>HSDPA</b>	High Speed Downlink Packet Access. Enhanced 3G mobile communications protocol.
<b>HSSI</b>	high-speed serial interface. Interface that supports high-speed WAN switching services such as Frame Relay and Switched Multimegabit Data Service (SMDS) trunk encapsulation. You can configure an interface to act as data communications equipment (DCE) or data terminal equipment (DTE).

<b>HTTP</b>	Hypertext Transfer Protocol. Method used to publish and receive information on the Web, such as text and graphic files.
<b>HTTPS</b>	Hypertext Transfer Protocol over Secure Sockets Layer. Similar to HTTP with an added encryption layer that encrypts and decrypts user page requests and pages that are returned by a webserver. Used for secure communication, such as payment transactions.
<b>hub-and-spoke topology</b>	Sharing model in which one physical site acts as a hub (for example, Main Office), while other physical sites act as spokes. Spoke sites are connected to each other through a hub site. In a hub-and-spoke topology, the network communications between two spokes always travel through the hub.
<b>hub-and-spoke VPN</b>	Type of VPN in which spoke sites in the VPN can communicate only with the hub sites; they cannot communicate with other spoke sites. <i>See also</i> full-mesh VPN, overlapping VPN.
<b>hybrid access</b>	Coordinated and simultaneous use of two different access paths by a single subscriber. One path is through a fixed broadband (DSL) access network and the other path is through a wireless access network (LTE).
<b>hybrid access gateway</b>	HAG. Logical function in the operator network that implements the network-side mechanisms for simultaneous use of both fixed broadband and 3GPP access networks. The gateway enables subscriber management by aggregating a subscriber's traffic from the two networks.
<b>hybrid cloud</b>	A cloud type composed of two or more public and private clouds that remain unique but are bound together, providing the benefits of multiple deployment models. Hybrid clouds can be maintained by both internal and external providers. They require on-premises resources and offsite, remote, server-based cloud infrastructure.
<b>hybrid CPE</b>	hybrid customer premises equipment. Customer premises equipment (CPE) that has two WAN access interfaces for simultaneous support of both fixed broadband access and 3GPP-based wireless access.
<b>hybrid customer premises equipment</b>	hybrid CPE. Customer premises equipment (CPE) that has two WAN access interfaces for simultaneous support of both fixed broadband access and 3GPP-based wireless access.
<b>hybrid mode</b>	Mechanism used by the synchronous Ethernet equipment clock (EEC) on the Modular Port Concentrator (MPC) that derives the frequency from Synchronous Ethernet and the phase and time of day from PTP for time synchronization. Time synchronization includes both phase synchronization and frequency synchronization.
<b>Hypertext Transfer Protocol</b>	HTTP. Method used to publish and receive information on the Web, such as text and graphic files.
<b>Hypertext Transfer Protocol over Secure Sockets Layer</b>	HTTPS. Similar to HTTP with an added encryption layer that encrypts and decrypts user page requests and pages that are returned by a webserver. Used for secure communication, such as payment transactions.

## I

<b>hypervisor</b>	Software on a single physical host computer that creates and manages multiple guest virtual machines. Type 1 (bare-metal) hypervisors run directly on hardware with no host operating system and type 2 hypervisors run on top of a host operating system, such as Linux. <i>See also</i> virtual machine.
<b>I-DAS</b>	integrated DHCP access server. Feature that enables you to use RADIUS start and stop attributes to track user events such as the lifetime of an IP address.
<b>I-frame</b>	Information frame used to transfer data in sequentially numbered logical link control protocol data units (LPDUs) between link stations.
<b>I-SID</b>	24-bit service instance identifier field carried inside an I-TAG. The I-SID defines the service instance to which the frame is mapped.
<b>I-TAG</b>	Field defined in the IEEE 802.1ah provider MAC encapsulation header that carries the service instance information (I-SID) associated with the frame.
<b>I/O adapter</b>	IOA, input/output adapter. Physical interface that pairs with line modules to provide connectivity to E120 and E320 routers. <i>See also</i> I/O module.
<b>I/O Manager ASIC</b>	Juniper Networks ASIC responsible for segmenting data packets into 64-byte J-cells and for queuing result cells before transmission.
<b>I/O module</b>	<ul style="list-style-type: none"> <li>Physical interface that pairs with line modules to provide connectivity to an ERX router. <i>See also</i> IOA.</li> <li>In Juniper IDP Series, it contains the traffic interfaces that receive and send network traffic and is a field-replaceable unit (FRU).</li> </ul>
<b>I/O virtualization</b>	IOV. Virtualization of physical devices, such as network interface cards (NICs) and CPUs, that enables data transfer in a network. <i>See also</i> single-root I/O virtualization.
<b>IaaS</b>	Infrastructure as a Service. Physical or virtual cloud servers and other resources—such as switches, routers, firewalls, storage devices, load balancers, and other network equipment—that are leased to customers as needed. IaaS providers offer customers the ability to scale services up or down easily without having to make the capital investment in equipment and expertise. <i>See also</i> cloud computing, NaaS, PaaS, SaaS.
<b>IANA</b>	Internet Assigned Numbers Authority. Regulatory group that maintains all assigned and registered Internet numbers, such as IP and multicast addresses. <i>See also</i> NIC.
<b>IAPP</b>	Inter Access Point Protocol. IEEE 802.11F recommendation that describes optional extensions to IEEE 802.11, which defines wireless access-point communications among multivendor systems.
<b>IBGP</b>	Internal Border Gateway Protocol. BGP configuration in which sessions are established between routers in the same autonomous system (AS). <i>See also</i> EBGP.

<b>IBGP session</b>	Session between two BGP speakers that are in the same autonomous system (AS). IBGP requires that BGP speakers within an autonomous system be fully meshed, meaning that there must be a BGP session between each pair of peers within the AS. IBGP does not require that all the peers be physically connected. <i>See also</i> EBGp session.
<b>ICCP</b>	Inter-Chassis Control Protocol. Protocol that enables MC-LAG peers to exchange control information and coordinate with each other to ensure that data traffic is forwarded properly. <i>See also</i> MC-LAG.
<b>ICL</b>	interchassis control link. Link used to forward data traffic across MC-LAG peers. This link provides redundancy when a link failure (for example, an MC-LAG trunk failure) occurs on one of the active links. The ICL can be a single physical Ethernet interface or an aggregated Ethernet interface. <i>Also known as</i> interchassis link (ICL) or interchassis link-protection link (ICL-PL). <i>See also</i> MC-LAG.
<b>ICMP</b>	Internet Control Message Protocol. Network Layer protocol that provides a query and response system for a router or destination host to report an error in data traffic processing to the original source of the packet. Used in router discovery, ICMP allows router advertisements that enable a host to discover addresses of operating routers on the subnet. An ICMP echo request is also known as a ping.
<b>ICMP flood</b>	Type of denial-of-service attack that sends ICMP pings so large or so numerous that they overload a system with echo requests, causing the system to expend all its resources responding until it can no longer process valid network traffic. <i>Also known as</i> ping flood, smurf attack.
<b>ICMP Router Discovery Protocol</b>	IRDP. Used by DHCP clients that enables a host to determine the address of a router that it can use as a default gateway.
<b>IDE</b>	Integrated Drive Electronics. Type of hard disk on a Routing Engine.
<b>IDEA</b>	International Data Encryption Algorithm. One of the methods at the heart of Pretty Good Privacy (PGP), it uses a 128-bit key. IDEA is patented by Ascom Tech AG and is popular in Europe.
<b>IDI</b>	initial domain identifier. Part of an ATM address format that contains the address fields describing the address allocation and issuing authority.
<b>IDL</b>	interface definition language. Language-agnostic way of defining APIs. An IDL file contains interface and type library definitions. <i>Also known as</i> interface description language.
<b>Idle</b>	Initial BGP neighbor state in which the local router refuses all incoming session requests.
<b>IDP</b>	<ul style="list-style-type: none"> <li>initial domain part. Portion of a CLNS address that consists of the AFI and IDI. <i>See also</i> AFI, IDI.</li> <li>Intrusion Detection and Prevention. Name of a Juniper Networks product line of security devices that run the IDP OS (operating system).</li> </ul>

<b>IDS</b>	intrusion detection service. Inspects all inbound and outbound network activity and identifies suspicious patterns that might indicate a network or system attack from someone attempting to break into or compromise a system.
<b>IEC</b>	International Electrotechnical Commission. International standards organization that deals with electrical, electronic, and related technologies. <i>See</i> ISO.
<b>IEEE</b>	Institute of Electrical and Electronics Engineers. International professional society for electrical engineers.
<b>IEEE 802</b>	Set of standards that applies to the data link and physical layers of networks carrying frames of different sizes. In practice, IEEE 802 applies to LANs and metropolitan area networks (MANs). <i>See also</i> IEEE, LAN, MAN.
<b>IEEE 802.1p</b>	IEEE standard for a Layer 2 frame structure that supports VLAN identification and CoS traffic classification.
<b>IEEE 802.3af</b>	IEEE standard that defines a method for powering network devices through an Ethernet cable. This standard enables remote devices (such as VoIP telephones) to operate without a separate, external power source. <i>Also known as</i> Power over Ethernet (PoE).
<b>IETF</b>	Internet Engineering Task Force. International community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.
<b>IGMP</b>	Internet Group Management Protocol. Host-to-router signaling protocol for IPv4 to report multicast group memberships to neighboring routers and determine whether group members are present during IP multicasting. Similarly, multicast routers, such as E Series routers, use IGMP to discover which of their hosts belong to multicast groups and to determine whether group members are present.
<b>IGMP proxy</b>	Method by which a router issues IGMP host messages on behalf of hosts that the router discovered through standard IGMP interfaces. The router acts as a proxy for its hosts.
<b>IGP</b>	interior gateway protocol. Distributes routing information to routers within an autonomous system, such as IS-IS, OSPF, or RIP. <i>See also</i> EGP.

<b>IKE</b>	<p>Internet Key Exchange. Part of IPsec that provides ways to exchange keys for encryption and authentication securely over an unsecured medium such as the Internet. IKE enables a pair of security gateways to:</p> <ul style="list-style-type: none"> <li>• Dynamically establish a secure tunnel over which security gateways can exchange tunnel and key information.</li> <li>• Set up user-level tunnels or SAs, including tunnel attribute negotiations and key management. These tunnels can also be refreshed and terminated on top of the same secure channel.</li> </ul> <p>IKE employs Diffie-Hellman methods and is optional in IPsec (the shared keys can be entered manually at the endpoints).</p>
<b>IKE endpoint</b>	IP address of the entity that is one of two endpoints in an IKE/ISAKMP SA.
<b>IKE keepalive</b>	Method that recognizes the loss of the primary IPsec Internet Key Exchange (IKE) peer and establishes a secondary IPsec tunnel to a backup peer. It is a keepalive mechanism that enables the E Series router to detect when communication to a remote IPsec peer has been disconnected. DPD enables the router to reclaim resources and to optionally redirect traffic to an alternate failover destination. If DPD is not enabled, traffic continues to be sent to the unavailable destination. <i>Also known as</i> dead peer detection (DPD).
<b>IKE policies</b>	Policies that define a combination of security parameters to be used during the IKE SA negotiation. IKE policies are configured on both security gateway peers, and there must be at least one policy on the local peer that matches a policy on the remote peer. If that is not the case, the two peers are not able to successfully negotiate the IKE SA, and no data flow is possible.
<b>IKE proposal object</b>	In NSM, a representation of an IKE proposal, which is a set of encryption keys and authentication algorithms used to negotiate a VPN connection.
<b>iked</b>	IKE process that implements tunnel management for IPsec VPNs, provides authentication of endpoint entities, and generates keys for packet authentication and encryption.
<b>ILEC</b>	incumbent local exchange carrier. Any commercial telecom company that was in business after the breakup of AT&T in 1984 and before the Telecommunications Act of 1996.
<b>ILMI</b>	Integrated Local Management Interface. Specification developed by the ATM Forum that incorporates network management capabilities into the ATM user-to-network interface (UNI) and provides bidirectional exchange of management information between UNI management entities (UMEs).
<b>IMA</b>	inverse multiplexing for ATM. Technique for transporting ATM traffic over a bundle of T1 or E1 interfaces. A single data stream is divided into multiple concurrent streams that are transmitted at the same time across separate channels (such as T1 or E1 interfaces) and are then multiplexed back into the original data stream at the other end.

<b>image</b>	Single file that contains the contents of a computer's hard drive, including the operating system and software applications plus information such as partition details, boot sectors, and the file allocation table. <i>See also</i> reimage.
<b>IMAP</b>	Internet Message Access Protocol. Standard protocol for accessing e-mail on a remote server from a local client. IMAP is an Application Layer Internet protocol using the underlying Transport Layer protocols to establish host-to-host communication services for applications.
<b>IMEI</b>	International Mobile Station Equipment Identity. Unique code used to identify an individual Mobile Station to a GSM network.
<b>implicit shared shaper</b>	Type of shared shaper in which the system automatically selects the active constituents. A shared-shaping rate is configured on the best-effort node or queue, and QoS locates the other constituents automatically. <i>See also</i> explicit shared shaper, shared shaping.
<b>import</b>	Installation of routes from the routing protocols into a routing table.
<b>import map</b>	Route map applied to a VRF to modify and filter routes imported to the BGP RIB of the VRF from the global BGP VPN RIB in the parent VR. <i>See also</i> export map, global import map.
<b>import rules</b>	When you have two or more virtual routers on a security device, you can configure import rules on one virtual router that define which routes are allowed to be learned from another virtual router. If you do not configure any import rules for a virtual router, all routes that are exported to that virtual router are accepted. <i>See also</i> export rules.
<b>IMSI</b>	International Mobile Subscriber Identity. Information that identifies a particular subscriber to a GSM network.
<b>IMT-2000</b>	International Mobile Telecommunications-2000. Global standard for third-generation (3G) wireless communications, defined by a set of interdependent ITU Recommendations. IMT-2000 provides a framework for worldwide wireless access by linking the diverse systems of terrestrial and satellite-based networks.
<b>in-band change</b>	Change made to the device configuration from the Junos Space user interface. <i>See also</i> out-of-band change.
<b>in-device policy management</b>	In NSM, mode of policy management performed on a single device, using the NSM Device Editor. If this method is selected to manage a J Series or an SRX Series device, then the NSM Policy Manager, the Object Manager, and the VPN Manager are all disabled for that device.

<b>in-service software upgrade</b>	ISSU. General term for one of several different ways that Juniper Networks platforms upgrade software versions with minimal disruption to network traffic. Unified ISSU is used for routing platforms, which operate at Layer 2 and Layer 3. Nonstop software upgrade (NSSU) is used for switching platforms that operate at Layer 2 and Virtual Chassis configurations. Topology-independent in-service software upgrade (TISSU) is used for virtual environments, where devices are not linked by a hardware-based topology. <i>See also</i> NSSU, TISSU, and unified ISSU.
<b>inactive constituent</b>	Constituent that is ignored by the shared shaper mechanism. <i>See also</i> active constituent, constituent.
<b>InARP</b>	Inverse Address Resolution Protocol. Way of determining the IP address of the device at the far end of a circuit.
<b>inbound traffic (IPsec)</b>	In the context of a secure interface, already secured traffic arriving on that interface (identified based on its SPI). This traffic is cleared and checked against the security parameters set for that interface.
<b>incumbent local exchange carrier</b>	ILEC. Any commercial telecom company that was in business after the breakup of AT&T in 1984 and before the Telecommunications Act of 1996.
<b>independent control</b>	MPLS label distribution method whereby the LSR sending the label acts independently of its downstream peer. It does not wait for a label from the downstream LSR before it sends a label to peers. <i>See also</i> ordered control.
<b>inet.0</b>	Default Junos OS routing table for IPv4 unicast routers.
<b>inet.1</b>	Default Junos OS routing table for storing the multicast cache for active data streams in the network.
<b>inet.2</b>	Default Junos OS routing table for storing unicast IPv4 routes specifically used to prevent forwarding loops in a multicast network.
<b>inet.3</b>	Default Junos OS routing table for storing the egress IP address of an MPLS label-switched path.
<b>inet.4</b>	Default Junos OS routing table for storing information generated by the Multicast Source Discovery Protocol (MSDP).
<b>inet6.0</b>	Default Junos OS routing table for storing unicast IPv6 routes.
<b>infected host</b>	Compromised host systems to which network attackers have very likely gained unauthorized access.
<b>infinity metric</b>	Metric value used in distance-vector protocols to represent an unusable route. For RIP, the infinity metric is 16.
<b>Information Technology as a Service</b>	ITaaS. Operational model where the information technology (IT) service provider delivers an IT service to a firm. The IT service provider focuses on the needs and outcomes of the firm to assist in improving the overall health of the business.



<b>Infranet Controller</b>	Policy management component of a Juniper Networks UAC solution.
<b>Infranet Enforcer</b>	Policy enforcement point or firewall within a Juniper Networks UAC solution.
<b>Infrastructure as a Service</b>	IaaS. Physical or virtual cloud servers and other resources—such as switches, routers, firewalls, storage devices, load balancers, and other network equipment—that are leased to customers as needed. IaaS providers offer customers the ability to scale services up or down easily without having to make the capital investment in equipment and expertise. <i>See also</i> cloud computing, Network as a Service, Platform as a Service, Software as a Service.
<b>ingest</b>	Data that has been placed on a Media Flow Controller and analyzed and queued for deployment.
<b>ingress</b>	Inbound, referring to packets entering a device. <i>See also</i> egress.
<b>ingress router</b>	In MPLS, the first router in a label-switched path (LSP). <i>See also</i> egress router.
<b>Init</b>	OSPF adjacency state in which the local router has received a hello packet but bidirectional communication is not yet established.
<b>initial domain identifier</b>	IDI. Part of an ATM address format that contains the address fields describing the address allocation and issuing authority.
<b>initial domain port</b>	IDP. Portion of a CLNS address that consists of the AFI and IDI. <i>See also</i> AFI, IDI.
<b>input policy</b>	Policy that evaluates a condition before the normal route lookup. <i>See also</i> output policy, policy, secondary input policy.
<b>input/output adapter</b>	IOA, I/O adapter. Physical interface that pairs with line modules to provide connectivity to E120 and E320 routers. <i>Also known as</i> I/O module.
<b>input/output module</b>	I/O module. Physical interface that pairs with line modules to provide connectivity to E120 and E320 routers. <i>Also known as</i> I/O adapter.
<b>insert</b>	Junos OS command that allows a user to reorder terms in a routing policy or a firewall filter, or to change the order of a policy chain.
<b>inside global address</b>	In a NAT context, IP translated address of an inside host as seen by an outside host and network.
<b>inside local address</b>	In a NAT context, configured IP address that is assigned to a host on the inside network.
<b>inside network</b>	In a NAT context, the local portion of a network that uses private, not publicly routable, IP addresses that you want to translate.

<b>inside source translation</b>	Commonly used NAT configuration, in which an inside host sends a packet to the outside network and the NAT router translates the source information. Then, in the inbound direction, the NAT router restores the original information. For outbound traffic, the NAT router translates the inside local address into the inside global address.
<b>instance.inetflow.0</b>	Routing table that shows route flows through BGP.
<b>Institute of Electrical and Electronics Engineers</b>	IEEE. International professional society for electrical engineers.
<b>Integrated DHCP access server</b>	I-DAS. Feature that enables you to use RADIUS start and stop attributes to track user events such as the lifetime of an IP address.
<b>Integrated Drive Electronics</b>	IDE. Type of hard disk on a Routing Engine.
<b>Integrated IS-IS</b>	Extended version of IS-IS that supports the routing of datagrams by means of IP or CLNS. Without the extensions, IS-IS routes datagrams only by means of CLNS.
<b>Integrated Local Management Interface</b>	ILMI. Specification developed by the ATM Forum that incorporates network management capabilities into the ATM user-to-network interface (UNI) and provides bidirectional exchange of management information between UNI management entities (UMEs).
<b>integrated photonic line card</b>	IPLC. Integrated optical card that occupies a PIC or an FPC slot within the PTX3000 chassis. The PTX3000 supports an IPLC base module and an IPLC expansion module. The IPLC base module provides the combined functionalities of optical multiplexing and demultiplexing, optical amplification, optical equalization, and optical channel monitoring. The IPLC expansion module interfaces with the IPLC base module to increase the add/drop capacity of the system up to 64 channels.
<b>integrated routing and bridging</b>	IRB. Provides simultaneous support for Layer 2 (L2) bridging and Layer 3 (L3) routing within the same bridge domain. Packets arriving on an interface of the bridge domain are L2 switched or L3 routed based on the destination MAC address. Packets addressed to the router's MAC address are routed to other L3 interfaces.
<b>integrated scheduler</b>	QoS scheduler that provides extended ATM QoS functionality. The integrated scheduler consists of two schedulers in series—the hierarchical round robin (HRR) scheduler and the segmentation and reassembly (SAR) scheduler.
<b>Integrated Services Digital Network</b>	ISDN. Set of digital communications standards that enable the transmission of information over existing twisted-pair telephone lines at higher speeds than standard analog telephone service. An ISDN interface provides multiple B-channels (bearer channels) for data and one D-channel for control and signaling information. <i>See also</i> B-channel, D-channel.

<b>intelligent queuing</b>	IQ. M Series and T Series routing platform interfaces that offer granular quality-of-service (QoS) capabilities; extensive statistics on packets and bytes that are transmitted, received, or dropped; and embedded diagnostic tools.
<b>Inter Access Point Protocol</b>	IAPP. IEEE 802.11F recommendation that describes optional extensions to IEEE 802.11, which defines wireless access-point communications among multivendor systems.
<b>inter-AS routing</b>	Routing of packets among different autonomous systems (ASs). <i>See also</i> EBGp.
<b>inter-AS services</b>	Services that support VPNs across AS boundaries. <i>Also known as</i> interprovider services.
<b>Inter-Chassis Control Protocol</b>	ICCP. Protocol that enables MC-LAG peers to exchange control information and coordinate with each other to ensure that data traffic is forwarded properly. <i>See also</i> MC-LAG.
<b>interactive traffic</b>	Network traffic that indicates human involvement in a normally automated process, such as a user typing commands. It appears different from other traffic because one end of the connection is manually controlled. For example, in an automated process, TCP packets can be batched and sent in bulk. However, in a connection between a program and a user, packets are sent when they become available; characters display as they are typed (not after the word is complete). Interactive programs transmit several short IP packets containing individual keystrokes and their echoes, reflecting the real-time actions of a user (or attacker).
<b>interchassis control link</b>	ICL. Link used to forward data traffic across MC-LAG peers. This link provides redundancy when a link failure (for example, an MC-LAG trunk failure) occurs on one of the active links. The ICL can be a single physical Ethernet interface or an aggregated Ethernet interface. <i>Also known as</i> interchassis link (ICL) or interchassis link-protection link (ICL-PL). <i>See also</i> MC-LAG.
<b>intercluster reflection</b>	In a BGP route reflection, the redistribution of routing information by a route reflector system to all nonclient peers (BGP peers not in the cluster). <i>See also</i> route reflection.
<b>interface alarm</b>	Alarm triggered by the state of a physical link on a fixed or installed PIM, such as a link failure or a missing signal. Interface alarms are triggered by conditions on a T1 (DS1), Fast Ethernet, serial, or T3 (DS3) physical interface or by conditions on the sp-0/0/0 adaptive services interface for stateful firewall filter, NAT, IDP, or IPsec services. To enable an interface alarm, you must explicitly set an alarm condition.
<b>interface cost</b>	Value added to all received routes in a distance-vector network before they are placed into the routing table. Junos OS uses a cost of 1 for this value.
<b>interface definition language</b>	IDL. Language-agnostic way of defining APIs. An IDL file contains interface and type library definitions. <i>Also known as</i> interface description language.
<b>interface label space</b>	Configurable pool of labels from which multiple smaller pools (ranges) of labels can be created. Interfaces are configured to use labels only from a particular pool.

<b>interface preservation</b>	Addition to the SONET Automatic Protection Switching (APS) functionality that helps promote redundancy of the link PICs used in LSQ configurations. If the active SONET PIC fails, links from the standby PIC are used without causing a link renegotiation. <i>Also known as</i> link-state replication.
<b>interface routes</b>	Routes that are in the routing table because an interface has been configured with an IP address. <i>Also known as</i> direct routes.
<b>interface sampling</b>	Packet sampling method used by packet capture, in which entire IPv4 packets flowing in the input or output direction, or both directions, are captured for analysis.
<b>interface set</b>	A logical group of interfaces that describe the characteristics of a set of service VLANs, logical interfaces, or customer VLANs, including the members of the set and the name of the traffic control profiles. <i>See also</i> S-VLAN.
<b>interface specifier</b>	Label used in JunosE Software to identify both the physical location (such as chassis slot and port number) of a particular interface type on the router and the logical interface, such as a channelized T3 interface. Used in conjunction with an interface type to uniquely identify the interface on the router. <i>See also</i> interface type.
<b>interface type</b>	Label used in JunosE Software to identify the type of interface you are configuring on the router. For example, gigabitEthernet indicates a Gigabit Ethernet interface. Used in conjunction with an interface specifier to uniquely identify the interface on the router. <i>See also</i> interface specifier.
<b>interfaces</b>	Physical and logical channels on a router, switch, or security device that define how data is transmitted to and received from lower layers in the protocol stack. <i>See also</i> subinterface.
<b>interior gateway protocol</b>	IGP. Distributes routing information to routers within an autonomous system, such as IS-IS, OSPF, or RIP. <i>See also</i> EGP.
<b>intermediate system</b>	In IS-IS, the network entity that sends and receives packets and can also route packets. A router in OSI internetworking. <i>See also</i> ES.
<b>Intermediate System-to-Intermediate System</b>	IS-IS. Link-state, interior gateway routing protocol for IP networks that uses the shortest-path-first (SPF) algorithm to determine routes.
<b>Internal Border Gateway Protocol</b>	IBGP. BGP configuration in which sessions are established between routers in the same autonomous system (AS). <i>See also</i> EBGp.
<b>International Data Encryption Algorithm</b>	IDEA. One of the methods at the heart of Pretty Good Privacy (PGP), it uses a 128-bit key. IDEA is patented by Ascom Tech AG and is popular in Europe.
<b>International Electrotechnical Commission</b>	IEC. International standards organization that deals with electrical, electronic, and related technologies. <i>See</i> ISO.

<b>International Mobile Station Equipment Identity</b>	IMEI. Unique code used to identify an individual Mobile Station to a GSM network.
<b>International Mobile Subscriber Identity</b>	IMSI. Information that identifies a particular subscriber to a GSM network.
<b>International Mobile Telecommunications-2000</b>	IMT-2000. Global standard for third-generation (3G) wireless communications, defined by a set of interdependent ITU Recommendations. IMT-2000 provides a framework for worldwide wireless access by linking the diverse systems of terrestrial and satellite-based networks.
<b>International Organization for Standardization</b>	ISO. Worldwide federation of standards bodies that promotes international standardization and publishes international agreements as International Standards.
<b>International Special Committee on Radio Interference</b>	CISPR. An International Electrotechnical Commission (IEC) committee whose principal task is to prepare standards that offer protection of radio reception from interference sources at the higher end of the frequency range (from 9 kHz and above), such as electrical appliances of all types; the electricity supply system; industrial, scientific, and electromedical RF; broadcasting receivers (sound and TV); and IT equipment (ITE).
<b>International Telecommunication Union—Telecommunication Standardization</b>	ITU-T. Group supported by the United Nations that makes recommendations and coordinates the development of telecommunications standards for the entire world. Formerly known as the CCITT.
<b>International Telegraph and Telephone Consultative Committee</b>	Now known as ITU-T (Telecommunication Standardization Sector), or CCITT, organization that coordinates standards for telecommunication on behalf of the ITU (International Telecommunication Union). The ITU is a United Nations specialized agency. ITU-T is a subcommittee of ITU. <i>See also</i> ITU-T.
<b>Internet Assigned Numbers Authority</b>	IANA. Regulatory group that maintains all assigned and registered Internet numbers, such as IP and multicast addresses. <i>See also</i> NIC.
<b>Internet Control Message Protocol</b>	ICMP. Network Layer protocol that provides a query and response system for a router or destination host to report an error in data traffic processing to the original source of the packet. Used in router discovery, ICMP allows router advertisements that enable a host to discover addresses of operating routers on the subnet. An ICMP echo request is also known as a ping.
<b>Internet Engineering Task Force</b>	IETF. International community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.
<b>Internet Group Management Protocol</b>	IGMP. Host-to-router signaling protocol for IPv4 to report multicast group memberships to neighboring routers and determine whether group members are present during IP multicasting. Similarly, multicast routers, such as E Series routers, use IGMP to discover which of their hosts belong to multicast groups and to determine whether group members are present.

<b>Internet Key Exchange</b>	<p>IKE. Part of IPsec that provides ways to exchange keys for encryption and authentication securely over an unsecured medium such as the Internet. IKE enables a pair of security gateways to:</p> <ul style="list-style-type: none"> <li>• Dynamically establish a secure tunnel over which security gateways can exchange tunnel and key information.</li> <li>• Set up user-level tunnels or SAs, including tunnel attribute negotiations and key management. These tunnels can also be refreshed and terminated on top of the same secure channel.</li> </ul> <p>IKE employs Diffie-Hellman methods and is optional in IPsec (the shared keys can be entered manually at the endpoints).</p>
<b>Internet Message Access Protocol</b>	<p>IMAP. Standard protocol for accessing e-mail on a remote server from a local client. IMAP is an Application Layer Internet protocol using the underlying Transport Layer protocols to establish host-to-host communication services for applications.</p>
<b>Internet Processor ASIC</b>	<p>Juniper Networks ASIC responsible for using the forwarding table to make routing decisions within the Packet Forwarding Engine. The Internet Processor ASIC also implements firewall filters.</p>
<b>Internet Protocol</b>	<p>IP. Used for sending data from one point to another on the Internet, it provides the functions necessary to deliver blocks of data (datagrams) from a source to a destination over an interconnected system of networks, where sources and destinations are identified by fixed length addresses. <i>See also</i> IP address, IPv6.</p>
<b>Internet Protocol Control Protocol</b>	<p>IPCP. Establishes and configures IP over the Point-to-Point Protocol (PPP).</p>
<b>Internet Protocol over Asynchronous Transfer Mode</b>	<p>IPoA. Interface stacking configuration supported on E Series routers. An IPoA interface is IP over ATM 1483 over ATM AAL5 over ATM.</p>
<b>Internet Protocol Security</b>	<p>IPsec. Provides security to IP flows through the use of authentication and encryption:</p> <ul style="list-style-type: none"> <li>• Authentication verifies that data is not altered during transmission and ensures that users are communicating with the individual or organization that they believe they are communicating with.</li> <li>• Encryption makes data confidential by making it unreadable to everyone except the sender and intended recipient.</li> </ul> <p>The secure aspects of IPsec are usually implemented in three parts: the authentication header (AH), the Encapsulating Security Payload (ESP), and the Internet Key Exchange (IKE).</p>
<b>Internet Protocol version 4</b>	<p>IPv4. Network Layer (Layer 3) connectionless protocol for the routing of datagrams through gateways connecting networks and subnetworks. It is used on packet switched internetworks, for example, Ethernet.</p>

<b>Internet Protocol version 6</b>	IPv6. IPv6 is the next planned version of the IP address system, to eventually supersede IP version 4 (IPv4). While IPv4 uses 32-bit addresses, IPv6 uses 128-bit addresses, which increases the number of possible addresses exponentially. For example, IPv4 allows 4,294,967,296 addresses to be used ( $2^{32}$ ). IPv6 allows for over 340,000,000,000,000,000,000,000,000,000,000,000,000,000,000 IP addresses. It can be installed as a normal software upgrade in Internet devices and is interoperable with the current IPv4. <i>Also known as IPng (for IP next generation). See also IP address.</i>
<b>Internet Security Association and Key Management Protocol</b>	ISAKMP. Allows the receiver of a message to obtain a public key and use digital certificates to authenticate the sender's identity. ISAKMP is key exchange independent; that is, it supports many different key exchanges. <i>See also IKE, Oakley.</i>
<b>Internet service provider</b>	ISP. Company that provides access to the Internet and related services.
<b>Internet-based Over-the-Air</b>	IOTA. Activation method used by cellular network providers such as Sprint for CDMA EV-DO 3G wireless modem cards. <i>See also OTASP.</i>
<b>interprovider services</b>	Services that support VPNs across AS boundaries. <i>Also known as inter-AS services.</i>
<b>interprovider VPN</b>	VPN that provides connectivity between separate autonomous systems (ASs) with separate border edge routers. It is used by VPN customers who have connections to several different ISPs, or different connections to the same ISP in different geographic regions, each of which has a different AS.
<b>intra-AS routing</b>	Routing of packets within a single autonomous system (AS). <i>See also IBGP.</i>
<b>Intrusion Detection and Prevention</b>	IDP. Name of a Juniper Networks product line of security devices that run the IDP OS (operating system).
<b>intrusion detection service</b>	IDS. Inspects all inbound and outbound network activity and identifies suspicious patterns that might indicate a network or system attack from someone attempting to break into or compromise a system.
<b>intrusion prevention system</b>	IPS. Security technology that monitors network traffic flows for malicious activity. When a threat is identified, it is logged and prevented.
<b>Inverse Address Resolution Protocol</b>	InARP. Way of determining the IP address of the device at the far end of a circuit.
<b>inverse multiplexing for ATM</b>	IMA. Technique for transporting ATM traffic over a bundle of T1 or E1 interfaces. A single data stream is divided into multiple concurrent streams that are transmitted at the same time across separate channels (such as T1 or E1 interfaces) and are then multiplexed back into the original data stream at the other end.
<b>IOA</b>	input/output adapter, I/O adapter. Physical interface that pairs with line modules to provide connectivity to E120 and E320 routers. <i>See also I/O module.</i>
<b>IOTA</b>	Internet-based Over-the-Air. Activation method used by cellular network providers such as Sprint for CDMA EV-DO 3G wireless modem cards. <i>See also OTASP.</i>

<b>IOV</b>	I/O virtualization. Virtualization of physical devices, such as network interface cards (NICs) and CPUs, that enables data transfer in a network. <i>See also</i> single-root I/O virtualization.
<b>IP</b>	Internet Protocol. Used for sending data from one point to another on the Internet, it provides the functions necessary to deliver blocks of data (datagrams) from a source to a destination over an interconnected system of networks, where sources and destinations are identified by fixed length addresses. <i>See also</i> IP address, IPv4, IPv6.
<b>IP address</b>	Unique decimal dot format address that devices use to identify and communicate with each other across a network. IPv4 uses 32-bit (4 byte) addresses in a dotted-decimal notation (for example, 198.51.100.0). IPv6 uses 128-bit addresses in a hexadecimal notation of eight 16-bit components separated by colons (for example, 2001:db8:ffff:ffff:ffff:ffff:ffff:ffff). An IP address is also used to filter traffic and determine whether to allow or deny traffic. <i>See also</i> IPv4, IPv6.
<b>IP address classes</b>	Four classes that lend themselves to different network configurations, depending on the desired ratio of networks to hosts: <ul style="list-style-type: none"> <li>• Class A—The leading bit is set to 0, a 7-bit number, and a 24-bit local host address. Up to 125 class A networks can be defined, with up to 16,777,214 hosts per network.</li> <li>• Class B—The two highest-order bits are set to 1 and 0, a 14-bit network number, and a 16-bit local host address. Up to 16,382 class B networks can be defined, with up to 65,534 hosts per network.</li> <li>• Class C—The three leading bits are set to 1, 1, and 0, a 21-bit network number, and an 8-bit local host address. Up to 2,097,152 class C networks can be defined, with up to 254 hosts per network.</li> <li>• Class D—The four highest-order bits are set to 1, 1, 1, and 0. Class D is used as a multicast address.</li> </ul>
<b>IP address pool</b>	Collection of IP addresses maintained by the DHCP server for assignment to DHCP clients and associated with a subnet on either a logical or physical interface.
<b>IP Control Protocol</b>	IPCP. Establishes and configures IP over the Point-to-Point Protocol (PPP).
<b>IP defragmentation and TCP reassembly</b>	Method of reducing false positives, it reconstructs fragmented traffic. <i>See also</i> TCP/IP.
<b>IP Delivery Delay Detection Protocol</b>	IP-3DP. Protocol for providing time-based antireplay protection in multicast or group IPsec environments. Because multisender security associations (SAs) are involved in these environments, you cannot rely on the use of sequence numbers as a basis for replay protection. IP-3DP uses a timestamp mechanism to declare the age of an IP datagram, enabling receivers to make a judgment about whether to accept an IP datagram as <i>fresh</i> . RFC 4949 defines a <i>fresh</i> datagram as "Recently generated; not replayed from some earlier interaction of the protocol."
<b>IP filter feed list</b>	List of feed-based IP objects to be used in security policies to either deny or allow traffic based on either source or destination IP criteria.



<b>IP gateway</b>	IP gateway is a program or a special-purpose device (node or router) that transfers IP datagrams from one network to another until the final destination is reached.
<b>IP multicast</b>	Internet transmission method that enables a device to send packets to a group of hosts, rather than to a list of individual hosts. Routers use multicast routing algorithms to determine the best route and transmit datagrams throughout the network.
<b>IP pool object</b>	IP pool object represents a range of IP addresses. Use IP pool objects to configure DHCP servers for your managed devices.
<b>IP reassembly</b>	Method of encapsulating and de-encapsulating packets as they enter and leave a tunnel.
<b>IP Security</b>	<p>IPsec. Provides security to IP flows through the use of authentication and encryption:</p> <ul style="list-style-type: none"> <li>• Authentication verifies that data is not altered during transmission and ensures that users are communicating with the individual or organization that they believe they are communicating with.</li> <li>• Encryption makes data confidential by making it unreadable to everyone except the sender and intended recipient.</li> </ul> <p>The secure aspects of IPsec are usually implemented in three parts: the authentication header (AH), the Encapsulating Security Payload (ESP), and the Internet Key Exchange (IKE).</p>
<b>IP spoofing</b>	Mimicking the source address of an IP packet. Every IP packet includes the destination address (where the packet is going) and the source address (where the packet came from). The routers that provide Internet communication between distant computers determine the best route for the IP packet using only the destination address and typically ignore the source address. An attacker can fake the source address of a malicious IP packet by modifying the packet headers so that the packet appears to come from a trusted system.
<b>IP sweep</b>	Denial-of-service attack in which attackers send ICMP echo requests (or pings) to different destination addresses and wait for replies that indicate the IP address of a target. If a remote host pings 10 addresses in 0.3 seconds, the security device flags the event as an IP sweep attack and drops the connection to prevent replies. An IP sweep is similar to a port scan attack.
<b>IP television</b>	IPTV. System using the Internet Protocol to deliver digital television service over a network.
<b>IP tracking</b>	Method of monitoring configured IP addresses to see if they respond to ping or ARP requests. You can configure IP tracking with NSRP to determine device or VSD group failover, or to determine if the interface is up or down.
<b>IP tunnels</b>	Secure method of transporting datagrams between routers separated by networks that do not support all the protocols that those routers support. To configure an IP tunnel, you must first configure a TSM interface.

<b>IP version 4</b>	Internet Protocol version 4, IPv4. Network Layer (Layer 3) connectionless protocol for the routing of datagrams through gateways connecting networks and subnetworks. It is used on packet switched internetworks, for example, Ethernet.
<b>IP version 6</b>	Internet Protocol version 6, IPv6. IPv6 is the next planned version of the IP address system, to eventually supersede IP version 4 (IPv4). While IPv4 uses 32-bit addresses, IPv6 uses 128-bit addresses, which increases the number of possible addresses exponentially. For example, IPv4 allows 4,294,967,296 addresses to be used ( $2^{32}$ ). IPv6 allows for over 340,000,000,000,000,000,000,000,000,000,000,000,000,000 IP addresses. It can be installed as a normal software upgrade in Internet devices and is interoperable with the current IPv4. <i>Also known as</i> IPng (for IP next generation). <i>See also</i> IP address.
<b>IP-3DP</b>	IP Delivery Delay Detection Protocol. Protocol for providing time-based antireplay protection in multicast or group IPsec environments. Because multisender security associations (SAs) are involved in these environments, you cannot rely on the use of sequence numbers as a basis for replay protection. IP-3DP uses a timestamp mechanism to declare the age of an IP datagram, enabling receivers to make a judgment about whether to accept an IP datagram as <i>fresh</i> . RFC 4949 defines a <i>fresh</i> datagram as "Recently generated; not replayed from some earlier interaction of the protocol."
<b>IP/MPLSView</b>	Network planning solution that provides concise and in-depth views of a router network in a graphic format. <i>Also known as</i> WANDL.
<b>IPCP</b>	Internet Protocol Control Protocol. Establishes and configures IP over the Point-to-Point Protocol (PPP).
<b>IPLC</b>	integrated photonic line card. Integrated optical card that occupies a PIC or an FPC slot within the PTX3000 chassis. The PTX3000 supports an IPLC base module and an IPLC expansion module. The IPLC base module provides the combined functionalities of optical multiplexing and demultiplexing, optical amplification, optical equalization, and optical channel monitoring. The IPLC expansion module interfaces with the IPLC base module to increase the add/drop capacity of the system up to 64 channels.
<b>IPoA</b>	Internet Protocol over Asynchronous Transfer Mode. Interface stacking configuration supported on E Series routers. An IPoA interface is IP over ATM 1483 over ATM AAL5 over ATM.
<b>IPS</b>	intrusion prevention system. Security technology that monitors network traffic flows for malicious activity. When a threat is identified, it is logged and prevented.
<b>IPsec</b>	<p>Internet Protocol Security. Provides security to IP flows through the use of authentication and encryption:</p> <ul style="list-style-type: none"> <li>• Authentication verifies that data is not altered during transmission and ensures that users are communicating with the individual or organization that they believe they are communicating with.</li> <li>• Encryption makes data confidential by making it unreadable to everyone except the sender and intended recipient.</li> </ul> <p>The secure aspects of IPsec are usually implemented in three parts: the authentication header (AH), the Encapsulating Security Payload (ESP), and the Internet Key Exchange (IKE).</p>

<b>IPsec endpoint</b>	The IP address of the beginning or ending entity of the pair that mark the endpoints of an IPsec security association (SA).
<b>IPsec service module</b>	ISM. Line module that receives data from and transmits data to line modules that have ingress and egress ports. Does not pair with a corresponding I/O module that provides ingress and egress ports.
<b>IPsec VPN</b>	IPsec virtual private network (VPN). Provides a means of secure communication among remote computers across a public WAN such as the Internet and enables remote users to connect to private computer networks to gain access to their resources in a secure way.
<b>IPTV</b>	IP television. System using the Internet Protocol to deliver digital television service over a network.
<b>IPv4</b>	Internet Protocol version 4. Network Layer (Layer 3) connectionless protocol for the routing of datagrams through gateways connecting networks and subnetworks. It is used on packet switched internetworks, for example, Ethernet.
<b>IPv6</b>	Internet Protocol version 6. IPv6 is the next planned version of the IP address system, to eventually supersede IP version 4 (IPv4). While IPv4 uses 32-bit addresses, IPv6 uses 128-bit addresses, which increases the number of possible addresses exponentially. For example, IPv4 allows 4,294,967,296 addresses to be used ( $2^{32}$ ). IPv6 allows for over 340,000,000,000,000,000,000,000,000,000,000,000,000,000,000 IP addresses. It can be installed as a normal software upgrade in Internet devices and is interoperable with the current IPv4. <i>Also known as</i> IPng (for IP next generation). <i>See also</i> IP address.
<b>IPv6 rapid development</b>	6rd. Mechanism to transmit IPv6 packets to and from an IPv6 end user over an Internet service provider (ISP) IPv4 network that lies between the end user and an IPv6 network (generally the IPv6 Internet). There is no need to configure explicit tunnels.
<b>IPv6 to IPv4</b>	6to4. Internet transition mechanism for migrating from IPv4 to IPv6, a system that allows IPv6 packets to be transmitted over an IPv4 network (generally the IPv4 Internet) without the need to configure explicit tunnels.
<b>IQ</b>	intelligent queuing. M Series and T Series routing platform interfaces that offer granular quality-of-service (QoS) capabilities; extensive statistics on packets and bytes that are transmitted, received, or dropped; and embedded diagnostic tools.
<b>IRB</b>	integrated routing and bridging. Provides simultaneous support for Layer 2 (L2) bridging and Layer 3 (L3) routing within the same bridge domain. Packets arriving on an interface of the bridge domain are L2 switched or L3 routed based on the destination MAC address. Packets addressed to the router's MAC address are routed to other L3 interfaces.
<b>IRDP</b>	ICMP Router Discovery Protocol. Used by DHCP clients that enables a host to determine the address of a router that it can use as a default gateway.

<b>IS-IS</b>	Intermediate System-to-Intermediate System. Link-state, interior gateway routing protocol for IP networks that uses the shortest-path-first (SPF) algorithm to determine routes.
<b>ISAKMP</b>	Internet Security Association and Key Management Protocol. Allows the receiver of a message to obtain a public key and use digital certificates to authenticate the sender's identity. ISAKMP is key exchange independent; that is, it supports many different key exchanges. <i>See also</i> IKE, Oakley.
<b>ISDN</b>	Integrated Services Digital Network. Set of digital communications standards that enable the transmission of information over existing twisted-pair telephone lines at higher speeds than standard analog telephone service. An ISDN interface provides multiple B-channels (bearer channels) for data and one D-channel for control and signaling information. <i>See also</i> B-channel, D-channel.
<b>ISDN BRI</b>	ISDN Basic Rate Interface. ISDN interface intended for home and small enterprise applications, it consists of two 64-Kbps B-channels to carry voice or data, and one 16-Kbps D-channel for control and signaling. <i>See also</i> B-channel, D-channel.
<b>ISM</b>	IPsec service module. Receives data from and transmits data to line modules that have ingress and egress ports. Does not pair with a corresponding I/O module that provides ingress and egress ports.
<b>ISO</b>	International Organization for Standardization. Worldwide federation of standards bodies that promotes international standardization and publishes international agreements as International Standards.
<b>ISO address</b>	Network connection identified with a hierarchical network address, specifying the point at which network services are made available to a Transport Layer entity in the OSI Reference Model. A valid NSAP address is unique and unambiguously identifies a single system. <i>Also known as</i> network service access point (NSAP).
<b>ISP</b>	Internet service provider. Company that provides access to the Internet and related services.
<b>ISSU</b>	in-service software upgrade. General term for one of several different ways that Juniper Networks platforms upgrade software versions with minimal disruption to network traffic. Unified ISSU is used for routing platforms, which operate at Layer 2 and Layer 3. Nonstop software upgrade (NSSU) is used for switching platforms that operate at Layer 2 and Virtual Chassis configurations. Topology-independent in-service software upgrade (TISSU) is used for virtual environments, where devices are not linked by a hardware-based topology. <i>See also</i> NSSU, TISSU, and unified ISSU.
<b>IT power system</b>	In an IT power system, the distribution system has no connection to earth or has only a high impedance connection. In such systems, an insulation monitoring device is used to monitor the impedance.
<b>ITaaS</b>	Information Technology as a Service. Operational model where the information technology (IT) service provider delivers an IT service to a firm. The IT service provider focuses on the needs and outcomes of the firm to assist in improving the overall health of the business.

<b>iterative DNS query</b>	Query in which a DNS server, if it cannot resolve a query itself, provides the client with a referral containing the name and IP address of the DNS server that is closest to the requested domain name. The client then queries the referred server. This process of referrals and queries continues until the query is resolved, an error is encountered, or the session times out. <i>See also</i> recursive DNS query.
<b>ITU-T</b>	International Telecommunication Union—Telecommunication Standardization (formerly known as the CCITT). Group supported by the United Nations that makes recommendations and coordinates the development of telecommunications standards for the world.
<b>ITU-T G.991.2</b>	International standard recommendation that describes a data transmission method for SHDSL for data transport in telecommunications access networks. The standard also describes the functionality required for interoperability of equipment from various manufacturers.
<b>ITU-T G.992.1</b>	International standard recommendation that describes ADSL. Annex A defines how ADSL works over twisted-pair copper (POTS) lines. Annex B defines how ADSL works over ISDN lines.
<b>ITU-T G.993.2</b>	International standard recommendation that describes a data transmission method for VDSL2 transceivers.
<b>ITU-T G.994.1</b>	International standard recommendation that describes the types of signals, messages, and procedures exchanged between DSL equipment when the operational modes of equipment need to be automatically established and selected.
<b>ITU-T G.997.1</b>	International standard recommendation that describes the Physical Layer management for ADSL transmission systems, including the means of communication on a transport transmission channel defined in the Physical Layer recommendations. The standard also describes the content and syntax of network elements for configuration, fault management, and performance management.
<b>ITU-T H.248</b>	International standard recommendation that describes communication between a gateway controller and a media gateway.
<b>ITU-T H.323</b>	International standard recommendation that describes packet-based multimedia communications over networks that do not guarantee class of service, such as IP networks, providing a widely used standard for VoIP and conferencing that is modeled on ISDN PRI. It is implemented as an Application Layer Gateway (ALG) that provides secure VoIP communication between terminal hosts, such as IP phones and multimedia devices, in which the gatekeeper devices manage call registration, admission, and call status for VoIP calls. The gatekeepers can reside in the two different zones, or in the same zone. <i>Also known as</i> H.323.

## J

<b>J-cell</b>	64-byte data unit used within the Packet Forwarding Engine. All IP packets processed by a Juniper Networks router are segmented into J-cells.
<b>J-Flow</b>	Method of collecting IP traffic flow statistics from routing devices. J-Flow does not require any special protocol for connection setup, and does not require any external changes to networked traffic, packets, or any other devices in the network. <i>Also known as</i> NetFlow.

<b>J-Web</b>	Graphical Web browser interface to Junos OS on routing platforms. With the J-Web interface, you can monitor, configure, diagnose, and manage the routing platform from a PC or laptop that has Hypertext Transfer Protocol (HTTP) or HTTP over Secure Sockets Layer (HTTPS) enabled.
<b>Java Database Connectivity</b>	JDBC. API that provides a standard means of database-independent connectivity between the Java platform and a wide range of databases.
<b>Java extension</b>	Java extensions can increase (or extend) the capabilities of AppRules. An AppRules rule (or a RuleBuilder rule) can invoke a Java extension to process a request or response, and the Java run-time environment provides a much more powerful set of programming language tools and libraries than AppRules does alone.
<b>JavaScript Object Notation</b>	JSON. Open-standard file format that uses human-readable text to transmit data objects consisting of attribute-value pairs and array data types.
<b>jbase</b>	Junos OS package containing updates to the kernel.
<b>jbundle</b>	Junos OS package containing all possible software package files.
<b>JCP</b>	Junos Control Plane. Virtual machine that implements Layer 2 and Layer 3 protocols and features. JCP is platform independent and platform agnostic.
<b>JCS</b>	Juniper Control System. OEM blade server customized to work with Juniper Networks routers. The JCS chassis holds up to 12 single Routing Engines (or 6 redundant Routing Engine pairs). The JCS 1200 chassis enables the control plane and forwarding plane of a single interconnected platform to be scaled independently.
<b>JCS management module (MM)</b>	Chassis management hardware and software used to access and configure the Juniper Control System (JCS) platform.
<b>JCS switch module</b>	Hardware device that connects Routing Engines in the Juniper Control System (JCS) chassis to a Juniper Networks router and controls traffic between the two devices. For redundancy, the JCS chassis can include two JCS switch modules.
<b>JDBC</b>	Java Database Connectivity. API that provides a standard means of database-independent connectivity between the Java platform and a wide range of databases.
<b>JDM</b>	Juniper Device Manager. Linux Container module that primarily manages and monitors virtual components in a Juniper Networks platform running disaggregated Junos OS. In Junos node slicing, for example, JDM manages the life cycle of guest network function (GNF) VMs. In the Contrail system, JDM is the configuration node process (daemon) that is used to manage physical devices. <i>See also</i> Linux Container, GNF.
<b>jdocs</b>	Junos OS package containing the documentation set.

<b>JET</b>	Juniper Extension Toolkit. Provides access to a set of high-speed APIs for programmers to change configurations and to retrieve state information from control and management plane services. All Junos OS processes (daemons) provide API access through JET.
<b>JETHandler</b>	Junos JET API that provides easy methods to connect to the JET request response and notification servers and to access all the JET services.
<b>JIMS</b>	Juniper Identity Management Service. Standalone Windows service application that collects and maintains a large database of user, device, and group information from Active Directory domains, enabling SRX Series firewalls to rapidly identify thousands of users in a large, distributed enterprise. SRX Series Services Gateways can create, manage, and refine firewall rules that are based on user identity rather than IP address, query the Juniper Identity Management Service, obtain the proper user identity information, and then enforce the appropriate security policy decisions to permit or deny access to protected corporate resources and the Internet.
<b>jitter</b>	Small random variation introduced into the value of a timer to prevent multiple timer expirations from becoming synchronized. In real-time applications such as VoIP and video, variation in the rate at which packets in a stream are received that can cause quality degradation. <i>Also known as</i> packet delay variation. <i>See also</i> jitter target.
<b>jitter target</b>	Target value defined to specify the variation in data flow between two systems. This variation is often caused by network congestion that results in problems with real-time communications such as VoIP and video conferencing. <i>See also</i> jitter.
<b>kernel</b>	Junos OS package containing the basic components of the software.
<b>JMB</b>	Juniper Message Bundle. Used in Service Now, a JMB is an XML-based information envelope that consists of two sections; manifest and payload. The manifest is the header of the JMB that carries information such as Problem Description, Synopsis, Priority, Severity, and Device Name. Payload carries specific information such as logs, command outputs, and configuration file. Incident JMBs have different data elements in the payload depending on the problem type. Intelligence JMBs always have the same structure and data elements to ensure consistency and processing for proactive analysis.
<b>jnx-ai-manager.mib</b>	MIB file that defines the traps sent by Service Automation to a remote network management system or an SNMP server.
<b>Job Manager</b>	Module of the NSM user interface that tracks the status of major administrative tasks, such as importing or updating a device, as commands travel to the device and back to the management server.
<b>join message</b>	PIM message sent hop by hop upstream toward a multicast source or the RP of the domain. It requests that multicast traffic be sent downstream to the router originating the message.
<b>jpfe</b>	Junos OS package containing the embedded OS software for operating the Packet Forwarding Engine.

<b>jroute</b>	Junos OS package containing the software used by the Routing Engine.
<b>JSF</b>	Juniper Services Framework.
<b>JSON</b>	JavaScript Object Notation. Open-standard file format that uses human-readable text to transmit data objects consisting of attribute-value pairs and array data types.
<b>JSRP</b>	Junos Services Redundancy Protocol. A process that controls chassis clustering of Junos OS devices.
<b>JTI</b>	Junos telemetry interface. Highly scalable distributed telemetry collection engine that is designed to help network operators stream statistics and event states. <i>See also</i> telemetry.
<b>Juju</b>	Open-source modeling tool for operating software in the cloud.
<b>jump host</b>	In Contrail Cloud and TripleO (Openstack on Openstack) deployments, the server that hosts the undercloud. The jump host acts as the entry point between the overcloud and the undercloud and also hosts automation components, including Ansible scripts and YAML configuration files.
<b>Juniper Control System</b>	JCS. OEM blade server customized to work with Juniper Networks routers. The JCS chassis holds up to 12 single Routing Engines (or 6 redundant Routing Engine pairs). The JCS 1200 chassis enables the control plane and forwarding plane of a single interconnected platform to be scaled independently.
<b>Juniper Device Manager</b>	JDM. Linux Container module that primarily manages and monitors virtual components in a Juniper Networks platform running disaggregated Junos OS. In Junos node slicing, for example, JDM manages the life cycle of guest network function (GNF) VMs. In the Contrail system, JDM is the configuration node process (daemon) that is used to manage physical devices. <i>See also</i> Linux Container, guest network function.
<b>Juniper Extension Toolkit</b>	JET. Provides access to a set of high-speed APIs for programmers to change configurations and to retrieve state information from control and management plane services. All Junos OS processes (daemons) provide API access through JET.
<b>Juniper Identity Management Service</b>	JIMS. Standalone Windows service application that collects and maintains a large database of user, device, and group information from Active Directory domains, enabling SRX Series firewalls to rapidly identify thousands of users in a large, distributed enterprise. SRX Series Services Gateways can create, manage, and refine firewall rules that are based on user identity rather than IP address, query the Juniper Identity Management Service, obtain the proper user identity information, and then enforce the appropriate security policy decisions to permit or deny access to protected corporate resources and the Internet.



<b>Juniper Message Bundle</b>	JMB. Used in ServiceNow, a JMB is an XML-based information envelope that consists of two sections; manifest and payload. The manifest is the header of the JMB that carries information such as Problem Description, Synopsis, Priority, Severity, and Device Name. Payload carries specific information such as logs, command outputs, and configuration file. Incident JMBs have different data elements in the payload depending on the problem type. Intelligence JMBs always have the same structure and data elements to ensure consistency and processing for proactive analysis.
<b>Junos Continuity software</b>	Optional software package that enables a router to support new hardware without the need to upgrade Junos OS. By installing Junos Continuity software, you can perform a chassis upgrade without having to restart the router, which enables faster deployment of new hardware and eliminates the time required for software requalification that is required when you upgrade Junos OS. You can install the Junos Continuity software package as a standalone package or as a package bundled with Junos OS.
<b>Junos Control Plane</b>	JCP. Virtual machine that implements Layer 2 and Layer 3 protocols and features. JCP is platform independent and platform agnostic.
<b>Junos fusion</b>	Method of significantly expanding the number of available network interfaces on a device—an <i>aggregation device</i> —by allowing the aggregation device to add interfaces through interconnections with <i>satellite devices</i> . The entire system—the interconnected aggregation device and satellite devices—is called a Junos fusion. A Junos fusion simplifies network administration because it appears to the larger network as a single, port-dense device that is managed using one IP address. <i>See also</i> aggregation device, satellite device.
<b>Junos fusion for data center</b>	A Junos fusion that uses a QFX10000 switch in the aggregation device role and is intended for installation in data centers. <i>See also</i> aggregation device, Junos fusion.
<b>Junos fusion for enterprise</b>	A Junos fusion that uses an EX9200 switch in the aggregation device role and is intended for installation in enterprise networks. <i>See also</i> aggregation device, Junos fusion.
<b>Junos fusion for provider edge</b>	A Junos fusion that uses an MX Series 5G Universal Routing Platform in the aggregation device role and is intended for installation at the Service Provider Edge. <i>See also</i> aggregation device.
<b>Junos node slicing</b>	Junos OS feature that allows a single physical router to be partitioned to make it appear as multiple, independent routers. Each partition has its own Junos OS control plane, which runs as a virtual machine (VM), and a dedicated set of line cards. Each partition is called a guest network function (GNF). Junos node slicing enables service providers and large enterprises to create a network infrastructure that consolidates multiple routing functions into a single physical device. <i>See also</i> base system, guest network function.
<b>Junos PyEZ</b>	Microframework for Python that enables the remote managing and automation of devices running Junos OS.
<b>Junos Services Redundancy Protocol</b>	JSRP. A process that controls chassis clustering of Junos OS devices.

<b>Junos Space</b>	Carrier-class network management system for provisioning, monitoring, and diagnosing Juniper Networks routing, switching, security, and data center platforms.
<b>Junos Space wwadapter</b>	Tool you use to enable devices and manage devices running the worldwide version of Junos OS (ww Junos OS devices) from Junos Space Network Management Platform. ww Junos OS devices use Telnet instead of SSH2 to communicate with other network elements. If Junos Space Network Management Platform cannot connect to a device by using SSH2, Junos Space Network Management Platform identifies the device as a ww Junos OS device. Junos Space Network Management Platform connects to the wwadapter by using SSH2, and the wwadapter starts a Telnet session with the device.
<b>Junos telemetry interface</b>	JTI. Highly scalable distributed telemetry collection engine that is designed to help network operators stream statistics and event states. <i>See also</i> telemetry.

## K

<b>kB</b>	kilobyte, KiB. Represents approximately 1000 bytes, depending on whether a decimal (kB) or a binary (KiB) system of measurement is being used. When dealing with network capacity, the decimal version (kB) is the standard, with each kB representing 1000 bytes. However, in storage devices, the binary value of 1024 bytes is used, and sometimes expressed using the abbreviation KiB, although this term is not yet standard in common usage. When precise calculations of storage or network capacity are required, it is important to use an appropriate value for kilobytes.
<b>keepalive</b>	Signal sent at predefined intervals to determine that the connection between two links or routers is still active (up). Parameters important to keepalive include time, interval, and retry.
<b>keepalive message</b>	Sent between network devices to inform each other that they are still active. Keepalive messages are used to identify inactive or failed connections.
<b>kernel</b>	Basic software component of Junos OS. The kernel operates the various processes used to control the router's operations.
<b>kernel forwarding table</b>	Table of best routes to all destinations reachable by the router. For each destination, the table has only the single best route to the destination selected from the IP routing table. The Junos OS routing protocol process installs active routes from its routing tables into the Routing Engine forwarding table. The kernel copies this forwarding table into the Packet Forwarding Engine, which determines which interface transmits the packets. <i>Also known as</i> forwarding table.
<b>kernel-based virtual machine</b>	KVM. A hypervisor for the Linux kernel. KVM is used for creating multiple virtual machines and virtual appliances on a host.
<b>key</b>	Commonly used way to protect the integrity and privacy of information is to rely upon the use of secret information for signing and encryption. These pieces of secret information are known as keys.

<b>key management</b>	Method used in a security system to create and manage security keys, including selection, exchange, storage, certification, expiration, revocation, changing, and transmission of keys. Most of the work in managing information security systems lies in the key management.
<b>key management daemon</b>	kmd. Process that provides IPsec authentication services for encryption PICs.
<b>Keystone</b>	OpenStack service that provides API client authentication, service discovery, and distributed multitenant authorization by implementing OpenStack's Identity API.
<b>KiB</b>	kilobyte, kB. Represents approximately 1000 bytes, depending on whether a decimal (kB) or a binary (KiB) system of measurement is being used. When dealing with network capacity, the decimal version (kB) is the standard, with each kB representing 1000 bytes. However, in storage devices, the binary value of 1024 bytes is used, and sometimes expressed using the abbreviation KiB, although this term is not yet standard in common usage. When precise calculations of storage or network capacity are required, it is important to use an appropriate value for kilobytes.
<b>kilobyte</b>	kB, KiB. Represents approximately 1000 bytes, depending on whether a decimal (kB) or a binary (KiB) system of measurement is being used. When dealing with network capacity, the decimal version (kB) is the standard, with each kB representing 1000 bytes. However, in storage devices, the binary value of 1024 bytes is used, and sometimes expressed using the abbreviation KiB, although this term is not yet standard in common usage. When precise calculations of storage or network capacity are required, it is important to use an appropriate value for kilobytes.
<b>kmd</b>	Key management daemon. Process that provides IPsec authentication services for encryption PICs.
<b>Kubernetes</b>	Open-source cluster manager designed for automating deployment, scaling, and operations of application containers across clusters of hosts, providing container-centric infrastructure.
<b>KVM</b>	kernel-based virtual machine. A hypervisor for the Linux kernel. KVM is used for creating multiple virtual machines and virtual appliances on a host.
<b>L</b>	
<b>L-LSP</b>	label-only-inferred-PSC LSP. One of two types of LSPs employed by MPLS to support differentiated services. The per-hop behavior applied to the packet is determined from the packet label and the EXP field of the MPLS shim header. <i>See also</i> E-LSP, shim header.
<b>L2C</b>	Layer 2 control. Based on a subset of the General Switch Management Protocol (GSMP) in which IGMP is no longer terminated or proxied at the access node. Instead, IGMP passes through the access node transparently. <i>Also known as</i> Access Node Control Protocol, ANCP.
<b>L2TP</b>	Layer 2 Tunneling Protocol. Procedure for secure communication of data across a Layer 2 network that enables users to establish PPP sessions between tunnel endpoints. L2TP uses profiles for individual user and group access to ensure secure communication that is as transparent as possible to both end users and applications. <i>See also</i> tunneling protocol.

<b>L2TP access concentrator</b>	LAC. Device that receives packets from a remote client and forwards them to an L2TP network server (LNS) on a remote network.
<b>L2TP dial-out</b>	Method for corporate virtual private networks (VPNs) that use a Broadband Remote Access Server (B-RAS) to dial out to remote offices that have only narrowband dial-up access.
<b>L2TP network server</b>	LNS. Node that acts as one side of an L2TP tunnel endpoint and is a peer to the LAC. The logical termination point of a PPP connection that is being tunneled from the remote system by the LAC.
<b>L2TP tunnel switching</b>	Router configuration that enables you to switch packets between one session terminating at an L2TP LNS and another session originating at an L2TP LAC. A tunnel-switched LAC differs from a conventional LAC because it uses two interface columns: one for the incoming session (LNS) and one for the outgoing session (LAC). The router forwards traffic from the incoming session to the outgoing session and vice versa.
<b>Label Distribution Protocol</b>	LDP. A protocol for distributing labels in non-traffic-engineered applications. LDP allows routers to establish label-switched paths (LSPs) through a network by mapping Network Layer routing information directly to Data Link Layer switched paths.
<b>label edge router</b>	LER. Label-switching router serving as an ingress node or an egress node.
<b>label object</b>	RSVP message object that contains the label value allocated to the next downstream router.
<b>label pop operation</b>	Function performed by an MPLS router in which the top label in a label stack is removed from the data packet.
<b>label push operation</b>	Function performed by an MPLS router in which a new label is added to the top of the data packet.
<b>label request object</b>	RSVP message object that requests that each router along the path of an LSP allocate a label for forwarding.
<b>label swap operation</b>	Function performed by an MPLS router in which the top label in a label stack is replaced with a new label before the data packet is forwarded to the next-hop router.
<b>label switching</b>	Multiprotocol Label Switching, MPLS. Mechanism for engineering network traffic patterns that functions by assigning short labels to network packets that describe how to forward them through the network. <i>See also</i> traffic engineering, TE.
<b>label values</b>	20-bit field in an MPLS header used by routers to forward data traffic along an MPLS label-switched path.
<b>label-switched interface</b>	LSI. Logical interface supported by Junos OS that provides VPN services (such as VPLS and Layer 3 VPNs) normally provided by a Tunnel Services PIC.

<b>label-switched path</b>	LSP. Sequence of routers that cooperatively perform MPLS operations for a packet stream; the path traversed by a packet that is routed by MPLS. An LSP is a unidirectional, point-to-point, half-duplex connection carrying information downstream from the ingress (first) router to the egress (last) router. The ingress and egress routers cannot be the same router.
<b>label-switching router</b>	LSR. Router on which MPLS is enabled and that can process label-switched packets; an MPLS node that can forward Layer 3 packets based on their labels. <i>Also known as</i> label switch router.
<b>LAC</b>	L2TP access concentrator. Device that receives packets from a remote client and forwards them to an L2TP network server (LNS) on a remote network.
<b>LACP</b>	Link Aggregation Control Protocol. Mechanism for exchanging port and system information to create and maintain LAG bundles.
<b>LAG</b>	link aggregation group. Two or more network links bundled together to function as a single link. Distributes MAC clients across the Link Layer interface and collects traffic from the links to present to the MAC clients of the LAG. <i>Also known as</i> LAG bundle, 802.3ad link aggregation, EtherChannel.
<b>LAG bundle</b>	link aggregation group bundle. Two or more network links bundled together to function as a single link. Distributes MAC clients across the Link Layer interface and collects traffic from the links to present to the MAC clients of the LAG. <i>Also known as</i> LAG bundle, 802.3ad link aggregation, EtherChannel.
<b>LAN</b>	local area network. Computer network that covers a local area, such as a home, an office, or a small group of buildings such as a campus. <i>See also</i> MAN, WAN.
<b>LAN adapter</b>	Computer hardware that connects a computer to a network. <i>Also known as</i> network interface card, network interface controller, network adapter.
<b>LAN PHY</b>	Local Area Network Physical Layer Device. Allows 10-Gigabit Ethernet wide area links to use existing Ethernet applications. <i>See also</i> PHY and WAN PHY.
<b>land attack</b>	Denial-of-service attack in which the attacker may send spoofed SYN packets containing the IP address of the target as both the destination and source IP address, creating an empty connection. These connections flood the target system, overwhelming it.
<b>latency</b>	Delay in the transmission of a packet through a network from beginning to end. <i>See also</i> latency target.
<b>latency target</b>	Target value, in milliseconds (ms), defined to specify the roundtrip time for processing between the target engine and the source engine. <i>See also</i> latency.
<b>launch pad</b>	In NSM, an otherwise blank user interface pane that provides access to commonly used functionality within the associated NSM module.

<b>lawful intercept</b>	Method by which a copy of an IPv4 or IPv6 packet is sent from the routing platform to an external host address or a packet analyzer for analysis. <i>Also known as</i> port mirroring, traffic mirroring, and switch port analyzer (SPAN). <i>See also</i> packet mirroring.
<b>Layer 1</b>	First and lowest level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer defines all the electrical and physical specifications for devices and provides the transmission of bits over the network medium. It includes the physical media: cables, microwaves, and networking equipment such as hubs and repeaters. <i>Also known as</i> Physical Layer.
<b>Layer 2</b>	Second level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer provides the functional and procedural means to transfer data between network entities by splitting data into frames to send on the Physical Layer and receiving acknowledgment frames. It performs error checking and retransmits frames not received correctly. In general, it controls the flow of information across the link, providing an error-free virtual channel to the Network Layer. <i>Also known as</i> Data Link Layer. <i>See also</i> OSI Model.
<b>Layer 2 circuits</b>	Collection of transport modes that accept a stream of ATM cells, convert them to an encapsulated Layer 2 format, then tunnel them over an MPLS or IP backbone, where a similarly configured routing platform segments these packets back into a stream of ATM cells, to be forwarded to the virtual circuit configured for the far-end routing platform. Layer 2 circuits are designed to transport Layer 2 frames between provider edge (PE) routing platforms across a Label Distribution Protocol (LDP)-signaled MPLS backbone. <i>See also</i> AAL5 mode, cell-relay mode, standard AAL5 mode, trunk mode.
<b>Layer 2 control</b>	L2C. Based on a subset of the General Switch Management Protocol (GSMP) in which IGMP is no longer terminated or proxied at the access node. Instead, IGMP passes through the access node transparently. <i>Also known as</i> Access Node Control Protocol, ANCP.
<b>Layer 2 Tunneling Protocol</b>	L2TP. Procedure for secure communication of data across a Layer 2 network that enables users to establish PPP sessions between tunnel endpoints. L2TP uses profiles for individual user and group access to ensure secure communication that is as transparent as possible to both end users and applications. <i>See also</i> tunneling protocol.
<b>Layer 2 VPN</b>	Provides a private network service among a set of customer sites using a service provider's existing MPLS and IP network. A customer's data is separated from other data using software rather than hardware. In a Layer 2 VPN, the Layer 3 routing of customer traffic occurs within the customer's network.
<b>Layer 3</b>	The third level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer performs the basic task of routing data across the network (getting packets of data from source to destination). <i>Also known as</i> Network Layer.
<b>Layer 3 VPN</b>	Provides a private network service among a set of customer sites using a service provider's existing MPLS and IP network. A customer's routes and data are separated from other routes and data using software rather than hardware. In a Layer 3 VPN, the Layer 3 routing of customer traffic occurs within the service provider's network.

<b>Layer 4</b>	The fourth level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer provides communication between applications residing in different hosts and reliable transparent data transfer between end users. It is the first layer to address reliability. <i>Also known as Transport Layer.</i>
<b>Layer 5</b>	As the Session Layer in the seven-layer OSI Model, Layer 5 manages and terminates the connections between local and remote computers, providing full-duplex, half-duplex, or simplex operation, and establishing checkpointing, adjournment, termination, and restart procedures. As the Application Layer and the highest level in the five-layer TCP/IP model, Layer 5 manages the application of higher-level protocols such as File Transfer Protocol (FTP) and the Simple Mail Transfer Protocol (SMTP), which are widely used for network communication. <i>Also known as Session Layer (in OSI Model) or Application Layer (in TCP/IP stack model).</i>
<b>Layer 6</b>	The sixth level in the seven-layer OSI Reference Model for network protocol design. This layer transforms data to provide a standard interface for the Application Layer. <i>Also known as Presentation Layer.</i>
<b>Layer 7</b>	The seventh and highest level in the seven-layer OSI Reference Model for network protocol design that manages communication between application processes. This layer is the main interface for users to interact with application programs such as electronic mail, database managers, and file-server software. <i>Also known as Application Layer (OSI Model). See also OSI Model.</i>
<b>LCC</b>	line-card chassis. LCCs (plural). A router that contains line cards such as FPCs or PICs. Use this term to mean a router connected to a routing matrix or a router being prepared to connect to a routing matrix. <i>See also lcc.</i>
<b>lcc</b>	Junos OS CLI term for line-card chassis (LCC). Use lowercase term only to represent actual CLI commands or sample output. <i>See also line-card chassis.</i>
<b>LCP</b>	Link Control Protocol. Traffic controller used to establish, configure, and test data-link connections for the Point-to-Point Protocol (PPP).
<b>LDAP</b>	Lightweight Directory Access Protocol. Software protocol used for locating resources on a public or private network.
<b>LDP</b>	Label Distribution Protocol. A protocol for distributing labels in non-traffic-engineered applications. LDP allows routers to establish label-switched paths (LSPs) through a network by mapping Network Layer routing information directly to Data Link Layer switched paths.
<b>LDP MD5 authentication</b>	Method of providing protection, using a shared secret (password), against spoofed TCP segments that can be introduced into the connection streams for LDP sessions. Authentication is configurable for both directly connected and targeted peers. Any given pair of peers must share the same password.
<b>leaf node</b>	Terminating node of a multicast distribution tree. A router that is a leaf node only has receivers and does not forward multicast packets to other routers.

<b>learning domain</b>	MAC address database where MAC addresses are added based on the normalized VLAN tags.
<b>lease</b>	Period of time during which an IP address is allocated, or bound, to a DHCP client. A lease can be temporary (dynamic binding) or permanent (static binding).
<b>LER</b>	label edge router. Label-switching router serving as an ingress node or an egress node.
<b>level 1 routing</b>	Refers to routing <i>within</i> an area; a level 1 router: <ul style="list-style-type: none"> <li>• (Or intermediate system) tracks all the individual links, routers, and end systems within a level 1 area.</li> <li>• Does not know the identity of routers or destinations outside its area.</li> <li>• Forwards all traffic for destinations outside its area to the nearest level 2 router within its area.</li> </ul>
<b>level 2 routing</b>	Refers to routing <i>between</i> areas; a level 2 router: <ul style="list-style-type: none"> <li>• Knows the level 2 topology and which addresses are reachable through each level 2 router.</li> <li>• Tracks the location of each level 1 area.</li> <li>• Is not concerned with the topology within any level 1 area (for example, the details internal to each level 1 area).</li> <li>• Can identify when a level 2 router is also a level 1 router within the same area.</li> <li>• Is the only router type that can exchange packets with external routers located outside its routing domain.</li> </ul>
<b>LFI</b>	link fragmentation and interleaving. Method that reduces excessive delays by fragmenting long packets into smaller packets and interleaving them with real-time frames. For example, short delay-sensitive packets, such as packetized voice, can race ahead of larger delay-insensitive packets, such as common data packets.
<b>LFM</b>	link fault management. Method used to detect problems on links and spans on an Ethernet network defined in IEEE 802.3ah. <i>See also</i> OAM.
<b>liblicense</b>	Library that includes messages generated for routines for software license management.
<b>libpcap</b>	Implementation of the pcap application programming interface. Used by a program to capture packets traveling over a network. <i>See also</i> pcap.
<b>license</b>	Sanction or authorization to use a particular product, software, or any licensed material. Licenses often comprise tiers, or levels, designating services provided.
<b>license key</b>	Unique code used to authorize a license. The key can be a combination of letters and numbers depending upon various applications and software for which they are used.



<b>license key generator</b>	Software used to generate license keys.
<b>Licensing Management System</b>	LMS. Web-based tool designed to manage and support licenses for Juniper Networks products.
<b>Lightweight Directory Access Protocol</b>	LDAP. Software protocol used for locating resources on a public or private network.
<b>limited operational environment</b>	Term used to describe the restrictions placed on FIPS-certified equipment. <i>See also</i> FIPS.
<b>line layer</b>	For a channelized OCx/STMx interface, the layer that manages the transport of SONET/SDH payloads, which are embedded in a sequence of STS/STM frames in the physical medium. This layer is responsible for multiplexing and synchronization. <i>See also</i> path layer, section layer.
<b>line loopback</b>	Method of troubleshooting a problem with physical transmission media in which a transmission device in the network sends the data signal back to the originating router.
<b>line module</b>	LM. Acts as a frame forwarding engine for the physical interfaces (I/O modules and IOAs) and processes data from different types of network connections. <i>Also known as</i> card.
<b>line module redundancy</b>	Configuration in which an extra line module in a group of identical line modules provides redundancy if one of the modules fails. The process by which the router switches to the spare line module is called a switchover. The requirements for line module redundancy depend on the router type. <i>Also known as</i> redundancy. <i>See also</i> HA, switchover.
<b>line rate</b>	Total number of physically transferred bits per second, including useful data and protocol overhead, over a communication link. For example, if the line rate of a link is 10 Gbps, the link transmits 10 gigabits of data every second over its physical interface.
<b>line-card chassis</b>	LCC. LCCs (plural). A router that contains line cards such as FPCs or PICs. Use this term to mean a router connected to a routing matrix or a router being prepared to connect to a routing matrix. <i>See also</i> lcc.
<b>linear TV</b>	linear television. A television production that is broadcast in real time, as events happen. Also refers to a regularly scheduled television broadcast that the user views at the scheduled time, versus a prerecorded program that the user plays at the time they wish to view it. <i>Also known as</i> live tv.
<b>link</b>	Communication path between two neighbors. A link is up when communication is possible between the two end points.
<b>Link Aggregation Control Protocol</b>	LACP. Mechanism for exchanging port and system information to create and maintain LAG bundles.
<b>link aggregation group</b>	LAG. Two or more network links bundled together to function as a single link. Distributes MAC clients across the Link Layer interface and collects traffic from the links to present to the MAC clients of the LAG. <i>Also known as</i> LAG bundle, 802.3ad link aggregation, EtherChannel.

<b>Link Control Protocol</b>	LCP. Traffic controller used to establish, configure, and test data-link connections for the Point-to-Point Protocol (PPP).
<b>link fault management</b>	LFM. Method used to detect problems on links and spans on an Ethernet network defined in IEEE 802.3ah. <i>See also</i> OAM.
<b>link fragmentation and interleaving</b>	LFI. Method that reduces excessive delays by fragmenting long packets into smaller packets and interleaving them with real-time frames. For example, short delay-sensitive packets, such as packetized voice, can race ahead of larger delay-insensitive packets, such as common data packets.
<b>Link Integrity Protocol</b>	LIP. Runs on the member links of a Multilink Frame Relay (MLFR) bundle. Several types of LIP messages allow member links to join and leave the bundle.
<b>Link Layer</b>	Data Link Layer. The second level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer provides the functional and procedural means to transfer data between network entities by splitting data into frames to send on the Physical Layer and receiving acknowledgment frames. It performs error checking and retransmits frames not received correctly. In general, it controls the flow of information across the link, providing an error-free virtual channel to the Network Layer. <i>See also</i> OSI Model.
<b>Link Management Protocol</b>	LMP. Part of GMPLS, a protocol used to define a forwarding adjacency between peers and to maintain and allocate resources on the traffic engineering links.
<b>link protection</b>	Method of establishing bypass label-switched paths (LSPs) to ensure that traffic going over a specific interface to a neighboring router can continue to reach the router if that interface fails. The bypass LSP uses a different interface and path to reach the same destination.
<b>link protocol data unit</b>	LPDU. Unit of data that contains specific information about the logical link control (LLC) layer and identifies line protocols associated with the layer. <i>Also known as</i> LLC frame.
<b>link services intelligent queuing interfaces</b>	LSQ. Interfaces configured on the Adaptive Services PIC or ASM that support MLPPP and MLFR traffic and also fully support Junos OS class-of-service (CoS) components.
<b>link training</b>	Mechanism used by two devices connected to each other to learn to exchange network traffic. Issuing the <b>train-link-transmit</b> and <b>train-link-receive</b> commands trains the links on the two devices to send and receive network traffic.
<b>link-state</b>	link-state routing. One of two main classes of routing protocols used in packet-switched networks for computer communications; the other main class is distance-vector. The basic concept of link-state routing is that every node constructs a map of the connectivity of the network, determining which nodes are connected to which other nodes. Each node then independently calculates the best next hop from it to every possible destination in the network, using the Shortest Path First (SPF) algorithm. The collection of best next hops forms the node's routing table. Examples of link-state routing protocols include OSPF and IS-IS.

<b>link-state acknowledgment</b>	OSPF data packet used to inform a neighbor that a link-state update packet has been successfully received.
<b>link-state advertisement</b>	LSA. OSPF data structure that is advertised in a link-state update packet. Each LSA uniquely describes a portion of the OSPF network, containing information about neighbors and path costs. LSAs are used by the receiving routers to maintain their routing tables.
<b>link-state database</b>	LSDB. The data structure on a router that contains all routing knowledge in a link-state network by storing all link state advertisements (LSAs) produced by a link state routing protocol such as Open Shortest Path First (OSPF) or Intermediate System to Intermediate System (IS-IS). Each router runs the SPF algorithm against this database to locate the best network path to each destination in the network.
<b>link-state PDU</b>	LSP. Packet that contains information about the state of adjacencies to neighboring systems.
<b>link-state protocol</b>	LSP. Routing protocol, such as OSPF and IS-IS, where each router shares information with other routers (by flooding information about itself to every reachable router in the routing area) to determine the best path. Link-state protocols use characteristics of the route such as speed and cost, as well as current congestion, to determine the best path. In link-state routing, every node receives a map of the connectivity of the network, then independently calculates the best next hop for every possible destination in the network. The collection of best next hops forms the routing table for the node. Link state information is transmitted only when something has changed in the network. <i>See also</i> routing table.
<b>link-state replication</b>	Addition to the SONET Automatic Protection Switching (APS) functionality that helps promote redundancy of the link PICs used in LSQ configurations. If the active SONET PIC fails, links from the standby PIC are used without causing a link renegotiation. <i>Also known as</i> interface preservation.
<b>link-state request list</b>	List generated by an OSPF router during the exchange of database information while forming an adjacency. Advertised information by a neighbor that the local router does not contain is placed in this list.
<b>link-state request packet</b>	OSPF data packet used by a router to request database information from a neighboring router.
<b>link-state routing</b>	One of two main classes of routing protocols used in packet-switched networks for computer communications; the other main class is distance-vector. The basic concept of link-state routing is that every node constructs a map of the connectivity of the network, determining which nodes are connected to which other nodes. Each node then independently calculates the best next hop from it to every possible destination in the network, using the Shortest Path First (SPF) algorithm. The collection of best next hops forms the node's routing table. Examples of link-state routing protocols include OSPF and IS-IS.
<b>link-state update</b>	OSPF data packet that contains one of multiple LSAs. It is used to advertise routing knowledge into the network.

<b>linktrace message</b>	LTM. Used by one maintenance end point (MEP) to trace the path to another MEP or maintenance intermediate point (MIP) in the same domain. It is needed for loopback (ping). All MIPs respond with a linktrace response to the originating MEP. After decreasing the TTL by one, MIPs forward the linktrace message until the destination MIP/MEP is reached. If the destination is a MEP, every MIP along a given maintenance association responds to the originating MEP. The originating MEP can then determine the MAC address of all MIPs along the maintenance association and their precise location with respect to the originating MEP. <i>Also known as</i> linktrace response (LTR). <i>See also</i> MIP, MEP.
<b>Linktrace Protocol</b>	Protocol used for path discovery between a pair of maintenance points. Linktrace messages are triggered by an administrator using the <b>traceroute</b> command to verify the path between a pair of maintenance end points (MEPs) under the same maintenance association. Linktrace messages can also be used to verify the path between an MEP and a maintenance intermediate point (MIP) under the same maintenance domain. The operation of IEEE 802.1ag linktrace request and response messages is similar to the operation of Layer 3 <b>traceroute</b> commands.
<b>linktrace response</b>	LTR. Used by one maintenance end point (MEP) to trace the path to another MEP or maintenance intermediate point (MIP) in the same domain. It is needed for loopback (ping). All MIPs respond with a linktrace response to the originating MEP. After decreasing the TTL by one, MIPs forward the linktrace message until the destination MIP/MEP is reached. If the destination is a MEP, every MIP along a given maintenance association responds to the originating MEP. The originating MEP can then determine the MAC address of all MIPs along the maintenance association and their precise location with respect to the originating MEP. <i>Also known as</i> linktrace message (LTM). <i>See also</i> MIP, MEP.
<b>Linux Container</b>	LXC. Operating system-level virtualization method for running multiple isolated Linux systems (containers) on a single control host.
<b>LIP</b>	Link Integrity Protocol. Runs on the member links of a Multilink Frame Relay (MLFR) bundle. Several types of LIP messages allow member links to join and leave the bundle.
<b>listening</b>	Monitoring of incoming requests, sometimes on a specific port or IP address. An application listens for a data match and executes an action when a match occurs.
<b>live TV</b>	linear television. A television production that is broadcast in real time, as events happen. Also refers to a regularly scheduled television broadcast that the user views at the scheduled time, versus a prerecorded program that the user plays at the time they wish to view it. <i>Also known as</i> linear tv.
<b>LLC</b>	logical link control. Data Link Layer protocol used on a LAN. The LLC is responsible for managing communications links and handling frame traffic. LLC1 provides connectionless data transfer, and LLC2 provides connection-oriented data transfer. <i>See also</i> Data Link Layer, OSI Model.
<b>LLC frame</b>	Unit of data that contains specific information about the LLC layer and identifies line protocols associated with the layer. <i>Also known as</i> link protocol data unit (LPDU).

<b>LM</b>	line module. Acts as a frame forwarding engine for the physical interfaces (I/O modules and IOAs) and processes data from different types of network connections. <i>Also known as</i> card.
<b>LMI</b>	Local Management Interface. Enhancements to the basic Frame Relay specifications, providing support for the following: <ul style="list-style-type: none"> <li>• A keepalive mechanism that verifies the flow of data.</li> <li>• A multicast mechanism that provides a network server with a local DLCI and multicast DLCI.</li> <li>• In Frame Relay networks, global addressing that gives DLCIs global instead of local significance.</li> <li>• A status mechanism that provides a switch with ongoing status reports on known DLCIs.</li> </ul>
<b>LMP</b>	Link Management Protocol. Part of GMPLS, a protocol used to define a forwarding adjacency between peers and to maintain and allocate resources on the traffic engineering links.
<b>LMS</b>	Licensing Management System. Web-based tool designed to manage and support licenses for Juniper Networks products.
<b>LNS</b>	L2TP network server. Node that acts as one side of an L2TP tunnel endpoint and is a peer to the LAC. The logical termination point of a PPP connection that is being tunneled from the remote system by the LAC.
<b>lo0</b>	loopback interface. Logical interface that emulates a physical interface on the security device, but is always available because it is independent of any physical interfaces. When configured with an address, the loopback interface is the default address for the routing platform and any unnumbered interfaces. <i>See also</i> unnumbered interface.
<b>load balancing</b>	Method used to distribute workload to processors to improve the throughput of concurrent connections. Basically, it installs all next-hop destinations for an active route in the forwarding table. You can use load balancing across multiple paths between routers. The behavior of load balancing depends on the version of the Internet Processor ASIC in the router. <i>Also known as</i> per-packet load balancing.
<b>loading</b>	OSPF adjacency state in which the local router sends link-state request packets to its neighbor and waits for the appropriate link-state updates from that neighbor.
<b>local address pool alias</b>	Alternate name for an existing local address pool. It consists of an alias name and a pool name.
<b>local address server</b>	Server that allocates IP addresses from a pool of addresses stored locally on the router. A local address server is defined in the context of a virtual router. Local address servers exist as long as the virtual router exists or until you remove them by deleting all configured pools.
<b>local area network</b>	LAN. Computer network that covers a local area, such as a home, an office, or a small group of buildings such as a campus. <i>See also</i> MAN, WAN.

<b>Local Area Network Physical Layer Device</b>	LAN PHY. Allows 10-Gigabit Ethernet wide area links to use existing Ethernet applications. <i>See also</i> PHY and WAN PHY.
<b>local ATM passthrough</b>	Ability of the router to emulate packet-based ATM switching. Useful for customers who run IP in most of their network but still have to carry a small amount of native ATM traffic.
<b>local authentication server</b>	AAA server that enables the E Series router to provide local PAP and CHAP user authentication for subscribers. The router also provides limited authorization, using the IP address, IP address pool, and operational virtual router parameters. When a subscriber logs in to the E Series router that is using local authentication, the subscriber is authenticated against user entries in a local user database; the optional parameters are assigned to subscribers after the subscriber is authenticated.
<b>local loopback</b>	Ability to loop the data back toward the router on supported line modules. Also sends an alarm indication signal out toward the network. <i>Also known as</i> loopback, network loopback, remote loopback.
<b>Local Management Interface</b>	LMI. Enhancements to the basic Frame Relay specifications, providing support for the following: <ul style="list-style-type: none"> <li>• A keepalive mechanism that verifies the flow of data.</li> <li>• A multicast mechanism that provides a network server with a local DLCI and multicast DLCI.</li> <li>• In Frame Relay networks, global addressing that gives DLCIs global instead of local significance.</li> <li>• A status mechanism that provides a switch with ongoing status reports on known DLCIs.</li> </ul>
<b>local packet</b>	Chunk of data destined for or sent by the Routing Engine.
<b>local preference</b>	Optional BGP path attribute (LOCAL_PREF) carried in internal BGP update packets that indicates the degree of preference for an external route.
<b>local routing table</b>	Database local to the protocol that contains all the routes known by that protocol to the destination prefixes in the table. Usually contains the calculated best routes as selected by the protocol algorithm and used by the local router to forward data packets. <i>Also known as</i> routing information base (RIB). <i>See also</i> global routing table, routing table.
<b>local significance</b>	Concept used in an MPLS network where the label values are unique only between two neighbor routers.
<b>local-use community</b>	Convenient way to categorize groups of routes to facilitate the use of routing policies. <i>Also known as</i> private community, general community.
<b>lockout</b>	Object state during which the object cannot be edited.
<b>log</b>	Grouping of log entries, which are the systematic recording of specific types of data processing events.
<b>log category</b>	Term to describe the log type, such as alarm, config, traffic, and so on.
<b>log ID</b>	Unique identifier label for a log, derived from a combination of the date and log number.

<b>Log Investigator</b>	Module of the NSM user interface that has tools for analyzing log entries in depth. Use the Log Investigator to manipulate and change constraints on log information, correlate log entries visually and rapidly, and filter log entries while maintaining the broader picture.
<b>Log Viewer</b>	Module of the NSM user interface that displays the entries of traffic logs for devices on your network.
<b>logging</b>	Provides information about system events such as network, security, server, storage, and application events. System events are stored in a safe area where they can be retrieved and reviewed for troubleshooting purposes, in case of device failure.
<b>logical interface</b>	On a physical interface, the configuration of one or more units that include all addressing, protocol information, and other logical interface properties that enable the physical interface to function. <i>Also known as</i> subinterface.
<b>logical link control</b>	LLC. Data Link Layer protocol used on a LAN. The LLC is responsible for managing communications links and handling frame traffic. LLC1 provides connectionless data transfer, and LLC2 provides connection-oriented data transfer. <i>See also</i> Data Link Layer, OSI Model.
<b>logical operator</b>	Characters used in a firewall filter to represent a Boolean AND or OR operation.
<b>logical system</b>	<ul style="list-style-type: none"> <li>• LSYS. LSYS enables you to partition an SRX Series Services Gateway into secure contexts (for management purposes) in Junos Space Network Management Platform. Each logical system contains its own discrete administrative domain, logical interfaces, routing instances, security firewall, and other security features.</li> <li>• Logical routing device that is partitioned from an M Series, an MX Series, or a T Series routing platform. Each logical system independently performs a subset of the tasks performed by the main router and has a unique routing table, interfaces, policies, and routing instances. <i>Previously known as</i> logical router.</li> </ul>
<b>logical system administrator</b>	A user account with configuration and verification privileges for only the logical systems to which that user is assigned.
<b>login classes</b>	Classes that an administrator uses to specify access privileges that users have when they are logged in to a router or switch, list commands that they can execute and statements that they can configure and view, and specify how long a user login session can remain idle before it times out and the user is logged out. <i>See also</i> permission flags.
<b>Long Term Evolution</b>	LTE. Standard for wireless communication of high-speed data for mobile phones and data terminals. It increases the capacity and speed by using a dedicated radio interface, thereby effecting core network improvements.
<b>longer</b>	Junos OS routing policy match type that represents all routes more specific than the given subnet, but not the given subnet itself. It is similar to a mathematical greater-than operation.

<b>looking glass</b>	Feature in Junos Space Network Management Platform that you use to view device configuration and operational status by executing basic CLI commands from the Junos Space user interface. You can execute these commands on multiple devices and compare the configurations and runtime information for these devices.
<b>loopback</b>	Ability to loop the data back toward the router on supported line modules. Also sends an alarm indication signal out toward the network. <i>Also known as</i> local loopback, network loopback, remote loopback.
<b>loopback address</b>	IP address type used by a node to send a packet to itself (specially designated for the software loopback interface of a device). The loopback interface has no hardware associated with it and is not physically connected to a network.
<b>loopback interface</b>	lo0. Logical interface that emulates a physical interface on the security device, but is always available because it is independent of any physical interfaces. When configured with an address, the loopback interface is the default address for the routing platform and any unnumbered interfaces. <i>See also</i> unnumbered interface.
<b>loose hop</b>	In the context of traffic engineering, a path that can use any router or any number of other intermediate (transit) points to reach the next address in the path. (Definition from RFC 791, modified to fit LSPs.) <i>See also</i> strict hop.
<b>loose-source routing</b>	MPLS routing method that specifies a set of hops that the packet must traverse. The specified hops do not need to be adjacent, and the routing does not need to include every hop in the path. <i>See also</i> strict-source routing.
<b>loss-priority map</b>	Maps the loss priority of incoming packets based on code point values.
<b>lossless transport</b>	In data center bridging networks, the ability to switch FCoE frames over an Ethernet network without dropping any frames. Lossless transport uses mechanisms such as priority-based flow control and quantized congestion notification to control traffic flows and avoid congestion.
<b>low-density keepalive mode</b>	Mode in which, when the keepalive timer expires, the interface always sends an LCP echo request, regardless of whether the peer is silent. <i>See also</i> high-density keepalive mode.
<b>lower-speed IQ interfaces</b>	E1, NxDS0, and T1 interfaces configured on an IQ PIC.
<b>LPDU</b>	link protocol data unit. Unit of data that contains specific information about the logical link control (LLC) layer and identifies line protocols associated with the layer. <i>Also known as</i> LLC frame.
<b>LSA</b>	link-state advertisement. OSPF data structure that is advertised in a link-state update packet. Each LSA uniquely describes a portion of the OSPF network, containing information about neighbors and path costs. LSAs are used by the receiving routers to maintain their routing tables.



<b>LSDB</b>	link-state database. The data structure on a router that contains all routing knowledge in a link-state network by storing all link state advertisements (LSAs) produced by a link state routing protocol such as Open Shortest Path First (OSPF) or Intermediate System to Intermediate System (IS-IS). Each router runs the SPF algorithm against this database to locate the best network path to each destination in the network.
<b>LSI</b>	label-switched interface. Logical interface supported by Junos OS that provides VPN services (such as VPLS and Layer 3 VPNs) normally provided by a Tunnel Services PIC.
<b>LSP</b>	<ul style="list-style-type: none"> <li>• label-switched path. Sequence of routers that cooperatively perform MPLS operations for a packet stream; the path traversed by a packet that is routed by MPLS. An LSP is a unidirectional, point-to-point, half-duplex connection carrying information downstream from the ingress (first) router to the egress (last) router. The ingress and egress routers cannot be the same router.</li> <li>• link-state PDU (protocol data unit). In IS-IS, a broadcast by link-state protocols containing information about neighbors and path costs that is used to maintain routing tables. <i>See also</i> link-state advertisement.</li> <li>• link-state protocol. Routing protocol, such as OSPF and IS-IS, where each router shares information with other routers (by flooding information about itself to every reachable router in the routing area) to determine the best path. Link-state protocols use characteristics of the route such as speed and cost, as well as current congestion, to determine the best path. In link-state routing, every node receives a map of the connectivity of the network, then independently calculates the best next hop for every possible destination in the network. The collection of best next hops forms the routing table for the node. Link state information is transmitted only when something has changed in the network. <i>See also</i> routing table.</li> </ul>
<b>LSP priority level</b>	Relative importance of a label-switched path that determines which LSPs can preempt other LSPs. Priorities are in the range 0–7 in order of decreasing priority.
<b>LSQ</b>	link services intelligent queuing interfaces. Interfaces configured on the Adaptive Services PIC or ASM that support MLPPP and MLFR traffic and also fully support Junos OS class-of-service (CoS) components.
<b>LSR</b>	label-switching router. Router on which MPLS is enabled and that can process label-switched packets; an MPLS node that can forward Layer 3 packets based on their labels. <i>Also known as</i> label switch router.
<b>LSYS</b>	logical system. LSYS enables you to partition an SRX Series Services Gateway into secure contexts (for management purposes) in Junos Space Network Management Platform. Each logical system contains its own discrete administrative domain, logical interfaces, routing instances, security firewall, and other security features.
<b>LTE</b>	Long Term Evolution. Standard for wireless communication of high-speed data for mobile phones and data terminals. It increases the capacity and speed by using a dedicated radio interface, thereby effecting core network improvements.

- LTM** linktrace message. Used by one maintenance end point (MEP) to trace the path to another MEP or maintenance intermediate point (MIP) in the same domain. It is needed for loopback (ping). All MIPs respond with a linktrace response to the originating MEP. After decreasing the TTL by one, MIPs forward the linktrace message until the destination MIP/MEP is reached. If the destination is a MEP, every MIP along a given maintenance association responds to the originating MEP. The originating MEP can then determine the MAC address of all MIPs along the maintenance association and their precise location with respect to the originating MEP. *Also known as linktrace response (LTR). See also MIP, MEP.*
- LTR** linktrace response. Used by one maintenance end point (MEP) to trace the path to another MEP or maintenance intermediate point (MIP) in the same domain. It is needed for loopback (ping). All MIPs respond with a linktrace response to the originating MEP. After decreasing the TTL by one, MIPs forward the linktrace message until the destination MIP/MEP is reached. If the destination is a MEP, every MIP along a given maintenance association responds to the originating MEP. The originating MEP can then determine the MAC address of all MIPs along the maintenance association and their precise location with respect to the originating MEP. *Also known as linktrace message (LTM). See also MIP, MEP.*
- LXC** Linux Container. Operating system-level virtualization method for running multiple isolated Linux systems (containers) on a single control host.

## M

- MA** maintenance association. Combined set of nodes (MEPs and MIPs) within a maintenance domain. *See also LTM, LTR.*
- MAC**
- media access control (address). A unique code assigned to every piece of hardware that connects to the network. In the OSI seven-layer networking model defined by the IEEE, MAC is the lower sublayer of the Data Link Layer. The MAC sublayer governs protocol access to the physical network medium. By using the MAC addresses that are assigned to all ports on a router, multiple devices on the same physical link can uniquely identify one another at the Data Link Layer. *See also MAC address.*
  - Message Authentication Code. In cryptography, a short piece of information used to authenticate a message. A MAC algorithm accepts as input a secret key and an arbitrary-length message to be authenticated, and outputs a MAC, or a tag. Sometimes called *message integrity code (MIC)* to distinguish the MAC function from the MAC (media access control) address.
- MAC address** Unique identifier of a network interface that devices use for most IEEE 802 communications on a network segment. For physical devices, manufacturers typically store the MAC addresses of network interface cards (NICs) in ROM. For virtual devices, network administrators or software applications assign MAC addresses to interfaces. *See also IEEE 802, MAC, NIC, ROM.*
- MAC address validation** Verification process performed on each incoming packet to prevent spoofing on IP Ethernet-based interfaces, including bridged Ethernet interfaces.

<b>magic number</b>	Randomly generated number that identifies one end of a point-to-point connection. Each side negotiates its magic number, taking note of the other's magic number. If both sides discover that the magic numbers they are negotiating are the same, each side attempts to change its magic number. If they are not successful, and the magic numbers remain the same, the session terminates because of the loopback that is detected.
<b>main mode</b>	Mode of IKE phase 1 negotiations that protects the identities of the peers during negotiations and enables greater proposal flexibility than aggressive mode. Main mode is more time-consuming than aggressive mode because more messages are exchanged between peers. (Six messages are exchanged in main mode.) <i>See also</i> aggressive mode.
<b>main router</b>	The standard concept of a router. Main router configuration statements are found at the <b>[edit]</b> hierarchy level.
<b>maintenance association</b>	MA. Combined set of nodes (MEPs and MIPs) within a maintenance domain. <i>See also</i> LTM, LTR.
<b>maintenance association end point</b>	MEP, maintenance end point. End point (beginning or ending) of a maintenance domain. <i>See also</i> LTM, LTR.
<b>maintenance association ID</b>	Identifier associated with the maintenance association.
<b>maintenance association intermediate point</b>	MIP. Intermediate node within the maintenance domain. <i>See also</i> LTM, LTR.
<b>maintenance data link</b>	MDL. Type of message that can be used to determine the status of a line and to display statistics for the remote end of a connection.
<b>maintenance domain</b>	Part of the network where connectivity fault detection is performed.
<b>maintenance end point</b>	MEP. End point (beginning or ending) of a maintenance domain. <i>See also</i> LTM, LTR.
<b>maintenance point</b>	MP. A MEP or a MIP is a maintenance point.
<b>malware</b>	Short for <i>malicious software</i> , malware is designed to disrupt computer operation, gain access to private systems, or gather sensitive information. Antivirus software and firewalls are used to protect against malware. <i>See also</i> antivirus, firewall.
<b>MAM</b>	maximum allocation bandwidth constraints model. In Differentiated Services-aware traffic engineering, a constraint model that divides the available bandwidth among the different classes. Sharing of bandwidth among the class types is not allowed.
<b>MAN</b>	metropolitan area network. Computer network that interconnects users in a geographic area larger than a LAN but smaller than a WAN—for example, from a few city blocks to a city and its surrounding areas. <i>See also</i> LAN, WAN.

<b>managed device</b>	In SNMP, a hardware device, such as a PC or a router. <i>Also known as network element.</i>
<b>management daemon</b>	mgd. Junos OS process responsible for managing all user access to the router.
<b>management Ethernet interface</b>	Permanent interface that provides an out-of-band method, such as SSH and telnet, to connect to the routing platform. SNMP can use the management interface to gather statistics from the routing platform. Called fxp0 on some routing platforms. <i>See also</i> permanent interface.
<b>Management Information Base</b>	MIB. Definition of an object that can be managed by SNMP.
<b>Management Module, JCS</b>	JCS Management Module. Chassis management hardware and software used to access and configure the Juniper Control System (JCS) platform.
<b>Manual Commit Mode</b>	Feature of JunosE Software where configuration changes affect only the current system configuration (the running configuration), without affecting the CLI prompt.
<b>manual secure IP interfaces</b>	Interfaces that use a preconfigured set of SA parameters to secure traffic flowing through a secure IP interface. If these are not used, the interface drops all traffic it receives. The router keeps statistics for dropped traffic. Both peer security gateways must contain a manually provisioned secure IP tunnel. <i>See also</i> signaled secure IP interface.
<b>map tag</b>	Unique string used to identify a route map.
<b>mapped IP address</b>	MIP. Direct one-to-one mapping of traffic destined for one IP address to another IP address.
<b>mapping agent</b>	Router used in an auto-RP multicast network to select the rendezvous point for all multicast group addresses. The rendezvous point is then advertised to all other routers in the domain.
<b>martian address</b>	Network address about which all information is ignored.
<b>martian route</b>	Network routes about which all information is ignored. Junos OS does not allow martian routes in the inet.0 routing table.
<b>MAS</b>	mobile network access subsystem. GSN application subsystem that contains the access server.
<b>mask</b>	Number of bits of the network address used to separate the network information from the host information in a Class A, Class B, or Class C IP address, allowing the creation of subnetworks. In binary notation, a series of 1s followed by a series of contiguous 0s. The 1s represent the network number; the 0s represent the host number. Use of masks can divide networks into subnetworks by extending the network portion of the address into the host portion. Subnetting increases the number of subnetworks and reduces the number of hosts. <i>Also known as</i> network mask, subnet mask.
<b>master</b>	<i>See</i> primary.

<b>master administrator</b>	A user account with superuser configuration and verification privileges.
<b>master clock</b>	See primary clock.
<b>master encryption password</b>	Password used to derive an encryption key that is used with SHA256 hash to encrypt configuration secrets.
<b>master router</b>	See primary router.
<b>match</b>	Logical concept used in a routing policy or firewall filter, it denotes the criteria used to find a route or IP packet before an action is performed.
<b>match clause</b>	Portion of a route map that specifies the attribute values that determine whether a route matches the route map. A route that has the same attribute values passes the match condition. Routes that pass all the match conditions match the route map.
<b>match policy list</b>	Similar to a route map but contains only match clauses and no set clauses. <i>See also</i> policy list.
<b>match type</b>	Junos OS syntax used in a route filter to better describe the routes that should match the policy term.
<b>MAU</b>	medium attachment unit. Small device that converts signals between an attachment unit interface (AUI) and coaxial cable.
<b>maximum allocation bandwidth constraints model</b>	MAM. In Differentiated Services-aware traffic engineering, a constraint model that divides the available bandwidth among the different classes. Sharing of bandwidth among the class types is not allowed.
<b>maximum received reconstructed unit</b>	MRRU. Similar to the maximum transmission unit (MTU), but is specific to link services interfaces such as MLPPP. <i>See also</i> MTU.
<b>maximum transmission unit</b>	MTU. Size in bytes of the largest protocol data unit that can be passed on in a link. The standard MTU for an Ethernet link is 1500.
<b>MB</b>	megabyte, MiB. Represents approximately 1,000,000 bytes, depending on whether a decimal (MB) or a binary (MiB) system of measurement is being used. In storage devices, the standard value for one megabyte (MB) is 1,000,000 bytes. For computer memory, however, one megabyte is typically 1,048,576 (1024 x 1024) bytes. When precise calculations of storage capacity or memory capacity are required, it is important to use an appropriate value for megabytes.
<b>Mb</b>	megabit, Mbit. Unit used in measuring digital transmission (data transfer rates), one megabit is equal to 1,000,000 bits. Not to be confused with megabytes, the megabit base unit is an 8-bit-sized byte, so one megabit is equal to 125,000 bytes.

<b>MBGP</b>	Multicast Border Gateway Protocol. Extensions to BGP that permit the configuration of a multicast routing topology within and between BGP ASs. A BGP unicast routing protocol that allows different types of addresses (known as address families) to be distributed in parallel. This allows information about the topology of IP multicast-capable routers to be exchanged separately from the topology of normal unicast routers. <i>Also known as</i> Multiprotocol Border Gateway Protocol (MP-BGP).
<b>Mbit</b>	megabit, Mb. Unit used in measuring digital transmission (data transfer rates), one megabit is equal to 1,000,000 bits. Not to be confused with megabytes, the megabit base unit is an 8-bit-sized byte, so one megabit is equal to 125,000 bytes.
<b>MBone</b>	multicast backbone. Interconnected set of subnetworks and routers that support the delivery of IP multicast traffic. The MBone is a virtual network that is layered on top of sections of the physical Internet.
<b>MC-LAG</b>	multichassis link aggregation group. Multichassis link aggregation solution that enables a client device to form a logical link aggregation group (LAG) interface between two MC-LAG peers. An MC-LAG provides redundancy and load balancing between the two MC-LAG peers, multihoming support, and a loop-free Layer 2 network without running Spanning Tree Protocol (STP).
<b>MCC</b>	Mobile Country Code. Used to identify the country in which a Mobile Station is located. The MCC is part of the International Mobile Subscriber Identity (IMSI) number, which uniquely identifies a particular subscriber in a mobile network.
<b>MCS</b>	Miscellaneous Control Subsystem. On the M40e and M160 routers, provides control and monitoring functions for router components and SONET clocking for the router.
<b>MD5</b>	Message Digest 5. One-way hashing algorithm that produces a 128-bit hash used for generating message authentication signatures. MD5 is used in AH and ESP. <i>See also</i> hashing, SHA, SHA-1.
<b>MD5 authentication</b>	Method for IS-IS that prevents unauthorized routers from injecting false routing information into your network or forming adjacencies with your router. The router creates secure digests of the packets, encrypted according to the HMAC MD5 message-digest algorithms. The digests are inserted into the packets from which they are created. Depending on the commands you issue, the digests can be inserted into hello packets, link-state PDUs, complete sequence number PDUs, and partial sequence number PDUs. <i>Also known as</i> HMAC MD5 authentication.
<b>MDL</b>	maintenance data link. Type of message that can be used to determine the status of a line and to display statistics for the remote end of a connection.
<b>MDRR</b>	modified deficit round robin. Method for selecting queues to be serviced. <i>See also</i> queue.
<b>MDT</b>	multicast distribution tree. Path between the sender (host) and the multicast group (receiver or listener).
<b>mean time between failures</b>	MTBF. Measure of hardware component reliability.

<b>MED</b>	multiple exit discriminator. Optional BGP path attribute consisting of a metric value that is used to determine the exit point to a destination when all other factors determining the exit point are equal.
<b>media access control (address)</b>	MAC address. A unique code assigned to every piece of hardware that connects to the network. In the OSI seven-layer networking model defined by the IEEE, MAC is the lower sublayer of the Data Link Layer. The MAC sublayer governs protocol access to the physical network medium. By using the MAC addresses that are assigned to all ports on a router, multiple devices on the same physical link can uniquely identify one another at the Data Link Layer.
<b>Media Gateway Control Protocol</b>	MGCP. Text-based, Application Layer protocol used for call set up and control. The protocol is based on a primary/backup call control architecture: the media gateway controller (call agent) maintains call control intelligence, and media gateways carry out the instructions from the call agent.
<b>Media Gateway Controller</b>	MGC. Avaya media server that controls the parts of the call state that pertain to connection control for media channels in a media gateway. The MGC is the controlling entity in an ITU-T H.248 relationship.
<b>mediation device</b>	Device that receives mirrored traffic from E Series routers during packet mirroring. <i>Also known as analyzer device.</i>
<b>medium attachment unit</b>	MAU. Small device that converts signals between an attachment unit interface (AUI) and coaxial cable.
<b>megabit</b>	Mbit or Mb. Unit used in measuring digital transmission (data transfer rates), one megabit is equal to 1,000,000 bits. Not to be confused with megabytes, the megabit base unit is an 8-bit-sized byte, so one megabit is equal to 125,000 bytes.
<b>megabyte</b>	MB or MiB. Represents approximately 1,000,000 bytes, depending on whether a decimal (MB) or a binary (MiB) system of measurement is being used. In storage devices, the standard value for one megabyte (MB) is 1,000,000 bytes. For computer memory, however, one megabyte is typically 1,048,576 (1024 x 1024) bytes. When precise calculations of storage capacity or memory capacity are required, it is important to use an appropriate value for megabytes.
<b>member AS</b>	Name of the autonomous system being included in a BGP confederation.
<b>MEP</b>	maintenance end point. End point (beginning or ending) of a maintenance domain. <i>See also</i> LTM, LTR.
<b>mesh</b>	Network topology in which devices are organized in a manageable, segmented manner with many, often redundant, interconnections between network nodes.
<b>Mesos</b>	Open-source cluster manager designed to scale large clusters from thousands of hosts.
<b>message aggregation</b>	Extension to the Resource Reservation Protocol (RSVP) specification that allows neighboring routers to bundle up to 30 RSVP messages into a single protocol packet.

<b>Message Authentication Code</b>	MAC. In cryptography, a short piece of information used to authenticate a message. A MAC algorithm accepts as input a secret key and an arbitrary-length message to be authenticated, and outputs a MAC, or a tag. Sometimes called message integrity code (MIC) to distinguish the MAC function from the MAC (media access control) address.
<b>Message Digest 5</b>	MD5. One-way hashing algorithm that produces a 128-bit hash used for generating message authentication signatures. MD5 is used in AH and ESP. <i>See also</i> hashing, SHA-1.
<b>metric</b>	Value associated with a route that the virtual router uses to select the active route when there are multiple routes to the same destination network with the same preference value. The metric value for connected routes is always 0. The default metric value for static routes is 1, but you can specify a different value when defining a static route.
<b>metropolitan area network</b>	MAN. Computer network that interconnects users in a geographic area larger than a LAN but smaller than a WAN—for example, from a few city blocks to a city and its surrounding areas. <i>See also</i> LAN, WAN.
<b>MGC</b>	Media Gateway Controller. Avaya media server that controls the parts of the call state that pertain to connection control for media channels in a media gateway. The MGC is the controlling entity in an ITU-T H.248 relationship.
<b>MGCP</b>	Media Gateway Control Protocol. Text-based, Application Layer protocol used for call set up and control. The protocol is based on a primary/backup call control architecture: the media gateway controller (call agent) maintains call control intelligence, and media gateways carry out the instructions from the call agent.
<b>mgd</b>	management daemon. Junos OS process responsible for managing all user access to the router.
<b>MiB</b>	megabyte, MB. Represents approximately 1,000,000 bytes, depending on whether a decimal (MB) or a binary (MiB) system of measurement is being used. In storage devices, the standard value for 1 megabyte (MB) is 1,000,000 bytes. For computer memory, however, 1 megabyte is typically 1,048,576 (1024 x 1024) bytes. When precise calculations of storage capacity or memory capacity are required, it is important to use an appropriate value for megabytes.
<b>MIB</b>	Management Information Base. Definition of an object that can be managed by SNMP.
<b>MIC</b>	Modular Interface Card. Network interface-specific card that can be installed on an MPC in the router.
<b>Microcom Networking Protocol</b>	MNP. Protocol that provides error correction and data compression for asynchronous modem transmission.
<b>mid-tier proxy</b>	A proxy server located between the origin servers and the edge. The mid-tier proxy serves requests from the edge caches, improving response time because content is closer to the user, and by off-loading repeat requests to the origin servers from the edge. <i>See also</i> reverse proxy, transparent proxy.



<b>midplane</b>	Hardware component that physically separates front and rear cavities inside the chassis, distributes power from the power supplies, and transfers packets and signals between router components that plug into it. <i>See also</i> redundancy midplane.
<b>MIME type</b>	Multipurpose Internet Mail Extension, a name that identifies the type of data being transferred; for example, application/pdf for PDF files. This standard was first used in e-mail applications, and it has been widely adopted by other Internet technologies such as web servers.
<b>Mini-Physical Interface Module</b>	Mini-PIM. Circuit board designed for use with Juniper Networks devices. The board enables easy addition or modification of physical interfaces on a device.
<b>Mini-PIM</b>	Mini-Physical Interface Module. Circuit board designed for use with Juniper Networks devices. The board enables easy addition or modification of physical interfaces on a device.
<b>MIP</b>	<ul style="list-style-type: none"> <li>• maintenance intermediate point. Intermediate node within the maintenance domain. <i>See also</i> LTM, LTR,</li> <li>• mapped Internet Protocol (IP) address. Direct one-to-one mapping of traffic destined for one IP address to another IP address.</li> </ul>
<b>mirrored interface</b>	Statically or dynamically configured interface on which traffic is being mirrored during packet mirroring on E Series routers.
<b>mirrored user</b>	User whose traffic is being mirrored during packet mirroring on E Series routers.
<b>Miscellaneous Control Subsystem</b>	MCS. On the M40e and M160 routers, provides control and monitoring functions for router components and SONET clocking for the router.
<b>Mitaka</b>	Open-source enterprise cloud platform and the thirteenth major release of OpenStack. Mitaka offers default configurations for new deployments with easier integration and management of all projects within the OpenStack "Big Tent" model.
<b>MLD</b>	Multicast Listener Discovery. Protocol that manages the membership of hosts and routers in multicast groups. An IPv6 protocol that hosts use to report their multicast group memberships to neighboring routers. Similarly, multicast routers, such as E Series routers, use MLD to discover which of their hosts belong to multicast groups.
<b>MLD proxy</b>	Method by which the router issues MLD host messages on behalf of hosts that the router discovered through standard MLD interfaces. The router acts as a proxy for its hosts.
<b>MLFR</b>	Multilink Frame Relay. Logically ties together individual circuits, creating a bundle. The logical equivalent of MLPPP, MLFR is used for Frame Relay traffic instead of PPP traffic. FRF.15 and FRF.16 are two implementations of MLFR.

<b>MLPPP</b>	Multilink Point-to-Point Protocol. Enables you to bundle multiple PPP links into a single logical link between two network devices to provide an aggregate amount of bandwidth. The technique is often called bonding or link aggregation. Defined in RFC 1990, <i>The PPP Multilink Protocol (MP)</i> . <i>See also</i> PPP.
<b>MM</b>	Juniper Control System (JCS) management module.
<b>MMF</b>	multimode fiber. Optical fiber supporting the propagation of multiple frequencies of light. MMF is used for relatively short distances because the modes tend to disperse over longer lengths (called modal dispersion). For longer distances, single-mode fiber (sometimes called monomode) is used. <i>See also</i> single-mode fiber.
<b>MNC</b>	Mobile Network Code. Unique identifier assigned to a mobile operator/carrier. It is used in conjunction with the MCC to specify carrier and country.
<b>MNP</b>	Microcom Networking Protocol. Protocol that provides error correction and data compression for asynchronous modem transmission.
<b>Mobile Country Code</b>	MCC. Used to identify the country in which a Mobile Station is located. The MCC is part of the International Mobile Subscriber Identity (IMSI) number, which uniquely identifies a particular subscriber in a mobile network.
<b>mobile network access subsystem</b>	MAS. GSN application subsystem that contains the access server.
<b>Mobile Network Code</b>	MNC. Unique identifier assigned to a mobile operator/carrier. It is used in conjunction with the MCC to specify carrier and country.
<b>mobile point-to-point control subsystem</b>	MPS. GSN application subsystem that controls all functionality associated with a particular connection.
<b>Mobile Station</b>	MS. Mobile device, such as a cellular phone or a mobile personal digital assistant (PDA).
<b>Mobile Station Integrated Services Digital Network Number</b>	MSISDN. Number that callers use to reach a mobile services subscriber.
<b>Mobile Subscriber Identification Number</b>	MSIN. A unique number to identify subscribers in a mobile network, used within the International Mobile Subscriber Identity (IMSI).
<b>Mobile Switching Center</b>	MSC. Provides origination and termination functions to calls from a Mobile Station user.
<b>mobile transport subsystem</b>	MTS. GSN application subsystem that implements all the protocols used by the GSN.

<b>modeled device</b>	Copy of a device added to the Junos Space Network Management Platform database. You can activate the modeled device and associate it with the physical device in the network through a connection initiated by a device or Junos Space. Junos Space Network Management Platform manages active modeled devices only. <i>See also</i> cloned device.
<b>modeling</b>	In NSM, process of creating a non-deployed device configuration.
<b>modified deficit round robin</b>	MDRR. Method for selecting queues to be serviced. <i>See also</i> queue.
<b>Modular Interface Card</b>	MIC. Network interface-specific card that can be installed on an MPC in the router.
<b>Modular Port Concentrator</b>	MPC. Interface concentrator on which modular interface cards (MICs) are mounted. An MPC is inserted into a slot in a Juniper Networks router. <i>See also</i> MIC.
<b>module</b>	In NSM, first-level element in the NSM navigation tree.
<b>mOhm</b>	Unit of mechanical mobility for sound waves. The reciprocal of the mechanical ohm unit of impedance.
<b>monitor</b>	<ul style="list-style-type: none"> <li>• A regular test that the Junos App Balancer uses to track the health of a pool.</li> <li>• (Security Director) Process of detecting system events and system data in a user-specified time interval and displaying the collected data in widgets or in a graphical representation format on the dashboard.</li> </ul>
<b>MP</b>	maintenance point. A MEP or a MIP is a maintenance point.
<b>MP-BGP</b>	Multiprotocol Border Gateway Protocol. Extensions to BGP that enable it to carry routing information for multiple Network Layer protocols instead of only for IP, including the ability to carry multicast routing information. <i>Also known as</i> Multicast Border Gateway Protocol (MBGP).
<b>MPC</b>	Modular Port Concentrator. Interface concentrator on which modular interface cards (MICs) are mounted. An MPC is inserted into a slot in a Juniper Networks router. <i>See also</i> MIC.
<b>MPLS</b>	Multiprotocol Label Switching. Mechanism for engineering network traffic patterns that functions by assigning short labels to network packets that describe how to forward them through the network. <i>Also known as</i> label switching. <i>See also</i> traffic engineering.
<b>MPLS edge node</b>	MPLS node that connects an MPLS domain with a node outside the domain that either does not run MPLS or is in a different domain.
<b>MPLS egress node</b>	MPLS edge node that handles traffic as it leaves an MPLS domain.
<b>MPLS EXP classifier</b>	Class-of-service (CoS) behavior classifier for classifying packets based on the MPLS experimental bit. <i>See also</i> EXP bits.
<b>MPLS FEC</b>	Set of packets that are all forwarded in the same manner by a given LSR.

<b>MPLS forwarding table</b>	Maps MPLS labels to next hops. MPLS looks up the outermost label in a received packet in the forwarding table to determine what labels to push on the packet's label stack and where to send the packet.
<b>MPLS ingress node</b>	Edge node that handles traffic as it enters an MPLS domain.
<b>MPLS node</b>	Router running MPLS; it is aware of MPLS control protocols, operates one or more Layer 3 routing protocols, and is capable of forwarding packets based on labels. Optionally, an MPLS node can be capable of forwarding native Layer 3 packets.
<b>MPLS traffic engineering</b>	Ability to establish LSPs according to particular criteria (constraints) in order to meet specific traffic requirements rather than relying on the path chosen by the conventional IGP. The constraint-based IGP examines the available network resources and calculates the shortest path for a particular tunnel that has the resources required by that tunnel. Traffic engineering enables you to make the best use of your network resources by reducing overuse and underuse of certain links.
<b>MPS</b>	mobile point-to-point control subsystem. GSN application subsystem that controls all functionality associated with a particular connection.
<b>mroute</b>	Multicast traffic flow entry used for forwarding multicast traffic.
<b>MRRU</b>	maximum received reconstructed unit. Similar to the maximum transmission unit (MTU), but is specific to link services interfaces such as MLPPP. <i>See also</i> MTU.
<b>MS</b>	Mobile Station. Mobile device, such as a cellular phone or a mobile personal digital assistant (PDA).
<b>MSA</b>	multisource agreement. A fiber-optic transceiver module that conforms to the 10-Gigabit Ethernet standard. <i>See also</i> XENPAK Multisource Agreement, XENPAK, XENPAK module.
<b>MSC</b>	Mobile Switching Center. Provides origination and termination functions to calls from a Mobile Station user.
<b>MSDP</b>	Multicast Source Discovery Protocol. Used to connect multicast routing domains to allow the domains to discover multicast sources from other domains. It typically runs on the same router as the PIM sparse mode rendezvous point (RP).
<b>MSIN</b>	Mobile Subscriber Identification Number. A unique number to identify subscribers in a mobile network, used within the International Mobile Subscriber Identity (IMSI).
<b>MSISDN</b>	Mobile Station Integrated Services Digital Network Number. Number that callers use to reach a mobile services subscriber.
<b>MST</b>	multiple spanning-tree. A region or area within the Multiple Spanning Tree Protocol (MSTP). Spanning-tree protocols are used to prevent loops in bridge configurations. Unlike other types of STPs, MSTP can block ports selectively by VLAN. <i>See also</i> MSTP, RSTP.

<b>MSTI</b>	multiple spanning-tree instance. One of a number of spanning trees calculated by MSTP within an MST region. The MSTI provides a simple and fully connected active topology for frames classified as belonging to a VLAN that is mapped to the MSTI by the MST configuration table used by the MST bridges of that MST region. <i>See also</i> CIST.
<b>MSTP</b>	Multiple Spanning Tree Protocol. Spanning tree protocol used to prevent loops in bridge configurations. Unlike other types of STPs, MSTP can block ports selectively by VLAN. <i>See also</i> RSTP.
<b>MTBF</b>	mean time between failures. Measure of hardware component reliability.
<b>MTS</b>	mobile transport subsystem. GSN application subsystem that implements all the protocols used by the GSN.
<b>MTU</b>	maximum transmission unit. Size in bytes of the largest protocol data unit that can be passed on in a link. The standard MTU for an Ethernet link is 1500.
<b>multicast</b>	Operation of sending network traffic from one network node to multiple network nodes.
<b>multicast address</b>	Type of IPv4 and IPv6 address used for sending packets to multiple destinations. Improves network efficiency by enabling a host to transmit a packet to a targeted group of receivers.
<b>multicast backbone</b>	MBone. Interconnected set of subnetworks and routers that support the delivery of IP multicast traffic. The MBone is a virtual network that is layered on top of sections of the physical Internet.
<b>Multicast Border Gateway Protocol</b>	MBGP. Extensions to BGP that permit the configuration of a multicast routing topology within and between BGP ASs. A BGP unicast routing protocol that allows different types of addresses (known as address families) to be distributed in parallel. This allows information about the topology of IP multicast-capable routers to be exchanged separately from the topology of normal unicast routers. <i>Also known as</i> Multiprotocol Border Gateway Protocol (MP-BGP).
<b>multicast distribution tree</b>	MDT. Path between the sender (host) and the multicast group (receiver or listener).
<b>Multicast Listener Discovery</b>	MLD. Protocol that manages the membership of hosts and routers in multicast groups. An IPv6 protocol that hosts use to report their multicast group memberships to neighboring routers. Similarly, multicast routers, such as E Series routers, use MLD to discover which of their hosts belong to multicast groups.
<b>Multicast Source Discovery Protocol</b>	MSDP. Used to connect multicast routing domains to allow the domains to discover multicast sources from other domains. It typically runs on the same router as the PIM sparse mode rendezvous point (RP).
<b>multicast-scope number</b>	Number used for configuring the multicast scope. Configuring a scope number constrains the scope of a multicast session. The number value can be any hexadecimal number from 0 through F. The multicast-scope value is a number from 0 through 15, or a specified keyword with an associated prefix range. For example, link-local (value=2), corresponding prefix 224.0.0.0/24.

<b>multichassis link aggregation group</b>	MC-LAG. Multichassis link aggregation solution that enables a client device to form a logical link aggregation group (LAG) interface between two MC-LAG peers. An MC-LAG provides redundancy and load balancing between the two MC-LAG peers, multihoming support, and a loop-free Layer 2 network without running Spanning Tree Protocol (STP).
<b>multiclass LSP</b>	In Differentiated Services-aware traffic engineering, a multiclass label-switched path (LSP) functions like a standard LSP, but also allows you to reserve bandwidth for multiple class types. The experimental (EXP) bits of the MPLS header are used to distinguish between class types.
<b>multiclass MLPPP</b>	Enables multiple classes of service when you use MLPPP. Defined in RFC 2686, <i>The Multi-Class Extension to Multi-Link PPP</i> .
<b>multifield classifier</b>	Method for classifying traffic flows. Unlike a behavior aggregate (BA) classifier, a multifield classifier examines multiple fields in the packet to apply class-of-service (CoS) settings. Examples of fields that a multifield classifier examines include the source and destination address of the packet, as well as the source and destination port numbers of the packet. <i>See also</i> BA classifier, classification.
<b>multihoming</b>	Network topology that uses multiple connections between customer and provider devices to provide redundancy.
<b>Multilink Frame Relay</b>	MLFR. Logically ties together individual circuits, creating a bundle. The logical equivalent of MLPPP, MLFR is used for Frame Relay traffic instead of PPP traffic. FRF.15 and FRF.16 are two implementations of MLFR.
<b>Multilink Point-to-Point Protocol</b>	MLPPP. Enables you to bundle multiple PPP links into a single logical link between two network devices to provide an aggregate amount of bandwidth. The technique is often called bonding or link aggregation. Defined in RFC 1990, <i>The PPP Multilink Protocol (MP)</i> . <i>See also</i> PPP.
<b>multimode fiber</b>	MMF. Optical fiber supporting the propagation of multiple frequencies of light. MMF is used for relatively short distances because the modes tend to disperse over longer lengths (called modal dispersion). For longer distances, single-mode fiber (sometimes called monomode) is used. <i>See also</i> single-mode fiber.
<b>multinetting</b>	Method for adding more than one IP address to an IP interface—that is, a primary address and one or more secondary addresses.
<b>multiple exit discriminator</b>	MED. Optional BGP path attribute consisting of a metric value that is used to determine the exit point to a destination when all other factors determining the exit point are equal.
<b>Multiple Spanning Tree Protocol</b>	MSTP. Spanning tree protocol used to prevent loops in bridge configurations. Unlike other types of STPs, MSTP can block ports selectively by VLAN. <i>See also</i> RSTP.
<b>multiple spanning-tree</b>	MST. A region or area within the Multiple Spanning Tree Protocol (MSTP). Spanning-tree protocols are used to prevent loops in bridge configurations. Unlike other types of STPs, MSTP can block ports selectively by VLAN. <i>See also</i> MSTP, RSTP.

<b>multiple spanning-tree instance</b>	MSTI. One of a number of spanning trees calculated by MSTP within an MST region. The MSTI provides a simple and fully connected active topology for frames classified as belonging to a VLAN that is mapped to the MSTI by the MST configuration table used by the bridges of that MST region. <i>See also</i> CIST.
<b>multipoint connection</b>	Single-source end system connected to multiple destination end systems. Multipoint indicates a nonbroadcast multiaccess (NBMA) interface.
<b>Multiprotocol Border Gateway Protocol</b>	MP-BGP. Extensions to BGP that enable it to carry routing information for multiple Network Layer protocols instead of only for IP, including the ability to carry multicast routing information. <i>Also known as</i> Multicast Border Gateway Protocol (MBGP).
<b>Multiprotocol Label Switching</b>	MPLS. Mechanism for engineering network traffic patterns that functions by assigning short labels to network packets that describe how to forward them through the network. <i>Also known as</i> label switching. <i>See also</i> traffic engineering.
<b>multisource agreement</b>	MSA. A fiber-optic transceiver module that conforms to the 10-Gigabit Ethernet standard. <i>See also</i> XENPAK Multiservice Agreement, XENPAK, XENPAK module.
<b>multitenancy</b>	In cloud computing, many virtual machines (VMs) can run concurrently on a virtualized host whose hypervisor manages how resources are shared among the VMs. The VMs are referred to as guest, or tenant, VMs. To users of these guest VMs, it is as if they are running a single, physical machine to which resources are dedicated. Each guest VM runs its own operating system image and user space applications.
<b>munged QoS profile</b>	Set of rules used for a given forwarding interface. This set results from a process in which rules from all the QoS profiles are combined.

## N

<b>n-selector</b>	Last byte of a nonclient peer address.
<b>NaaS</b>	Network as a Service. Virtualized network infrastructure that is leased by a cloud provider to customers as needed. <i>See also</i> cloud computing, IaaS, PaaS, SaaS.
<b>NAC</b>	Network Access Control. Security feature that uses one or more forms of authentication to control which users and devices can access a network, and one or more forms of authorization and policy enforcement to control what resources—servers, applications, and stored data—users can access.
<b>name server</b>	A server that implements a name service protocol. For example, a Domain Name System (DNS) server might translate the domain name <code>www.juniper.net</code> to the IP address <code>192.168.12.45</code> .
<b>named path</b>	Junos OS syntax that specifies a portion of or the entire network path that should be used as a constraint in signaling an MPLS label-switched path.
<b>namespace</b>	In Media Flow Controller, a defined collection of delivery policies for different categories of content or domains.

<b>NAPT</b>	Network Address Port Translation. Method that translates the addresses and transport identifiers of many private hosts into a few external addresses and transport identifiers to make efficient use of globally registered IP addresses. NAPT extends the level of translation beyond that of basic NAT. <i>Also known as</i> PAT. <i>See also</i> NAT, PAT.
<b>NAS</b>	<ul style="list-style-type: none"> <li>• network-attached storage. Dedicated fileserver and storage for multiple clients that enables file sharing among multiple users.</li> <li>• network access server. Device that provides connections to a single user, to a network or subnetwork, and to interconnected networks. In reference to TACACS+, the NAS is the E Series router.</li> </ul>
<b>NAT</b>	Network Address Translation. Method of concealing a set of host addresses on a private network behind a pool of public addresses. Using NAT allows conservation of registered IP addresses within private networks, simplifies IP address management through a form of transparent routing, and increases network privacy by hiding internal IP addresses from external networks. It can be used as a security measure to protect the host addresses from direct targeting in network attacks. <i>Also known as</i> Network Address Translator. <i>See also</i> bidirectional NAT, traditional NAT, twice NAT.
<b>NAT object</b>	Global object that contains references to device-specific NAT configurations, enabling multiple devices to share a single object. In NSM, use the Device Manager to configure NAT for each device, then create a global NAT object that includes the device-specific NAT configuration. Use global NAT objects in security policies and VPNs; when you update a device, that device automatically replaces the global NAT object with its device-specific NAT configuration.
<b>NAT passthrough mode</b>	NAT mode in which the router does not check UDP checksums. Used when a NAT device can change the IP address while the UDP header is encrypted, and then the UDP checksum cannot be recalculated. Using this mode for a single remote user does not compromise security, because IPsec protects UDP with an authentication algorithm far stronger than UDP checksums. However, NAT passthrough mode does not support secure access to the router by multiple remote users at locations such as hotels or airports where a NAT device resides between the router and the remote users. Additionally, this mode does not provide secure access for groups of remote users at corporate locations where a NAT device resides between the company's intranet and the public IP network. <i>See also</i> NAT-T.
<b>NAT-T</b>	Network Address Translation traversal. IETF standard that allows secure router access for multiple remote hosts behind a NAT device. <i>See also</i> NAT passthrough mode.
<b>National Institute of Standards and Technology</b>	NIST. Nonregulatory U.S. federal agency whose mission is to develop and promote measurement, standards, and technology.
<b>NBMA</b>	nonbroadcast multiaccess. Network that connects two or more devices but does not permit broadcast or multicast addressing. <i>See also</i> BMA.
<b>NCP</b>	Network Control Protocol. Traffic controller used to establish and configure different Network Layer protocols for the Point-to-Point Protocol (PPP).



<b>NDP</b>	Neighbor Discovery Protocol. Used by IPv6 nodes on the same link to discover each other's presence, determine each other's Link Layer addresses, find routers, and maintain reachability information about the paths to active neighbors. NDP is defined in RFC 2461 and is equivalent to the Address Resolution Protocol (ARP) used with IPv4. <i>See also</i> ARP.
<b>NEBS</b>	Network Equipment Building System. Set of guidelines originated by Bell Laboratories in the 1970s to assist equipment manufacturers in designing products that were compatible with the telecom environment.
<b>neighbor</b>	Adjacent system reachable by traversing a single subnetwork; an immediately adjacent router. <i>Also known as</i> peer. <i>See also</i> adjacency.
<b>Neighbor Discovery</b>	Method for determining the Link Layer addresses of neighbors that reside on attached links and overriding invalid cache entries. Neighbor Discovery is not a true protocol, but routers and hosts (nodes) use Neighbor Discovery messages to determine the Link Layer addresses of neighbors that reside on attached links and to overwrite invalid cache entries. Hosts also use it to find neighboring routers that can forward packets on their behalf, and to actively track the ability to reach neighbors.
<b>Neighbor Discovery Protocol</b>	NDP. Used by IPv6 nodes on the same link to discover each other's presence, determine each other's Link Layer addresses, find routers, and maintain reachability information about the paths to active neighbors. NDP is defined in RFC 2461 and is equivalent to the Address Resolution Protocol (ARP) used with IPv4. <i>See also</i> ARP.
<b>neighboring routers</b>	Routers that have interfaces to a common network.
<b>nested profile assignment</b>	Profile that references another profile that configures attributes for a dynamic upper-interface encapsulation type.
<b>NET</b>	network entity title. An ISO network address used by CLNS networks; an identifier of a network entity in an end system or intermediate system. A NET consists of an area address (routing domain), system identifier, and selector.
<b>NetBIOS</b>	network basic input/output system. Application programming interface (API) used by programs on a LAN. NetBIOS provides a uniform set of commands for requesting the lower-level services required to manage names, conduct sessions, and send datagrams between nodes on a network.
<b>NETCONF</b>	Network Configuration Protocol. IETF standard that defines a protocol and an API for network management in a way that closely mirrors the usual configuration methods of the managed devices. NETCONF communications are encoded in XML and are sent through remote procedure calls (RPCs) by using a reliable and secure transport method. <i>See also</i> RPC.
<b>netmask</b>	32-bit mask that divides an IP address into subnets and specifies the available hosts in a network.
<b>NetScreen Gatekeeper Protocol</b>	NSGP. Juniper Networks proprietary peer-to-peer protocol that enables a security device to act as a server for voice-over-IP (VoIP) traffic.

<b>NetScreen Redundancy Protocol</b>	NRSP. Proprietary protocol that provides configuration, run time object (RTO) redundancy, and a device failover mechanism for security devices in a high availability (HA) cluster.
<b>Network Access Control</b>	NAC. Security feature that uses one or more forms of authentication to control which users and devices can access a network, and one or more forms of authorization and policy enforcement to control what resources—servers, applications, and stored data—users can access.
<b>network access server</b>	NAS. Device that provides connections to a single user, to a network or subnetwork, and to interconnected networks. In reference to TACACS+, the NAS is the E Series router.
<b>network adapter</b>	Computer hardware that connects a computer to a network. <i>Also known as</i> network interface card, network interface controller, LAN adapter.
<b>Network Address Port Translation</b>	NAPT. Method that translates the addresses and transport identifiers of many private hosts into a few external addresses and transport identifiers to make efficient use of globally registered IP addresses. NAPT extends the level of translation beyond that of basic NAT. <i>Also known as</i> PAT. <i>See also</i> NAT, PAT.
<b>Network Address Translation traversal</b>	NAT-T. IETF standard that allows secure router access for multiple remote hosts behind a NAT device. <i>See also</i> NAT passthrough mode.
<b>Network and Security Manager</b>	NSM. Juniper Networks product for centralized management of security appliances designed to reduce the cost of managing security by minimizing repetitive tasks and delegating administrative responsibilities, among other features.
<b>Network as a Service</b>	NaaS. Virtualized network infrastructure that is leased by a cloud provider to customers as needed. <i>See also</i> cloud computing, Infrastructure as a Service, Platform as a Service, Software as a Service.
<b>network as system of record</b>	NSOR. When you choose NSOR mode, Junos Space Network Management Platform automatically synchronizes out-of-band commit operations (with timestamps) on the devices with the Junos Space Network Management Platform database. If you disable the automatic resynchronization feature, you can explicitly synchronize out-of-band commit operations from the Junos Space user interface.
<b>network basic input/output system</b>	NetBIOS. Application programming interface (API) used by programs on a LAN. NetBIOS provides a uniform set of commands for requesting the lower-level services required to manage names, conduct sessions, and send datagrams between nodes on a network.
<b>Network Configuration Protocol</b>	NETCONF. IETF standard that defines a protocol and an API for network management in a way that closely mirrors the usual configuration methods of the managed devices. NETCONF communications are encoded in XML and are sent through remote procedure calls (RPCs) by using a reliable and secure transport method. <i>See also</i> RPC.
<b>Network Control Protocol</b>	NCP. Traffic controller used to establish and configure different Network Layer protocols for the Point-to-Point Protocol (PPP).

<b>Network Director</b>	Junos Space application that provides a comprehensive automated network management solution for the enterprise data center and campus. Network Director enables network and cloud administrators to visualize, analyze, and control their entire enterprise network—data center and campus, physical and virtual infrastructure, virtual overlay networks, and wired and wireless—through a single pane of glass.
<b>network element</b>	Physical or virtual networking device, or specific feature offered by a networking device, that is used for providing a network service. In SNMP, <i>also known as</i> managed device.
<b>network entity title</b>	NET. An ISO network address used by CLNS networks; an identifier of a network entity in an end system or intermediate system. A NET consists of an area address (routing domain), system identifier, and selector.
<b>Network Equipment Building System</b>	NEBS. Set of guidelines originated by Bell Laboratories in the 1970s to assist equipment manufacturers in designing products that were compatible with the telecom environment.
<b>Network File System</b>	A protocol that allows a user on a client computer to access files over a network similarly to how local storage is accessed by providing transparent remote access to shared files across networks. It is a standard defined in several RFCs, first appearing in RFC 1094, <i>NFS: Network File System Protocol Specification</i> .
<b>Network Functions Virtualization</b>	NFV. Standard IT virtualization technology that consolidates many network equipment types onto standard-architecture high-volume servers, switches, and storage. NFV involves designing, deploying, and managing network functions in software that can be moved to, or instantiated in, various locations in the network as required, without the need to install purpose-built hardware. Although NFV complements software-defined networking (SDN), NFV can be deployed without SDN and vice versa. <i>See also</i> SDN.
<b>Network Information Center</b>	NIC. Internet authority responsible for assigning Internet-related numbers, such as IP addresses and autonomous system (AS) numbers. <i>See also</i> IANA.
<b>network interface</b>	Interface, such as an Ethernet or SONET/SDH interface, that primarily provides traffic connectivity. <i>See also</i> PIC, services interface.
<b>network interface card</b>	NIC. Computer hardware that connects a computer to a network. <i>Also known as</i> LAN adapter, network adapter, network interface controller.
<b>network interface controller</b>	NIC. Computer hardware that connects a computer to a network. <i>Also known as</i> LAN adapter, network adapter, network interface card.
<b>Network Layer</b>	Third level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer performs the basic task of routing data across the network (getting packets of data from source to destination). <i>Also known as</i> Layer 3.
<b>Network Layer reachability information</b>	NLRI. Information carried in BGP packets and used by MBGP.
<b>network link advertisement</b>	OSPF link-state advertisement flooded throughout a single area by designated routers to describe all routers attached to the network.

<b>network loopback</b>	Ability to loop the data back toward the router on supported line modules. Also sends an alarm indication signal out toward the network. <i>Also known as</i> loopback, local loopback, remote loopback.
<b>network LSA</b>	OSPF link-state advertisement sent by the designated router on a broadcast or NBMA segment. It advertises the subnet associated with the designated router's segment.
<b>network management station</b>	NMS, network management system. System that enables a user to configure and monitor network elements.
<b>network management system</b>	NMS, network management station. System that enables a user to configure and monitor network elements.
<b>network mask</b>	Number of bits of the network address used to separate the network information from the host information in a Class A, Class B, or Class C IP address, allowing the creation of subnetworks. In binary notation, a series of 1s followed by a series of contiguous 0s. The 1s represent the network number; the 0s represent the host number. Use of masks can divide networks into subnetworks by extending the network portion of the address into the host portion. Subnetting increases the number of subnetworks and reduces the number of hosts. <i>Also known as</i> mask, subnet mask.
<b>network service access point</b>	NSAP. Network connection identified with a hierarchical network address, specifying the point at which network services are made available to a Transport Layer entity in the OSI Reference Model. A valid NSAP address is unique and unambiguously identifies a single system. <i>Also known as</i> ISO address.
<b>network service access point identifier</b>	NSAPI. Unique NSAP identifier that unambiguously identifies a single system.
<b>network summary LSA</b>	OSPF link-state advertisement sent by an ABR to advertise internal OSPF routing knowledge across an area boundary. <i>See also</i> ABR.
<b>Network Time Protocol</b>	NTP. Used to synchronize the system clocks of hosts on the Internet to Universal Coordinated Time (UTC). A router can update its clock automatically by configuring it as a Network Time Protocol (NTP) client. Using NTP enables the system to record accurate times of events. You can view the log file of events to monitor the status of the network.
<b>network-attached storage</b>	NAS. Dedicated fileserver and storage for multiple clients that enables file sharing among multiple users.
<b>network-to-network interface</b>	NNI. Makes connections possible between users connected to different Frame Relay networks. These separate Frame Relay networks can be considered as subnetworks within a complete network service.
<b>network.conf</b>	Default configuration file for autoinstallation, in which you specify IP addresses and associated hostnames for devices on the network.
<b>Neutron</b>	OpenStack SDN networking project focused on delivering Network as a Service (NaaS) between interface devices managed by other OpenStack services.

<b>Newton</b>	Open-source enterprise cloud platform and the fourteenth release of OpenStack. Newton offers greater scalability, resiliency, and user experience to support a larger variety of workloads.
<b>NFS</b>	Network File System. A protocol that allows a user on a client computer to access files over a network similarly to how local storage is accessed by providing transparent remote access to shared files across networks. It is a standard defined in several RFCs, first appearing in RFC 1094, <i>NFS: Network File System Protocol Specification</i> .
<b>NFV</b>	Network Functions Virtualization. Standard IT virtualization technology that consolidates many network equipment types onto standard-architecture high-volume servers, switches, and storage. NFV involves designing, deploying, and managing network functions in software that can be moved to, or instantiated in, various locations in the network as required, without the need to install purpose-built hardware. Although NFV complements software-defined networking (SDN), NFV can be deployed without SDN and vice versa. <i>See also</i> SDN.
<b>NIC</b>	<ul style="list-style-type: none"> <li>• Network Information Center. Internet authority responsible for assigning Internet-related numbers, such as IP addresses and autonomous system (AS) numbers. <i>See also</i> IANA.</li> <li>• network interface card. Computer hardware that connects a computer to a network. <i>Also known as</i> LAN adapter, network adapter, network interface controller.</li> <li>• network interface controller. Computer hardware that connects a computer to a network. <i>Also known as</i> LAN adapter, network adapter, network interface card.</li> </ul>
<b>NIST</b>	National Institute of Standards and Technology. Nonregulatory U.S. federal agency whose mission is to develop and promote measurement, standards, and technology.
<b>NLRI</b>	Network Layer reachability information. Information carried in BGP packets and used by MBGP.
<b>NMS</b>	network management system, network management station. System that enables a user to configure and monitor network elements.
<b>NNI</b>	network-to-network interface. Makes connections possible between users connected to different Frame Relay networks. These separate Frame Relay networks can be considered as subnetworks within a complete network service.
<b>node</b>	A back-end server with an associated port, which receives requests sent to it by the Junos App Balancer and responds with the requested content.
<b>non-PPP equal access</b>	Method of allowing remote access in which the router provides IP addresses to subscribers' computers through the Dynamic Host Configuration Protocol (DHCP). This method is particularly convenient for broadband (cable and DSL) environments or environments that use bridged Ethernet over ATM, because network operators can support one central system rather than an individual PPPoE client on each subscriber's computer.

<b>nonbroadcast multiaccess</b>	NBMA. Network that connects two or more devices but does not permit broadcast or multicast addressing. <i>See also</i> BMA.
<b>nonbroadcast network</b>	Network that has no broadcast capability but supports more than two routers.
<b>nonce</b>	Random value used to detect and protect against replay attacks (IPsec).
<b>nonclient peer</b>	In a BGP route reflection, a BGP peer that is not a member of a cluster. <i>See also</i> client peer.
<b>nonstop active routing</b>	NSR. High availability feature that allows a routing platform with redundant Routing Engines to preserve routing information on the backup Routing Engine and switch over from the primary Routing Engine to the backup Routing Engine without alerting peer nodes that a change has occurred. NSR uses the graceful Routing Engine switchover (GRES) infrastructure to preserve interface, kernel, and routing information. <i>Also known as</i> nonstop routing (NSR).
<b>nonstop forwarding</b>	Process that allows a router whose control plane is undergoing a restart to continue to forward traffic while recovering its state from neighboring routers. Without graceful restart, a control plane restart disrupts services provided by the router. Implementation varies by protocol. <i>Also known as</i> graceful restart. <i>See also</i> cold restart, warm restart.
<b>nonstop software upgrade</b>	NSSU. Software upgrade for switching platforms with redundant Routing Engines and for most Virtual Chassis or Virtual Chassis Fabric from one Junos OS release to another with no disruption on the control plane and with minimal disruption to network traffic. A switching architecture requires a different approach than the one for a routing architecture to preserve control plane information. <i>See also</i> ISSU, TISSU, and unified ISSU.
<b>nonvolatile storage</b>	NVS. Memory that retains stored information even when power is lost to the device.
<b>northbound API</b>	API through which a software component communicates with the software component that is one level above it in a hierarchical architecture. <i>See also</i> southbound API.
<b>northbound interface</b>	Interface through which a component communicates with the component that is one level above it in a hierarchical architecture of computers or network components. <i>See also</i> southbound interface.
<b>NorthStar Controller</b>	Flexible traffic-engineering solution that enables granular visibility and control of IP/MPLS flows in large service provider and enterprise networks.
<b>not-so-stubby area</b>	NSSA. In OSPF, a type of stub area in which external routes can be flooded.
<b>notification</b>	In SNMP, a message that indicates a status change (equivalent to a trap).
<b>notification cell</b>	Junos OS data structure generated by the Distribution Buffer Manager ASIC that represents the header contents of an IP packet. The Internet Processor ASIC uses the notification cell to perform a forwarding table lookup.

<b>Notification message</b>	BGP message that informs a neighbor about an error condition, and then in some cases terminates the BGP peering session.
<b>Nova</b>	Part of the OpenStack open-source software that is responsible for the administration of an Infrastructure as a Service (IaaS) platform.
<b>NRSP</b>	NetScreen Redundancy Protocol. Proprietary protocol that provides configuration, run time object (RTO) redundancy, and a device failover mechanism for security devices in a high availability (HA) cluster.
<b>NSAP</b>	network service access point. Network connection identified with a hierarchical network address, specifying the point at which network services are made available to a Transport Layer entity in the OSI Reference Model. A valid NSAP address is unique and unambiguously identifies a single system. <i>Also known as</i> ISO address.
<b>NSAPI</b>	network service access point identifier. Unique NSAP identifier that unambiguously identifies a single system.
<b>nsd</b>	Network security process that interprets, executes, and manages the configuration of extended interface attributes, policies, zones, address books, firewall screens, NAT, and other network security treatments.
<b>NSF</b>	nonstop forwarding. Process that allows a router whose control plane is undergoing a restart to continue to forward traffic while recovering its state from neighboring routers. Without graceful restart, a control plane restart disrupts services provided by the router. Implementation varies by protocol. <i>Also known as</i> graceful restart. <i>See also</i> cold restart, warm restart.
<b>NSGP</b>	NetScreen Gatekeeper Protocol. Juniper Networks proprietary peer-to-peer protocol that enables a security device to act as a server for voice-over-IP (VoIP) traffic.
<b>NSM</b>	Network and Security Manager. Juniper Networks product for centralized management of security appliances designed to reduce the cost of managing security by minimizing repetitive tasks and delegating administrative responsibilities, among other features.
<b>NSOR</b>	network as system of record. When you choose NSOR mode, Junos Space Network Management Platform automatically synchronizes out-of-band commit operations (with timestamps) on the devices with the Junos Space Network Management Platform database. If you disable the automatic resynchronization feature, you can explicitly synchronize out-of-band commit operations from the Junos Space user interface.
<b>NSR</b>	nonstop active routing. High availability feature that allows a routing platform with redundant Routing Engines to preserve routing information on the backup Routing Engine and switch over from the primary Routing Engine to the backup Routing Engine without alerting peer nodes that a change has occurred. NSR uses the graceful Routing Engine switchover (GRES) infrastructure to preserve interface, kernel, and routing information. <i>Also known as</i> nonstop routing (NSR).
<b>NSSA</b>	not-so-stubby area. In OSPF, a type of stub area in which external routes can be flooded.

<b>NSSU</b>	nonstop software upgrade. Software upgrade for switching platforms with redundant Routing Engines and for most Virtual Chassis or Virtual Chassis Fabric from one Junos OS release to another with no disruption on the control plane and with minimal disruption to network traffic. A switching architecture requires a different approach than the one for a routing architecture to preserve control plane information. <i>See also</i> ISSU, TISSU, and unified ISSU.
<b>NTP</b>	Network Time Protocol. Used to synchronize the system clocks of hosts on the Internet to Universal Coordinated Time (UTC). A router can update its clock automatically by configuring it as a Network Time Protocol (NTP) client. Using NTP enables the system to record accurate times of events. You can view the log file of events to monitor the status of the network.
<b>null interface</b>	Method on a router for handling undesired traffic. The null interface is always up, cannot be deleted, and cannot forward or receive traffic. It acts as a data sink; you can avoid the overhead involved with using access lists by directing undesired network traffic to the null interface.
<b>Null Register message</b>	PIM message sent by the first-hop router to the rendezvous point (RP). The message informs the RP that the local source is still actively sending multicast packets into the network. <i>See also</i> RP.
<b>numeric range match conditions</b>	Use of numeric values (protocol and port numbers) in the header of an IP packet to match criteria in a firewall filter.
<b>NVS</b>	nonvolatile storage. Memory that retains stored information even when power is lost to the device.
<b>NVS card</b>	Nonvolatile storage memory card on an SRP module that stores system software, configuration files, and core dumps.
<b>O</b>	
<b>OAC</b>	Odyssey Access Client. The UAC legacy client, OAC runs on endpoints to provide secure communication, either as an agent that can access resources behind an Infranet Enforcer or as an 802.1X supplicant.
<b>Oakley</b>	Key determination protocol based on the Diffie-Hellman algorithm that provides added security, including authentication. Oakley was the key-exchange algorithm mandated for use with the initial version of ISAKMP, although other algorithms can be used. Oakley describes a series of key exchanges called modes, and details the services provided by each, for example, Perfect Forward Secrecy for keys, identity protection, and authentication. <i>See also</i> ISAKMP.
<b>OAM</b>	Operation, Administration, and Maintenance. ATM Forum specification for monitoring ATM virtual connections, verifying that the connection is up and that the router is operational. A set of Ethernet connectivity specifications and functions providing connectivity monitoring, fault detection and notification, fault verification, fault isolation, loopback, and remote defect identification. The primary specifications defining Ethernet OAM are IEEE 902.3ah link-fault management (LFM) and IEEE 902.1ag Ethernet connectivity-fault management (CFM). <i>See also</i> CFM, LFM.



<b>object</b>	Represents reusable information, such as network addresses, individual users and user groups, and commonly used configuration data. In NSM, objects are shared objects, meaning they are shared between the global domain and all subdomains. Objects are the building blocks of the NSM management system.
<b>Object Manager</b>	Module of the NSM user interface that lets you create and manage the objects used in your NSM system.
<b>objects table (mteObjectsTable)</b>	SNMP term for a table that defines objects to add to event messages. You can create a list of user-specified objects and bind them to a trigger event. This can provide a snapshot of other values on a router when the trigger occurs. You can bind objects to a specific trigger, a type of test (for example, existence or Boolean tests), or a type of event (for example, rising or falling events). One of the three parts of the Event MIB. <i>See also</i> event table (mteEventTable), trigger table (mteTriggerTable).
<b>OC</b>	optical carrier. In SONET, the OC level indicates the transmission rate of digital signals on optical fiber.
<b>OC12</b>	SONET line with a transmission speed of 622 Mbps using fiber-optic cables.
<b>OC3</b>	SONET line with a transmission speed of 155.52 Mbps (payload of 150.336 Mbps) using fiber-optic cables. For SDH interfaces, OC3 is also known as STM1.
<b>ODBC</b>	Open Database Connectivity. Standard or open application programming interface (API) for accessing a database.
<b>ODL</b>	OpenDaylight. Hosted by the Linux Foundation, OpenDaylight is an open-source platform for network programmability aimed at enhancing software-defined networking (SDN).
<b>Odyssey Access Client</b>	OAC. The UAC legacy client, OAC runs on endpoints to provide secure communication, either as an agent that can access resources behind an Infranet Enforcer or as an 802.1X supplicant.
<b>OFDMA</b>	orthogonal frequency-division multiple access. Multiuser version of the orthogonal frequency-division multiplexing (OFDM) digital modulation scheme. Multiple access is achieved in OFDMA by assigning subsets of subcarriers to individual users. This assignment of subsets allows simultaneous low data rate transmission from several users. <i>See also</i> single-carrier frequency-division multiple access (SC-FDMA).
<b>OIF</b>	outgoing interface. Used by multicast functions within a router to determine which egress ports to use for forwarding multicast groups.
<b>OIR</b>	online insertion and removal. Ability to install or remove certain modules (SRE, NIC, and so on) on the mid-range SRX Series Services Gateway without having to power off the device. Each OIR-capable model will have an OFFLINE button that is pressed to take the module offline for removal.
<b>OMA</b>	optical modulation amplitude. Difference between two optical power levels of a digital signal generated by an optical source—for example, a laser diode.

<b>on-demand incident</b>	Type of Juniper Message Bundle (JMB) that can be created for specific devices, using Service Now, without the need for an event to have triggered an incident.
<b>on-premises hub</b>	Automation endpoint that is part of customer premises equipment (CPE) at a headquarters or a main branch acting as a hub point for overlay connections from many spoke devices. <i>See also</i> on-premises spoke, on-premises site.
<b>on-premises network services</b>	Network services offered to users with one or more linked network functions, service configuration parameters, service-chaining templates, and customer-specific service catalogs. The services can be managed on your own in-house cloud in a private enterprise data center.
<b>on-premises site</b>	Site located within the tenant location. All virtualized network functions (VNFs) reside on a customer premises equipment (CPE) device located at a customer's site. <i>See also</i> on-premises hub, on-premises spoke.
<b>on-premises spoke</b>	Automation endpoint that is part of customer premises equipment (CPE) at some physical location such as a branch office or a point-of-sales location. Typically, these points are connected using overlay connections to hub sites. <i>See also</i> on-premises hub, on-premises site.
<b>one-rate rate-limit profile</b>	Profile in which, when the committed rate is exceeded, the rate limiter drops a single packet and then resumes transmission up to a configurable burst window. <i>See also</i> rate-limit profile, two-rate rate-limit profile.
<b>online insertion and removal</b>	OIR. Ability to install or remove certain modules (SRE, NIC, and so on) on the SRX mid-range services gateway without having to power off the device. Each OIR-capable model will have an OFFLINE button that is pressed to take the module offline for removal.
<b>OOG</b>	out-of-gain. Alarm generated for the optical inline amplifier (optical ILA) when an out-of-gain (OOG) condition occurs in the forward direction (that is, from the optical supervisory channel A [OSC A] to OSC B) or in the reverse direction (that is, from OSC B to OSC A). <i>See also</i> optical ILA, OSC.
<b>OOP</b>	out-of-power. Alarm generated for the optical inline amplifier (optical ILA) when an out-of-power (OOP) condition occurs in the forward direction (that is, from the optical supervisory channel A [OSC A] to OSC B) or in the reverse direction (that is, from OSC B to OSC A). <i>See also</i> optical ILA, OSC.
<b>op script</b>	operational script. Extensible Stylesheet Language for Transformations (XSLT) script written to automate network troubleshooting and network management. Op scripts can perform any function available through Junos XML protocol remote procedure calls (RPCs).
<b>opaque LSAs</b>	LSAs that provide a generalized way of extending OSPF. The router generates opaque LSAs to carry traffic engineering information, accepts them from other routers, and floods them accordingly. OSPF uses the traffic engineering information to build a database from which paths can be computed for MPLS label-switched paths.

<b>Open Database Connectivity</b>	ODBC. Standard or open application programming interface (API) for accessing a database.
<b>Open message</b>	BGP message that allows two neighbors to negotiate the parameters of the peering session.
<b>Open Shortest Path First</b>	OSPF. Dynamic routing protocol intended to operate within a single Autonomous System. It advertises the states of local network links within the AS and makes routing decisions based on the shortest-path-first (SPF) algorithm (also referred to as the Dijkstra algorithm). OSPF is a link-state routing protocol, similar to the Intermediate System-to-Intermediate System (IS-IS) routing protocol. OSPF was designed expressly for the TCP/IP Internet environment, including explicit support for classless interdomain routing (CIDR) and the tagging of externally derived routing information. <i>See also</i> AS.
<b>Open Systems Interconnection</b>	OSI. Standard reference model for how messages are transmitted between two points on a network.
<b>Open Virtualization Archive</b>	OVA. Compressed archive file (in TAR format) of an Open Virtualization Format (OVF) package. An OVF package contains the components (operating system, middleware, and software applications) needed to install a virtual appliance or a virtual machine. <i>See also</i> Open Virtualization Format.
<b>Open Virtualization Format</b>	OVF. Platform-independent packaging and distribution method for software to be run on virtual machines (VMs). The OVF supports industry-standard content verification and integrity checking and provides a basic scheme for managing software licensing. As described by the standard, the OVF defines an <i>open, secure, portable, efficient, and extensible format for the packaging and distribution of software to be run in virtual machines</i> . An OVF package consists of several files placed in one directory. <i>See also</i> Open Virtualization Archive.
<b>Open vSwitch Database</b>	OVSDB. Protocol that provides a means through which software-defined networking (SDN) controllers and Juniper Networks devices that support OVSDB can communicate. In an OVSDB topology, SDN controllers and Juniper Networks devices exchange control and statistical information, enabling virtual machine (VM) traffic from entities in a virtual network to be forwarded to entities in a physical network and vice versa.
<b>OpenConfig</b>	Collaborative effort in the networking industry to move toward a more dynamic, programmable method for configuring and managing multivendor networks. OpenConfig supports the YANG data models and uses RPC frameworks to facilitate communications between a client and the router.
<b>OpenConfirm</b>	BGP neighbor state that shows that a valid Open message was received from the remote peer.
<b>OpenDaylight</b>	ODL. Hosted by the Linux Foundation, OpenDaylight is an open-source platform for network programmability aimed at enhancing software-defined networking (SDN).
<b>OpenSent</b>	BGP neighbor state that shows that an Open message was sent to the remote peer and the local router is waiting for an Open message to be returned.

<b>OpenStack</b>	Open-source cloud operating system that combines and controls compute, storage, and networking resources for public and private clouds.
<b>Operation, Administration, and Maintenance</b>	OAM. ATM Forum specification for monitoring ATM virtual connections, verifying that the connection is up and that the router is operational. A set of Ethernet connectivity specifications and functions providing connectivity monitoring, fault detection and notification, fault verification, fault isolation, loopback, and remote defect identification. The primary specifications defining Ethernet OAM are IEEE 902.3ah link-fault management (LFM) and IEEE 902.1ag Ethernet connectivity-fault management (CFM). <i>See also</i> CFM, LFM.
<b>operational mode</b>	Junos OS mode that allows a user to view statistics and information about the router's current operating status.
<b>operational mode command</b>	Type of command that you use to monitor and control the operation of a device running Junos OS. Operational mode commands exist in a hierarchical structure. For example, the <b>show</b> command displays various types of information about the system and its environment. <i>Also known as</i> command.
<b>operational script</b>	op script. Extensible Stylesheet Language for Transformations (XSLT) script written to automate network troubleshooting and network management. Op scripts can perform any function available through Junos XML protocol remote procedure calls (RPCs).
<b>operational support systems</b>	OSS. In telecommunications, software applications and occasionally hardware devices that service providers use to support back-office activities, such as order management. <i>Also known as</i> operations support systems. <i>See also</i> back office, BSS.
<b>operational virtual router</b>	For a secure IP tunnel, the VR in which a secure IP tunnel exists. <i>See also</i> transport virtual router.
<b>optical carrier</b>	OC. In SONET, the OC level indicates the transmission rate of digital signals on optical fiber.
<b>optical ILA</b>	optical inline amplifier. Fixed-configuration, standalone erbium-doped fiber amplifier (EDFA) with dual AC or DC power supplies. The optical ILA supports bidirectional optical inline amplification. It provides periodic amplification of the signal to enable long-distance transmission. Optical ILAs are typically placed 50 miles (80 km) through 62 miles (100 km) apart along the length of the fiber.
<b>optical inline amplifier</b>	optical ILA. Fixed-configuration, standalone erbium-doped fiber amplifier (EDFA) with dual AC or DC power supplies. The optical ILA supports bidirectional optical inline amplification. It provides periodic amplification of the signal to enable long-distance transmission. Optical ILAs are typically placed 50 miles (80 km) through 62 miles (100 km) apart along the length of the fiber.
<b>optical modulation amplitude</b>	OMA. Difference between two optical power levels of a digital signal generated by an optical source—for example, a laser diode.

<b>optical supervisory channel</b>	OSC. Dedicated communication channel used for the remote management of optical network elements. The channel specifically carries data between sites for monitoring and controlling all specifications in a dense wavelength-division multiplexing (DWDM) system.
<b>orchestration</b>	Automated arrangement, coordination, and management of complex computer systems, middleware, and services. Orchestration manages cloud-based and on-premises networks to align network resources with customer service and business requirements. Orchestration uses automation to provide services by defining policies and service levels and then applying the policies and service levels by using applications that have automated workflows. An example of orchestration is a scenario where a customer uses a Web application to request new services that require network resources and the application automatically configures and implements the customer's request.
<b>ordered control</b>	MPLS label distribution method whereby an LSR does not advertise a label for a FEC unless it is the egress LSR for the FEC, or until it has received a label for the FEC from its downstream peer. In this manner, the entire LSP is established before MPLS begins to map data onto the LSP, preventing inappropriate (early) data mapping from occurring on the first LSR in the path. JunosE Software does not support ordered control when LDP or BGP is the signaling protocol. <i>See also</i> downstream-on-demand, independent control.
<b>ORF</b>	outbound route filter, outbound route filtering. BGP capability that enables a BGP speaker to send its own outbound route filter to a BGP peer. The peer installs that filter and applies it after any locally installed outbound route filter is applied. In this manner, the BGP peer sends the BGP speaker only routes that are desired by that speaker, minimizing the number of unwanted routing updates that are sent.
<b>origin</b>	In BGP, attribute that describes the source of the route.
<b>origin library</b>	The source of media content, typically a server located at a data center.
<b>origin server</b>	The media content server. Juniper Networks Media Flow Controller can be configured as an origin server.
<b>orlonger</b>	Junos OS routing policy match type that represents all routes more specific than the given subnet, including the given subnet itself. It is similar to a mathematical greater-than-or-equal-to operation.
<b>orthogonal frequency-division multiple access</b>	OFDMA. Multiuser version of the orthogonal frequency-division multiplexing (OFDM) digital modulation scheme. Multiple access is achieved in OFDMA by assigning subsets of subcarriers to individual users. This assignment of subsets allows simultaneous low data rate transmission from several users. <i>See also</i> single-carrier frequency-division multiple access (SC-FDMA).
<b>OSC</b>	optical supervisory channel. Dedicated communication channel used for the remote management of optical network elements. The channel specifically carries data between sites for monitoring and controlling all specifications in a dense wavelength-division multiplexing (DWDM) system.
<b>OSI</b>	Open Systems Interconnection. Standard reference model for how messages are transmitted between two points on a network.

<b>OSI Model</b>	Open Systems Interconnection Reference Model. A network design reference model consisting of seven layers, each with a defined function. Each layer provides services to the layer above and receives services from the layer below. The OSI Model is often compared to the more descriptive (versus prescriptive) TCP/IP stack model.
<b>OSPF</b>	Open Shortest Path First. Dynamic routing protocol intended to operate within a single Autonomous System. It advertises the states of local network links within the AS and makes routing decisions based on the shortest-path-first (SPF) algorithm (also referred to as the Dijkstra algorithm). OSPF is a link-state routing protocol, similar to the Intermediate System-to-Intermediate System (IS-IS) routing protocol. OSPF was designed expressly for the TCP/IP Internet environment, including explicit support for classless interdomain routing (CIDR) and the tagging of externally derived routing information. <i>See also</i> AS.
<b>OSPF hello packet</b>	Message sent by each OSPF router to each adjacent router. It is used to establish and maintain the router's neighbor relationships.
<b>OSS</b>	operational support systems, operations support systems. In telecommunications, software applications and occasionally hardware devices that service providers use to support back-office activities, such as order management. <i>See also</i> back office, BSS.
<b>OSS/BSS</b>	In telecommunications, software applications that coordinate all business support systems (BSS) and operational support systems (OSS) activities for network services. <i>See also</i> BSS, OSS.
<b>OTASP</b>	Over-the-Air Service Provisioning. Activation method used by cellular network providers such as Verizon for CDMA EV-DO 3G wireless modem cards. <i>See also</i> IOTA.
<b>out-of-band change</b>	Change made to the device configuration from the device CLI or by any method other than by using the Junos Space user interface. <i>See also</i> in-band change.
<b>out-of-band management</b>	Use of a dedicated channel for managing network devices. Most Juniper Networks devices have a management port that you can use to connect the device—by using an RJ-45 cable connector—to a management device for out-of-band management.
<b>out-of-gain</b>	OOG. Alarm generated for the optical inline amplifier (optical ILA) when an out-of-gain (OOG) condition occurs in the forward direction (that is, from the optical supervisory channel A [OSC A] to OSC B) or in the reverse direction (that is, from OSC B to OSC A). <i>See also</i> optical ILA, OSC.
<b>out-of-power</b>	OOP. Alarm generated for the optical inline amplifier (optical ILA) when an out-of-power (OOP) condition occurs in the forward direction (that is, from the optical supervisory channel A [OSC A] to OSC B) or in the reverse direction (that is, from OSC B to OSC A). <i>See also</i> optical ILA, OSC.
<b>outbound route filter (filtering)</b>	ORF. BGP capability that enables a BGP speaker to send its own outbound route filter to a BGP peer. The peer installs that filter and applies it after any locally installed outbound route filter is applied. In this manner, the BGP peer sends the BGP speaker only routes that are desired by that speaker, minimizing the number of unwanted routing updates that are sent.

<b>outbound traffic (IPsec)</b>	In the context of a secure interface, the clear traffic forwarded to the interface (either by policy or by routing) that is typically secured according to security parameters set for that interface.
<b>outgoing interface</b>	OIF. Used by multicast functions within a router to determine which egress ports to use for forwarding multicast groups.
<b>output policy</b>	Policy that is applied to packets before they leave an interface. <i>See also</i> input policy, policy, secondary input policy.
<b>outside global address</b>	In a NAT context, a configured, publicly routable IP address assigned to a host on the outside network.
<b>outside local address</b>	In a NAT context, a translated IP address of an outside host as it appears to the inside network.
<b>outside network</b>	In a NAT context, the public portion of a network that uses legitimate, publicly routable IP addresses to which you want private hosts to connect.
<b>outside source information</b>	Information used in NAT configuration only when addresses of external hosts might create a conflict on a private network. When an outside host sends a packet inbound to the inside network, the NAT router translates the source information and, in the outbound direction, restores the original information. For inbound traffic, the NAT router translates the outside global address into the outside local address.
<b>OVA</b>	Open Virtualization Archive. Compressed archive file (in TAR format) of an Open Virtualization Format (OVF) package. An OVF package contains the components (operating system, middleware, and software applications) needed to install a virtual appliance or a virtual machine. <i>See also</i> Open Virtualization Format.
<b>Over-the-Air Service Provisioning</b>	OTASP. Activation method used by cellular network providers such as Verizon for CDMA EV-DO 3G wireless modem cards. <i>See also</i> IOTA.
<b>overlapping IP address</b>	IP address that is assigned to more than one device or logical unit, such as an event source type, on a network. If the same IP address is assigned to more than one event source, you can create domains to distinguish them.
<b>overlapping VPN</b>	When a site is a member of more than one VPN; often used to provide centralized services. The central site might contain DNS servers or WWW servers or management stations that need to be reachable from multiple VPNs. Overlapping IPv4 and IPv6 VPNs are supported by the same route-target mechanism. <i>See also</i> full-mesh VPN, hub-and-spoke VPN.
<b>overlay network</b>	Network design in which a logical Layer 3 topology (IP subnets) is operating over a logical Layer 2 topology (ATM PVCs). Layers in the network do not have knowledge of each other, and each layer requires separate management and operation.
<b>oversubscription</b>	Method that allows provisioning of more bandwidth than the line rate of the physical interface. <i>See also</i> bandwidth oversubscription.

- OVF** Open Virtualization Format. Platform-independent packaging and distribution method for software to be run on virtual machines (VMs). The OVF supports industry-standard content verification and integrity checking and provides a basic scheme for managing software licensing. As described by the standard, the OVF defines an *open, secure, portable, efficient, and extensible format for the packaging and distribution of software to be run in virtual machines*. An OVF package consists of several files placed in one directory. *See also* Open Virtualization Archive.
- OVSDB** Open vSwitch Database. Protocol that provides a means through which software-defined networking (SDN) controllers and Juniper Networks devices that support OVSDB can communicate. In an OVSDB topology, SDN controllers and Juniper Networks devices exchange control and statistical information, enabling virtual machine (VM) traffic from entities in a virtual network to be forwarded to entities in a physical network and vice versa.

## P

- P router** provider core router. Router within a service provider core that connects directly to PE routers or other P routers and does not connect directly to a customer edge (CE) device. *See also* PE router.
- P2MP LSP** point-to-multipoint LSP. RSVP-signaled LSP with a single source and multiple destinations.
- PaaS** Platform as a Service. Computing platform—often including an operating system, a programming environment, a webserver, and database applications—that is leased by a cloud provider to customers as needed. Customers can use the computing platform to develop applications and run them in the cloud environment to provide services to their clients. *See also* cloud computing, IaaS, NaaS, SaaS.
- package** Collection of files that make up a Junos OS component.
- packet** Fundamental unit of information (message or fragment of a message) carried in a packet-switched network, for example, the Internet. *See also* PSN.
- packet aging** Occurs when packets in the output buffer are overwritten by newly arriving packets. This happens because the available buffer size is greater than the available transmission bandwidth.
- packet analyzer** Computer program or type of computer hardware that intercepts and logs traffic passing through a network. The packet analyzer captures packets and decodes the raw data, displaying the contents of various fields in the packets, and analyzes the contents according to the appropriate RFC or other specifications. *Also known as* sniffing device. *See also* packet capture.



<b>packet capture</b>	<ul style="list-style-type: none"> <li>• Packet sampling method in which all IPv4 packets flowing through a router are captured for analysis. Packets are captured in the Routing Engine and stored as libpcap-formatted files on the router. Packet capture files can be opened and analyzed offline with packet analyzers such as tcpdump or Ethereal. <i>See also</i> traffic sampling.</li> <li>• J-Web packet sampling method for quickly analyzing router control traffic destined for or originating from the Routing Engine. You can either decode and view packets in the J-Web interface as they are captured, or save them to a file and analyze them offline with packet analyzers such as Ethereal. J-Web packet capture does not capture transient traffic.</li> <li>• A logging option in the IDP Series. You can enable packet capture for traffic that matches your security policy rule.</li> </ul>
<b>packet classification</b>	Process of taking in a single data stream and sorting it into multiple output substreams. In class of service (CoS), the examination of an incoming packet that associates the packet with a particular CoS servicing level. There are two kinds of classifiers: behavior aggregate and multifield. <i>Also known as</i> classification. <i>See also</i> BA classifier, multifield classifier.
<b>packet data protocol</b>	PDP. Network protocol, such as IP, used by packet data networks connected to a GPRS network.
<b>packet delay variation</b>	Small random variation introduced into the value of a timer to prevent multiple timer expirations from becoming synchronized. In real-time applications such as VoIP and video, variation in the rate at which packets in a stream are received that can cause quality degradation. <i>Also known as</i> jitter.
<b>packet detection</b>	For GRE tunnel interfaces, event when the router receives a packet with a source IP address that is not in the demultiplexer table, which triggers dynamic creation of subscriber interfaces. In this case, the primary IP interface must be in autoconfiguration mode. Packet detection is the only method of dynamically creating subscriber interfaces on GRE tunnel interfaces; you cannot use a DHCP local server or DHCP external server.
<b>packet filtering</b>	A router/firewall process that uses access control lists (ACLs) to restrict flow of information based on characteristics such as source/destination IP address, protocol, or port used. Generally, packet-filtering routers do not track sessions except when doing NAT (which tracks the session for NAT purposes).
<b>Packet Forwarding Engine</b>	Portion of the router that processes packets by forwarding them between input and output interfaces.
<b>packet loss priority</b>	PLP. Used to determine the random early detection (RED) drop profile when a packet is queued. You can set it by configuring a classifier or policer. The system supports two PLP designations: low and high.
<b>packet loss priority bit</b>	PLP bit. Used to identify packets that have experienced congestion or are from a transmission that exceeded a service provider's customer service license agreement. This bit can be used as part of a router's congestion control mechanism and can be set by the interface or by a filter.

<b>packet mirroring</b>	JunosE Software feature that enables sending a copy of a packet to an external host for analysis. Packet mirroring has many uses, including traffic debugging and troubleshooting user networking problems. With it you can mirror traffic traversing a specific interface or traffic that is to or from a particular user. Packet mirroring is always transparent to users and does not affect the delivery of the original traffic. In some cases, the means and authority for conducting packet mirroring can depend on the regulations of specific countries. <i>See also</i> CLI-based packet mirroring, RADIUS-based packet mirroring, port mirroring.
<b>packet or cell switching</b>	Transmission of packets from many sources over a switched network.
<b>packet over SONET</b>	POS. Communications protocol for transmitting packets over SDH or SONET, which are both circuit switched protocols.
<b>packet over SONET/SDH</b>	Serial transmission of data over SONET frames through the use of a protocol such as PPP.
<b>Packet Transfer Mode</b>	PTM. Method of transporting packet-based services based on the EFM IEEE 802.3ah standard.
<b>packet-switched network, packet-switching network</b>	PSN. Network in which messages or fragments of messages (packets) are sent to their destination through the most expedient route, determined by a routing algorithm. The packets are reassembled at the destination. Packet switching optimizes bandwidth in a network and minimizes latency.
<b>PADI</b>	PPPoE Active Discovery Initiation packet. Point-to-Point Protocol over Ethernet (PPPoE) initiation packet that is broadcast by the client to start the discovery process.
<b>PADM</b>	PPPoE Active Discovery Message. Control message that servers send to clients.
<b>PADN</b>	PPPoE Active Discovery Network. Message that a PPPoE server sends to a client. The information sent associates the PPPoE sessions with a set of routes. The client can use this set of routes to determine which session to use based on the destination IP address.
<b>PADO</b>	PPPoE Active Discovery Offer packet. Point-to-Point Protocol over Ethernet (PPPoE) offer packet that is sent to the client by one or more access concentrators in reply to a PPPoE Active Discovery Initiation (PADI) packet.
<b>PADR</b>	PPPoE Active Discovery Request packet. Point-to-Point Protocol over Ethernet (PPPoE) packet sent by the client to one selected access concentrator to request a session.
<b>PADS</b>	PPPoE Active Discovery Session Confirmation packet. Point-to-Point Protocol over Ethernet (PPPoE) packet sent by the selected access concentrator to confirm the session.
<b>PADT</b>	PPPoE Active Discovery Termination packet. Point-to-Point Protocol over Ethernet (PPPoE) packet sent by either the client or the access concentrator to terminate a session.
<b>PAP</b>	Password Authentication Protocol. Security protocol that uses password protection to authenticate a user to a network or host. <i>See also</i> CHAP.

<b>paravirtualization</b>	Virtualization technique in which a software component similar to the underlying hardware resides in the virtual machine (VM) and interacts with the hypervisor to execute many operations. In contrast to full virtualization, this technique reduces the overhead of virtualization in the VM. <i>See also</i> full virtualization, hypervisor.
<b>partial sequence number PDU (protocol data unit)</b>	PSNP. Packet that contains only a partial list of the LSPs in the IS-IS link-state database; a PDU sent by designated router to acknowledge and request link-state information.
<b>passive flow monitoring</b>	Technique to intercept and observe specified data network traffic by using a routing platform such as a monitoring station that is not participating in the network.
<b>passive interface</b>	Interface that only advertises its IP address in its LSPs. It does not send or receive IS-IS packets.
<b>passive peers</b>	BGP peers from which a BGP speaker accepts inbound BGP connections but never initiates an outbound BGP connection to the peers. This passive status conserves CPU and TCP connection resources when the neighbor does not exist.
<b>Password Authentication Protocol</b>	PAP. Security protocol that uses password protection to authenticate a user to a network or host. <i>See also</i> CHAP.
<b>PAT</b>	Port Address Translation. Translation of the original source port number in a packet to a different, randomly designated port number. <i>Also known as</i> Network Address Port Translation (NAPT). <i>See also</i> NAPT.
<b>path attribute</b>	Information about a BGP route, such as the route origin, AS path, and next-hop router.
<b>Path Computation Client</b>	PCC. Client application that requests a path computation to be performed by a Path Computation Element (PCE). <i>See also</i> Path Computation Element.
<b>Path Computation Client Process</b>	PCCD. Interacts with the Path Computation Element (PCE) and with the routing protocol process (RPD) through an internal Junos OS IPC mechanism.
<b>Path Computation Element</b>	PCE. Entity that is capable of computing a network path or route based on a network graph and applying computational constraints. <i>See also</i> Path Computation Client.
<b>Path Computation Element Protocol</b>	PCEP. TCP-based protocol defined by the IETF PCE Working Group that defines a set of messages and objects used to manage PCEP sessions and to request and send paths for multidomain traffic engineered LSPs.
<b>path layer</b>	For a channelized OCx/STMx interface, the layer that maps the user payload into a SONET/SDH format suitable for the line layer. This layer transports the actual network services (such as T3s) between SONET/SDH multiplexing devices and provides end-to-end transmission. <i>See also</i> line layer, section layer.

<b>PathErr message</b>	RSVP message indicating that an error has occurred along an established path LSP. The message is advertised upstream toward the ingress router and does not remove any RSVP soft state from the network.
<b>PathTear message</b>	RSVP message indicating that the established LSP and its associated soft state should be removed by the network. The message is advertised downstream hop by hop toward the egress router.
<b>PBB</b>	provider backbone bridge, PBBN, provider backbone bridge network. Defined in IEEE 802.1ah, PBBs offer a scalable solution for building large bridged networks by improving MAC address scalability and service instance scalability.
<b>PBBN</b>	provider backbone bridge network, PBB, provider backbone bridge. Defined in IEEE 802.1ah, PBBs offer a scalable solution for building large bridged networks by improving MAC address scalability and service instance scalability.
<b>PBR</b>	policy-based routing. Filter that classifies packets to determine their forwarding path within a router. PBR is used to redirect traffic for analysis. <i>Also known as</i> filter-based forwarding (FBF).
<b>PBX</b>	private branch exchange. Telephone system that enables telephone extensions within the system to connect with each other as well as with the public telephone system.
<b>PC Card</b>	<i>Previously known as a</i> PCMCIA Card. Removable storage media that ships with each router and contains a copy of Junos OS. The PC Card is based on standards published by the Personal Computer Memory Card International Association (PCMCIA).
<b>pcap</b>	Software library for packet capturing. <i>See also</i> libpcap.
<b>PCC</b>	Path Computation Client. Client application that requests a path computation to be performed by a Path Computation Element (PCE). <i>See also</i> Path Computation Element.
<b>PCCD</b>	Path Computation Client Process. Interacts with the Path Computation Element (PCE) and with the routing protocol process (RPD) through an internal Junos OS IPC mechanism.
<b>PCE</b>	Path Computation Element. Entity that is capable of computing a network path or route based on a network graph and applying computational constraints. <i>See also</i> Path Computational Client.
<b>PCEP</b>	Path Computation Element Protocol. TCP-based protocol defined by the IETF PCE Working Group that defines a set of messages and objects used to manage PCEP sessions and to request and send paths for multidomain traffic engineered LSPs.
<b>PCI</b>	Peripheral Component Interconnect. Standard, high-speed bus for connecting computer peripherals.

<b>PCI Express</b>	Peripheral Component Interconnect Express. Next-generation, higher-bandwidth bus for connecting computer peripherals. A PCI Express bus uses point-to-point bus topology with a shared switch rather than the shared bus topology of a standard PCI bus. The shared switch on a PCI Express bus provides centralized traffic routing and management and can prioritize traffic. On some devices, PCI Express slots are backward compatible with PCI and can accept Physical Interface Modules (PIMs) intended for either PCI Express or PCI slots.
<b>PCI pass-through</b>	Virtualization technique in which a physical Peripheral Component Interconnect (PCI) device is directly connected to a virtual machine (VM), bypassing the hypervisor. Drivers in the VM can directly access the PCI device, resulting in a high rate of data transfer. <i>See also</i> virtio.
<b>PCMCIA</b>	Personal Computer Memory Card International Association. Industry group that promotes standards for credit card-size memory and I/O devices.
<b>PCR</b>	peak cell rate. Maximum allowable rate, measured in cells per second, at which cells can be transported along a connection in an ATM network.
<b>PDH</b>	Plesiochronous Digital Hierarchy. Developed to carry digitized voice more efficiently. Evolved into the North America, European, and Japanese Digital Hierarchies, in which only a discrete set of fixed rates is available, namely, NxDS0 (DS0 is a 64-Kbps rate).
<b>PDL</b>	progressive download. An HTTP media delivery mode in which the media file is played while it is being downloaded, unlike the full download method whereby the media file is downloaded completely before playback can begin.
<b>PDP</b>	<ul style="list-style-type: none"> <li>• packet data protocol. Network protocol, such as IP, used by packet data networks connected to a GPRS network.</li> <li>• policy decision point. The Common Open Policy Service (COPS) server, which makes policy decisions for itself and for clients that request decisions.</li> </ul>
<b>PDP context</b>	In the mobile wireless network, indicates a logical association between a Mobile Station (MS) and a public data network (PDN) running across a GPRS network; a user session on a GPRS network. The context defines aspects such as routing, quality of service (QoS), security, billing, and so on.
<b>PDU</b>	protocol data unit. OSI term equivalent to packet, containing protocol control information and, possibly, user data. Also refers to a specific layer of the OSI seven-layer model and a specific protocol.
<b>PE</b>	provider edge router, PE router. Router in the service provider's network that is connected to a customer edge (CE) device and participates in a virtual private network (VPN). <i>See also</i> P router.
<b>PE router</b>	provider edge router, PE. Router in the service provider's network that is connected to a customer edge (CE) device and participates in a virtual private network (VPN). <i>See also</i> P router.

<b>peak cell rate</b>	PCR. Maximum allowable rate, measured in cells per second, at which cells can be transported along a connection in an ATM network.
<b>peak information rate</b>	PIR. The PIR must be equal to or greater than the committed information rate (CIR), and both must be configured to be greater than 0. Packets that exceed the PIR are marked red, which corresponds to high loss priority. <i>See also</i> CIR, trTCM.
<b>PEC</b>	policing equivalence classes. In traffic policing, a set of packets that are treated the same way by the packet classifier.
<b>peer</b>	Immediately adjacent router with which a protocol relationship has been established. <i>Also known as</i> neighbor. <i>See</i> BGP peer, neighbor.
<b>peering</b>	Practice of exchanging Internet traffic with directly connected peers according to commercial and contractual agreements.
<b>PEM</b>	<ul style="list-style-type: none"> <li>• Power Entry Module. Distributes DC power within the router chassis. Supported on M40e, M160, M320, and T Series routing platforms.</li> <li>• Privacy Enhanced Mail. Technique for securely exchanging electronic mail over a public medium.</li> </ul>
<b>pending state</b>	State of an SRP module to which the system transitions when an unsupported application is configured. When a transition to the pending state occurs, the system generates SNMP traps and log messages. How the router behaves depends on which high availability state the application is in when it shifts to a pending state.
<b>penultimate router</b>	Last transit router before the egress router in an MPLS label-switched path.
<b>penultimate-hop popping</b>	PHP. Mechanism used in an MPLS network that allows the transit router before the egress router to perform a label pop operation and forward the remaining data (often an IPv4 packet) to the egress router. <i>See also</i> UHP.
<b>PEP</b>	policy enforcement point. COPS client that enforces policy decisions. The JunosE Software COPS interface is a PEP.
<b>per-hop behavior</b>	PHB. Traffic conditioning applied to traffic at each node in a differentiated services domain. The PHB provides the scheduling behavior and drop probability required by the traffic.
<b>per-packet load balancing</b>	Method used to distribute workload to processors to improve the throughput of concurrent connections. Basically, it installs all next-hop destinations for an active route in the forwarding table. You can use load balancing across multiple paths between routers. The behavior of load balancing depends on the version of the Internet Processor ASIC in the router. <i>Also known as</i> load balancing.

<b>Perfect Forward Secrecy</b>	PFS. Protocol derived from an encryption system that changes encryption keys often and ensures that no two sets of keys have any relation to each other. If one set of keys is compromised, only communications using those keys are at risk. An example of a system that uses PFS is Diffie-Hellman. PFS provides added security, but requires extra processing for a new key exchange on every key refresh.
<b>perimeter firewall device</b>	Device that feeds data through to the perimeter network through a perimeter firewall. A perimeter network, often called the <i>demilitarized zone (DMZ) network</i> or <i>edge network</i> , links incoming users to web servers or other services. The web servers then link to the internal networks through an internal firewall. A perimeter firewall is an essential component for detecting and protecting the network from unwanted traffic, potentially dangerous content, and intrusion attempts and flagging up these threats to the network administrator.
<b>Peripheral Component Interconnect</b>	PCI. Standard, high-speed bus for connecting computer peripherals.
<b>Peripheral Component Interconnect Express</b>	PCI Express. Next-generation, higher-bandwidth bus for connecting computer peripherals. A PCI Express bus uses point-to-point bus topology with a shared switch rather than the shared bus topology of a standard PCI bus. The shared switch on a PCI Express bus provides centralized traffic routing and management and can prioritize traffic. On some devices, PCI Express slots are backward compatible with PCI and can accept Physical Interface Modules (PIMs) intended for either PCI Express or PCI slots.
<b>permanent interface</b>	Interface that is always present in the routing platform. <i>See also</i> management Ethernet interface, transient interface.
<b>permanent virtual channel (or circuit or connection)</b>	PVC. (Called permanent virtual connection when referring to ATM.) Software-defined logical connection in a network; a virtual circuit that is permanently established. PVCs save bandwidth associated with circuit establishment and teardown in situations where certain virtual circuits must exist all the time. <i>See also</i> SVC.
<b>permission flags</b>	Options used to grant a user access to operational mode commands, configuration hierarchy levels, and configuration statements. In the login class assigned to a user, the administrator can specify a permission flag to grant the user access to the commands, configuration hierarchy levels, and statements corresponding to that login class. <i>See also</i> login classes.
<b>permit</b>	Security policy action that permits the traffic from a specified source to a specified destination when packets match a defined criteria.
<b>persistent change</b>	Configuration change generated by a commit script and copied to the candidate configuration, often a result of using a template. Persistent changes remain in the candidate configuration unless you explicitly delete them. <i>See also</i> transient change.
<b>persistent MAC learning</b>	Port security feature that enables an interface to retain dynamically learned MAC addresses across restarts of the switch (or if the interface goes down). <i>Also known as</i> sticky MAC.

<b>persistent tunnel</b>	Tunnel that is configured to remain available. Persistent tunnels have only local significance; that is, they apply only to the end of the tunnel where they are set. If the other end of the tunnel chooses to terminate the tunnel, the tunnel is removed.
<b>Personal Computer Memory Card International Association</b>	PCMCIA. Industry group that promotes standards for credit card-size memory and I/O devices.
<b>PFC</b>	<ul style="list-style-type: none"> <li>• priority-based flow control. Link-level flow control mechanism defined by IEEE 802.1Qbb that allows independent flow control for each class of service to ensure that no frame loss from congestion occurs in data center bridging networks. PFC is an enhancement of the Ethernet PAUSE mechanism, but PFC controls classes of flows, whereas Ethernet PAUSE indiscriminately pauses all of the traffic on a link. <i>Also known as</i> priority flow control. <i>See also</i> Ethernet PAUSE.</li> <li>• Protocol Field Compression. Normally, PPP-encapsulated packets are transmitted with a two-byte protocol field. For example, IPv4 packets are transmitted with the protocol field set to 0x0021, and MPLS packets are transmitted with the protocol field set to 0x0281. For all protocols with identifiers from 0x0000 through 0x00ff, PFC enables routers to compress the protocol field to one byte, as defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i>. PFC allows you to conserve bandwidth by transmitting less data. <i>See also</i> ACFC.</li> </ul>
<b>PFS</b>	Perfect Forward Secrecy. Protocol derived from an encryption system that changes encryption keys often and ensures that no two sets of keys have any relation to each other. If one set of keys is compromised, only communications using those keys are at risk. An example of a system that uses PFS is Diffie-Hellman. PFS provides added security, but requires extra processing for a new key exchange on every key refresh.
<b>PGM</b>	Pragmatic General Multicast. Protocol layer that can be used between the IP layer and the multicast application on sources, receivers, and routers to add reliability, scalability, and efficiency to multicast networks.
<b>PGP</b>	Pretty Good Privacy. Strong cryptographic technique invented by Philip Zimmerman in 1991.
<b>PHB</b>	per-hop behavior. Traffic conditioning applied to traffic at each node in a differentiated services domain. The PHB provides the scheduling behavior and drop probability required by the traffic.
<b>phishing</b>	In electronic communications, an attempt to acquire sensitive information such as usernames, passwords, and credit card details (and sometimes, indirectly, money), often with malicious intention, by masquerading as a trustworthy entity.
<b>PHP</b>	penultimate-hop popping. Mechanism used in an MPLS network that allows the transit router before the egress router to perform a label pop operation and forward the remaining data (often an IPv4 packet) to the egress router. <i>See also</i> UHP.



<b>PHY</b>	PHY can be either of the following: <ul style="list-style-type: none"> <li>• Special electronic integrated circuit or functional block of a circuit that performs encoding and decoding between a pure digital domain (on-off) and a modulation in the analog domain. <i>See also</i> LAN PHY and WAN PHY.</li> <li>• Open Systems Interconnection (OSI) Physical Layer. Layer 1 of the OSI Model that defines the physical link between devices.</li> </ul>
<b>physical interface</b>	A port on a Physical Interface Card (PIC) or Physical Interface Module (PIM).
<b>Physical Interface Card</b>	PIC. Network interface-specific card that can be installed on an FPC in the router. <i>Also known as</i> card, blade, module.
<b>Physical Interface Module</b>	PIM. Network interface card installed in a device to provide physical connections to a LAN or WAN. PIMs can be fixed or removable and interchangeable. The PIM receives incoming packets from the network and transmits outgoing packets to the network. Each PIM is equipped with a dedicated network processor that forwards incoming data packets to and receives outgoing data packets from the Routing Engine. During this process, the PIM performs framing and line-speed signaling for its medium type—for example, E1, serial, Fast Ethernet, or ISDN. <i>Also known as</i> card, blade, module.
<b>Physical Layer</b>	First and lowest level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer defines all the electrical and physical specifications for devices and provides the transmission of bits over the network medium. It includes the physical media: cables, microwaves, and networking equipment such as hubs and repeaters. <i>Also known as</i> Layer 1.
<b>Physical Layer Convergence Procedure</b>	PLCP. A protocol defined by IEEE 802.6 that is used for DS3 transmission of ATM. ATM cells are encapsulated in a frame defined by the PLCP, which is defined by the DS3 M-frame.
<b>physical server</b>	The server machine itself, which can run multiple server applications. <i>See also</i> real server.
<b>PIB</b>	Policy Information Base. Collection of sets of attributes that represent configuration information for a device.
<b>PIC</b>	Physical Interface Card. Network interface-specific card that can be installed on an FPC in the router. <i>Also known as</i> card, blade, module.
<b>PIC I/O Manager ASIC</b>	Juniper Networks ASIC responsible for receiving and transmitting information on the physical media. It performs media-specific tasks within the Packet Forwarding Engine.

<b>PIM</b>	<p>PIM can be either of the following:</p> <ul style="list-style-type: none"> <li>• <b>Physical Interface Module.</b> Network interface card installed in a device to provide physical connections to a LAN or WAN. PIMs can be fixed or removable and interchangeable. The PIM receives incoming packets from the network and transmits outgoing packets to the network. Each PIM is equipped with a dedicated network processor that forwards incoming data packets to and receives outgoing data packets from the Routing Engine. During this process, the PIM performs framing and line-speed signaling for its medium type—for example, E1, serial, Fast Ethernet, or ISDN. <i>Also known as</i> card, blade, module.</li> <li>• <b>Protocol Independent Multicast.</b> PIM dense mode is a flood-and-prune protocol. PIM sparse mode routes to multicast groups that use join messages to receive traffic. PIM sparse-dense mode allows some multicast groups to be dense groups (flood-and-prune) and some groups to be sparse groups (join and leave).</li> </ul>
<b>PIM dense mode</b>	Protocol Independent Multicast dense mode. Uses a reverse-path multicast, flood-and-prune mechanism. <i>See also</i> dense mode.
<b>PIM sparse mode</b>	Protocol Independent Multicast sparse mode. A sparse mode multicast protocol, which uses shared trees. In a shared tree, sources forward multicast datagrams to a directly connected router, the designated router. The designated router encapsulates the datagram and unicasts it to an assigned rendezvous point router, which then forwards the datagram to members of multicast groups. <i>See also</i> sparse mode.
<b>PIM sparse mode remote neighbors</b>	Neighbors that are used to run multicast services over BGP/MPLS virtual private networks.
<b>PIM sparse-dense mode</b>	Protocol Independent Multicast sparse-dense mode. Used to send data when a rendezvous point (RP) is not known for a group. However, if the router discovers an RP or you configure an RP statically, PIM sparse mode takes over.
<b>PIM SSM</b>	Protocol Independent Multicast source-specific multicast. Extension of the PIM protocol where a client can receive multicast traffic directly from the source. PIM SSM uses PIM sparse mode functionality to create a shortest-path tree (SPT) between the client and the source, but builds the SPT without using a rendezvous point.
<b>ping</b>	Internet Control Message Protocol (ICMP) echo request used in router discovery to enable a host to discover addresses of operating routers on the subnet.
<b>ping flood</b>	Type of denial-of-service attack that sends ICMP pings so large or so numerous that they overload a system with echo requests, causing the system to expend all its resources responding until it can no longer process valid network traffic. <i>Also known as</i> ICMP flood, smurf attack.
<b>ping of death</b>	Intentionally oversized or irregular ICMP packet that can trigger a denial-of-service condition, freezing, or other adverse system reactions.

<b>pipe (and short-pipe) model</b>	Tunneling model whereby any traffic conditioning (in a pure JunosE environment, a change in traffic class/color combination) that is applied when traffic goes through the tunnel has no effect on the EXP bits coding in the inner header. That is, when traffic exits an LSP (when a label is popped) or when traffic enters an LSP, the inner header's EXP bits coding is not changed. The pipe and short-pipe models differ in the header that the tunnel egress uses when it determines the PHB of an incoming packet. With the short-pipe model, the tunnel egress uses an inner header used for forwarding. With the pipe model, the outermost label is always used. Because of this, you cannot use PHP with the pipe model. <i>See also</i> uniform model.
<b>PIR</b>	peak information rate. The PIR must be equal to or greater than the CIR (committed information rate), and both must be configured to be greater than 0. Packets that exceed the PIR are marked red, which corresponds to high loss priority. <i>See also</i> CIR, trTCM.
<b>PKCS</b>	Public-Key Cryptography Standards. Series of standards established by RSA Laboratories.
<b>PKCS10</b>	PKCS #10. Digital format of messages sent to request certification of a public key.
<b>PKCS11</b>	PKCS #11. The standard used to communicate with secure hardware.
<b>PKI</b>	public key infrastructure. Hierarchy of trust that enables users of a public network to securely and privately exchange data through the use of public and private cryptographic key pairs that are obtained and shared with peers through a trusted authority.
<b>plaintext</b>	Unencrypted form of encrypted text. <i>Also known as</i> cleartext.
<b>PLAT</b>	Provider-side translator (XLAT), defined in RFC 6877, <i>464XLAT: Combination of Stateful and Stateless Translation</i> , that complies with RFC 6146, <i>Stateful NAT64: Network Address and Protocol Translation from IPv6 Clients to IPv4 Servers</i> . PLAT translates N:1 global IPv6 addresses to global IPv4 addresses, and vice versa. <i>See also</i> 464XLAT and CLAT.
<b>Platform as a Service</b>	PaaS. Computing platform—often including an operating system, a programming environment, a webserver, and database applications—that is leased by a cloud provider to customers as needed. Customers can use the computing platform to develop applications and run them in the cloud environment to provide services to their clients. <i>See also</i> cloud computing, Infrastructure as a Service, Network as a Service, Software as a Service.
<b>platform label space</b>	Large, single, unconfigurable pool of labels that can be shared by the platform—all MPLS interfaces on a given virtual router. <i>See also</i> interface label space.
<b>player</b>	Any media player software used for playing back digital video data from files of appropriate formats such as MPEG, AVI, RealVideo, Flash, QuickTime, and so on. In addition to VCR-like functions such as playing, pausing, stopping, rewinding, and forwarding, some common functions include zooming/full screen, audio channel selection, subtitle selection, and frame capturing.

<b>PLCP</b>	Physical Layer Convergence Procedure. A protocol defined by IEEE 802.6 that is used for DS3 transmission of ATM. ATM cells are encapsulated in a frame defined by the PLCP, which is defined by the DS3 M-frame.
<b>Plesiochronous Digital Hierarchy</b>	PDH. Developed to carry digitized voice more efficiently. Evolved into the North America, European, and Japanese Digital Hierarchies, in which only a discrete set of fixed rates is available, namely, NxDS0 (DS0 is a 64-Kbps rate).
<b>PLMN</b>	Public Land Mobile Network. Telecommunications network for Mobile Stations.
<b>PLP</b>	packet loss priority. Used to determine the random early detection (RED) drop profile when a packet is queued. You can set it by configuring a classifier or policer. The system supports two PLP designations: low and high.
<b>PLP bit</b>	packet loss priority bit. Used to identify packets that have experienced congestion or are from a transmission that exceeded a service provider's customer service license agreement. This bit can be used as part of a router's congestion control mechanism and can be set by the interface or by a filter.
<b>PLR</b>	point of local repair. Ingress router of a backup tunnel or a detour LSP.
<b>pod</b>	(of Linux servers) Group of containers that are deployed together on the same host.
<b>PoE</b>	Power over Ethernet. PoE supports the implementation of the IEEE 802.3af and IEEE 802.3at standards; this implementation allows both data and electrical power to pass over a copper Ethernet LAN cable.
<b>point of local repair</b>	PLR. Ingress router of a backup tunnel or a detour LSP.
<b>point of presence</b>	POP. Physical access point to the Internet. The location of the servers, routers, and ATM switches used to provide access to the Internet. The demarcation point between two networks (for example, between a LAN and a WAN).
<b>point-to-multipoint connection</b>	Unidirectional connection in which a single source system transmits data to multiple destination end systems. Point-to-multipoint is one of two fundamental connection types. <i>See also</i> point-to-point connection.
<b>point-to-multipoint LSP</b>	P2MP LSP. RSVP-signaled LSP with a single source and multiple destinations.
<b>point-to-multipoint network</b>	Nonbroadcast network where OSPF treats connections between routers as point-to-point links. There is no election of a designated router and no LSA generated for the network. A router in a point-to-multipoint network sends Hello packets to all neighbors with which it can directly communicate.
<b>point-to-point circuits</b>	In IS-IS, circuits that have less overhead than broadcast circuits, because they do not use designated routers, the link-state database has no representation of the pseudonode or network LSA, and they do not require periodic database synchronization. However, if more than two routers are connected on the LAN media, routing information in the network is reduced. <i>See also</i> broadcast circuits.

<b>point-to-point connection</b>	Unidirectional or bidirectional connection between two end systems. Point-to-point is one of two fundamental connection types. <i>See also</i> point-to-multipoint connection.
<b>point-to-point network</b>	Joins two routers over a wide area network (WAN), for example, two security devices connected by an IPsec VPN tunnel. On point-to-point networks, the OSPF router dynamically detects neighbor routers by sending Hello packets to the multicast address 224.0.0.5.
<b>Point-to-Point Protocol</b>	PPP. Link-layer protocol that provides multiprotocol encapsulation. PPP is used for Link Layer and Network Layer configuration. Provides a standard method for transporting multiprotocol datagrams over point-to-point links. Defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i> .
<b>Point-to-Point Protocol over Ethernet</b>	PPPoE. Network protocol that encapsulates PPP frames in Ethernet frames and connects multiple hosts over a simple bridging access device to a remote access concentrator. Allows multiple users at a site to share the same digital subscriber line, cable modem, or wireless connection to the Internet. You can configure PPPoE client instances, including the username and password, on any or all interfaces on some security devices.
<b>Point-to-Point Protocol process</b>	pppd. Point-to-Point Protocol process (daemon) that processes packets that use PPP.
<b>poison reverse</b>	Method used in distance-vector networks to avoid routing loops. Each router advertises routes back to the neighbor it received them from with an infinity metric assigned.
<b>policer</b>	Filter that limits traffic of a certain class to a specified bandwidth or burst size. Packets exceeding the policer limits are discarded, or assigned to a different forwarding class, a different loss priority, or both.
<b>policing</b>	Method of applying rate limits on bandwidth and burst size for traffic on a particular interface.
<b>policing equivalence classes</b>	PEC. In traffic policing, a set of packets that are treated the same way by the packet classifier.
<b>policy</b>	Condition and action attached to an interface that cause the router to handle packets passing through the interface in a certain way. <i>See also</i> input policy, output policy, secondary input policy.
<b>policy chain</b>	Application of multiple routing policies in a single location. The policies are evaluated in a predefined manner and are always followed by the default policy for the specific application location.
<b>policy decision point</b>	PDP. The Common Open Policy Service (COPS) server, which makes policy decisions for itself and for clients that request decisions.
<b>policy enforcement group</b>	Grouping of endpoints ready to receive threat prevention policies. You can create a policy enforcement group and add endpoints (firewalls, switches, subnets, and a set of end users) under one common group name and later apply a threat prevention policy to that group.
<b>policy enforcement point</b>	PEP. A COPS client that enforces policy decisions. The JunosE Software COPS interface is a PEP.

<b>Policy Enforcer</b>	Component of Junos Space Security Director that can orchestrate policies created by Juniper Networks cloud-based malware detection solution Sky Advanced Threat Prevention (Sky ATP) and can distribute them to EX Series and QFX Series switches, as well as to SRX Series physical and virtual firewalls.
<b>Policy Information Base</b>	PIB. Collection of sets of attributes that represent configuration information for a device.
<b>policy list</b>	In policy management, a set of rules, each of which specifies a policy action.
<b>policy management</b>	Feature that allows network service providers to implement packet forwarding and routing specifically tailored to their customer's requirements. Using policy management, customers can implement policies that selectively cause packets to take different paths.
<b>policy routing</b>	Routing method that redefines a classified packet flow to a destination port or IP address.
<b>policy rule</b>	Policy action optionally combined with a classification. A set of policy rules defines what specialized treatment to apply to classified traffic flows.
<b>policy-based routing</b>	PBR. Filter that classifies packets to determine their forwarding path within a router. PBR is used to redirect traffic for analysis. <i>Also known as</i> filter-based forwarding (FBF).
<b>pool</b>	A logical group of nodes. When a virtual server assigns requests to a pool, it load-balances them across the nodes.
<b>pop</b>	Removal of the last label, by a router, from a packet as it exits an MPLS domain.
<b>POP</b>	point of presence. Physical access point to the Internet. The location of the servers, routers, and ATM switches used to provide access to the Internet. The demarcation point between two networks (for example, between a LAN and a WAN).
<b>Port Address Translation</b>	PAT. Translation of the original source port number in a packet to a different, randomly designated port number. <i>Also known as</i> Network Address Port Translation (NAPT). <i>See also</i> NAPT.
<b>port forwarding</b>	Transmission of data intended for use only within a private (usually corporate) network through a public network in such a way that the routing nodes in the public network are unaware that the transmission is part of a private network. Tunneling is generally done by encapsulating the private network data and protocol information within the public network transmission units so that the private network protocol information appears to the public network as data. Tunneling allows the use of the Internet, a public network, to convey data on behalf of a private network. With VPN tunneling, remote users can access the entrance to their corporate VPN network using an Internet service provider, and the remote users as well as the organization know that it is a secure connection. <i>Also known as</i> tunneling.
<b>port group</b>	In the VMware <sup>®</sup> virtualized environment, groups used to aggregate multiple ports under a common configuration. Port groups serve as an anchor point for virtual machines that connect to labeled networks. Each port group is identified by a network label, which is unique to the current host.

<b>port mapping</b>	Translation of the original destination port number in a packet to a different, predetermined port number.
<b>port mirroring</b>	Method by which a copy of an IPv4 or IPv6 packet is sent from the routing platform to an external host address or a packet analyzer for analysis. <i>Also known as</i> traffic mirroring, switch port analyzer (SPAN), and lawful intercept. <i>See also</i> packet mirroring.
<b>port mode</b>	Feature on some security devices that allows you to select one of several different sets of port, interface, and zone bindings on the device. Changing the port mode removes any existing configurations on the device and requires a system reset.
<b>port scan</b>	Attack in which a single source address attempts to connect to every port on a single machine, in an attempt to provide attackers with information about your network configuration.
<b>port shaping</b>	Method for shaping the aggregate traffic through a port or channel to a rate that is less than the line or port rate.
<b>POS</b>	packet over SONET. Communications protocol for transmitting packets over SDH or SONET, which are both circuit switched protocols.
<b>Power Entry Module</b>	PEM. Distributes DC power within the router chassis. Supported on M40e, M160, M320, and T Series routing platforms.
<b>Power over Ethernet</b>	PoE. PoE supports the implementation of the IEEE 802.3af and IEEE 802.3at standards; this implementation allows both data and electrical power to pass over a copper Ethernet LAN cable.
<b>PPP</b>	Point-to-Point Protocol. Link-layer protocol that provides multiprotocol encapsulation. PPP is used for Link Layer and Network Layer configuration. Provides a standard method for transporting multiprotocol datagrams over point-to-point links. Defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i> .
<b>pppd</b>	Point-to-Point Protocol process (daemon) that processes packets that use PPP.
<b>PPPoA</b>	PPPoE over ATM. Network protocol that encapsulates Point-to-Point Protocol over Ethernet (PPPoE) frames in Asynchronous Transfer Mode (ATM) for digital subscriber line (DSL) transmission, and connects multiple hosts over a simple bridging access device to a remote access concentrator.
<b>PPPoE</b>	Point-to-Point Protocol over Ethernet. Network protocol that encapsulates PPP frames in Ethernet frames and connects multiple hosts over a simple bridging access device to a remote access concentrator. Allows multiple users at a site to share the same digital subscriber line, cable modem, or wireless connection to the Internet. You can configure PPPoE client instances, including the username and password, on any or all interfaces on some security devices.
<b>PPPoE Active Discovery Initiation packet</b>	PADI. Point-to-Point Protocol over Ethernet (PPPoE) initiation packet that is broadcast by the client to start the discovery process.

<b>PPPoE Active Discovery Message</b>	PADM. Control message that servers send to clients.
<b>PPPoE Active Discovery Network</b>	PADN. Message that a PPPoE server sends to a client. The information sent associates the PPPoE sessions with a set of routes. The client can use this set of routes to determine which session to use based on the destination IP address.
<b>PPPoE Active Discovery Offer packet</b>	PADO. Point-to-Point Protocol over Ethernet (PPPoE) offer packet that is sent to the client by one or more access concentrators in reply to a PPPoE Active Discovery Initiation (PADI) packet.
<b>PPPoE Active Discovery Request packet</b>	PADR. Point-to-Point Protocol over Ethernet (PPPoE) packet sent by the client to one selected access concentrator to request a session.
<b>PPPoE Active Discovery Session Confirmation packet</b>	PADS. Point-to-Point Protocol over Ethernet (PPPoE) packet sent by the selected access concentrator to confirm the session.
<b>PPPoE Active Discovery Termination packet</b>	PADT. Point-to-Point Protocol over Ethernet (PPPoE) packet sent by either the client or the access concentrator to terminate a session.
<b>PPPoE over ATM</b>	PPPoA. Network protocol that encapsulates Point-to-Point Protocol over Ethernet (PPPoE) frames in Asynchronous Transfer Mode (ATM) for digital subscriber line (DSL) transmission, and connects multiple hosts over a simple bridging access device to a remote access concentrator.
<b>PPPoE service name table</b>	Collection of service name tags, as defined in RFC 2516, <i>A Method for Transmitting PPP Over Ethernet (PPPoE)</i> , for an access concentrator (AC) such as an E Series router. PPPoE clients use service name tags to request that an AC support certain services. Configuring PPPoE service name tables enables the AC to support multiple service name tags in addition to the empty service name tag. <i>See also</i> service name tag.
<b>Pragmatic General Multicast</b>	PGM. Protocol layer that can be used between the IP layer and the multicast application on sources, receivers, and routers to add reliability, scalability, and efficiency to multicast networks.
<b>preboot execution environment</b>	PXE. Standard that enables booting of IBM-compatible servers, potentially through automation, without a hard drive or boot disk—for example, from firmware or a network.
<b>Preboot eXecution Environment boot</b>	PXE boot. A way to boot computers using a network interface without needing a CD or USB drive. PXE must be installed first.
<b>precedence bits</b>	First three bits in the type-of-service (ToS) byte. On a Juniper Networks router, these bits are used to sort or classify individual packets as they arrive at an interface. The classification determines the queue to which the packet is directed upon transmission.



<b>precedence level</b>	Order in which the effectiveness of CLI privilege levels of E Series routers is implemented. The CLI uses the following order of precedence: <ol style="list-style-type: none"> <li>1. Privilege level set for all commands within a mode, including modes that are accessed from another mode; for example, Global Configuration mode. <i>See also</i> switch.</li> <li>2. Privilege level set for all commands that begin with the same keyword; for example, <b>snmp</b> commands.</li> <li>3. Privilege level set for individual commands; for example, <b>snmp-server community</b>.</li> </ol>
<b>Precision Time Protocol</b>	PTP. Packet-based technology that enables an operator to deliver synchronization services on packet-based mobile backhaul networks. PTP is a highly precise protocol for time synchronization that synchronizes clocks in a distributed system. The time synchronization is achieved through packets that are transmitted and received in a session between a primary clock and a client clock. <i>See also</i> primary clock, client clock. <i>Also known as</i> IEEE 1588v2.
<b>preference</b>	Value associated with a route that the virtual router uses to select the active route when there are multiple routes to the same destination network. The preference value is determined by the protocol or origin of the route. The lower the preference value of a route, the more likely the route is to be selected as the active route.
<b>preferred address</b>	On an interface, the default local address used for packets sourced by the local router to destinations on the subnet.
<b>preferred roaming list</b>	PRL. File that contains information for accessing a device's home network, as well as the service provider's roaming partners.
<b>prefix</b>	First part of a BGP route, which describes a set of IP addresses that can be reached using the route. Prefixes are made possible by classless interdomain routing (CIDR).
<b>prefix list</b>	Sequential collection of permit and deny conditions that apply to IP or IPv6 addresses. Like an access list, the router tests addresses one by one against the conditions in a prefix list. Unlike an access list, the prefix list specifies a base IP or IPv6 address and a length. The tested address is matched against the prefix.
<b>prefix tree</b>	Nonsequential collection of permit and deny conditions that apply to IP addresses. Like a prefix list, the prefix tree specifies a base IP address and a length (the number of bits applied to the base) to determine the network prefix. The tested address is matched against the prefix. The prefix tree also enables route summarization. However, the prefix tree does not match addresses one by one in sequence against the listed conditions. The router performs a binary search against the tree structure of the entries. The prefix tree provides a faster search methodology and matches the test address more closely than either the access list or the prefix list.
<b>prefix-length-range</b>	Junos OS routing policy match type representing all routes that share the same most-significant bits. The prefix length of the route must also lie between the two supplied lengths in the route filter.

<b>prepended header</b>	Header created by the policy-mirroring action during packet mirroring, and used for demultiplexing at the analyzer to sort through the multiple mirrored streams that arrive from different sources. During a packet mirroring session, the router prepends a special UDP/IP header to each mirrored packet that is sent to the analyzer port.
<b>Presentation Layer</b>	Sixth level in the seven-layer OSI Reference Model for network protocol design. This layer transforms data to provide a standard interface for the Application Layer.
<b>prestige</b>	Data placed on a Media Flow Controller or origin server before an HTTP request comes in for it.
<b>Pretty Good Privacy</b>	PGP. Strong cryptographic technique invented by Philip Zimmerman in 1991.
<b>primary</b>	Router in control of the OSPF database exchange during an adjacency formation.
<b>primary address</b>	On an interface, the address used by default as the local address for broadcast and multicast packets sourced locally and sent out the interface.
<b>primary clock</b>	Real-time clock located in a router acting as a Precision Time Protocol (PTP) server (which is also known as the primary node or source node). The primary clock transmits timing messages to the PTP clients (also known as client nodes, destination nodes, or boundary nodes). These messages enable the clients to establish their relative time, distance, and offset from the primary clock (which is the reference point) for phase synchronization. <i>Also known as</i> reference clock. <i>See also</i> client clock.
<b>primary contributing route</b>	Contributing route with the numerically smallest prefix and smallest Junos OS preference value. This route is the default next hop used for a generated route.
<b>primary interface</b>	Router interface that packets go out on when no interface name is specified and when the destination address does not specify a particular outgoing interface.
<b>primary IP address</b>	IP address configured as primary from the set of real interface addresses. VRRP advertisements are always sent (by the primary router) using the primary IP address as the source of the IP packet.
<b>primary IP interface</b>	Normal IP interface on a supported Layer 2 interface, such as Ethernet. You create a primary interface by assigning an IP address to the Ethernet interface.
<b>primary router</b>	VRRP router that takes the responsibility of forwarding packets sent to the IP addresses associated with the virtual router, and that answers ARP requests for these IP addresses. If the IP address owner is available, it always becomes the primary router. <i>See also</i> backup router.
<b>priority</b>	Combination of the facility and severity level of a system log message. By default, priority information is not included in system log messages, but you can configure Junos OS to include it.

<b>priority-based flow control</b>	PFC. Link-level flow control mechanism defined by IEEE 802.1Qbb that allows independent flow control for each class of service to ensure that no frame loss from congestion occurs in data center bridging networks. PFC is an enhancement of the Ethernet PAUSE mechanism, but PFC controls classes of flows, whereas Ethernet PAUSE indiscriminately pauses all of the traffic on a link. <i>Also known as</i> priority flow control. <i>See also</i> Ethernet PAUSE.
<b>Privacy Enhanced Mail</b>	PEM. Technique for securely exchanging electronic mail over a public medium.
<b>private branch exchange</b>	PBX. Telephone system that enables telephone extensions within the system to connect with each other as well as with the public telephone system.
<b>private cloud</b>	A type of cloud implemented in a proprietary network or data center that uses cloud computing technologies to create a virtualized infrastructure operated solely for a single organization, whether it is managed internally or externally. <i>See also</i> public cloud.
<b>private community</b>	Convenient way to categorize groups of routes to facilitate the use of routing policies. <i>Also known as</i> local-use community, general community.
<b>private line aggregation</b>	Consolidation of multiple high-speed access lines into one access point.
<b>Privileged Exec mode</b>	User Exec mode that provides privileged-level access. Privileged Exec commands allow you to perform such functions as displaying system information, setting operating parameters, and gaining access to Global Configuration mode. <i>See also</i> User Exec mode.
<b>privileged level</b>	Access level in the CLI of E Series routers that enables you to view router configuration, change a configuration, and run debugging commands. You need a password to access this level. This level gives you full CLI privileges. The CLI has the ability to map any command to one of 16 levels of command privilege (in the range 0–15). When you access Privileged Exec mode, you have access to those commands that map to your access level or below.
<b>PRL</b>	preferred roaming list. File that contains information for accessing a device's home network, as well as the service provider's roaming partners.
<b>probe</b>	An action taken or an object used to learn something about the state of the network. Real-time performance monitoring (RPM) uses several types of requests to probe a network.
<b>probe interval</b>	Time, in seconds, between probe packets.
<b>process</b>	Program or a system process that continuously runs by itself in the background directly under the operating system and is not under the control of the user. <i>Also known as</i> daemon. The daemon program forwards service requests to other programs as appropriate. These programs usually start at boot time and in response to network requests, hardware activity, or other programs.

<b>process ID</b>	Unique identifier for a process, displayed in a system log message along with the name of the process that generated the event.
<b>process status</b>	Display on a security device that shows information about processes on that device.
<b>profile</b>	Set of characteristics that act as a pattern. Defined through CLI commands to configure dynamic interfaces.
<b>programmable read-only memory</b>	PROM. Form of digital memory in which each bit is locked by using a fuse or antifuse action to store information permanently.
<b>progress indicator</b>	Animated representation of how much progress has been made on a CLI operation that does not finish within the expected completion time. This type of status indicator is supported for the file system synchronization application and the file copy application. The progress indicator displays a series of dots that represents the time required to complete the operation. The dots are followed by the actual percentage of the total that has been completed and by an oscillating asterisk that indicates ongoing activity. As the application progresses, the dots are replaced with asterisks, starting at the left, to represent how much of the operation is finished.
<b>progressive download</b>	PDL. An HTTP media delivery mode in which the media file is played while it is being downloaded, unlike the full download method whereby the media file is downloaded completely before playback can begin.
<b>PROM</b>	programmable read-only memory. Form of digital memory in which each bit is locked by using a fuse or antifuse action to store information permanently.
<b>promiscuous mode</b>	Used with ATM CCC Cell Relay encapsulation, enables mapping of all incoming cells from an interface port or from a virtual path (VP) to a single label-switched path (LSP) without restricting the VCI number.
<b>promiscuous peer group</b>	BGP peer group that accepts incoming BGP connections from any remote address that matches an access list. Promiscuous peers are useful when the remote address of the peer is not known ahead of time. An example is in B-RAS applications, in which interfaces for subscribers are created dynamically and the remote address of the subscriber is assigned dynamically from a local pool or by using RADIUS or some other method.
<b>protect interface</b>	Provides the redundant connection on modules that have APS/MSP or that otherwise enable port redundancy.
<b>Protected System Domain</b>	PSD. Set of Flexible PIC Concentrators (FPCs) on a Juniper Networks routing platform matched with a redundant Routing Engine pair (or single Routing Engine) on the JCS 1200 platform to form a secure, virtual hardware router.
<b>protocol</b>	Rules determining the format and transmission of data between end points in a telecommunication connection.
<b>protocol address</b>	Logical Layer 3 address assigned to an interface within Junos OS.

<b>protocol anomaly</b>	Deviation from the RFC specifications that dictate how communications between two entities should be implemented. Most legitimate traffic does not deviate from the protocols; when anomalies are detected they are often a sign of malicious traffic and seen as a threat to the system.
<b>protocol data unit</b>	PDU. OSI term equivalent to packet, containing protocol control information and, possibly, user data. Also refers to a specific layer of the OSI seven-layer model and a specific protocol.
<b>protocol families</b>	Grouping of logical properties within an interface configuration, for example, the inet, inet4, and mpls protocol families.
<b>Protocol Field Compression</b>	PFC. Normally, PPP-encapsulated packets are transmitted with a two-byte protocol field. For example, IPv4 packets are transmitted with the protocol field set to 0x0021, and MPLS packets are transmitted with the protocol field set to 0x0281. For all protocols with identifiers from 0x0000 through 0x00ff, PFC enables routers to compress the protocol field to one byte, as defined in RFC 1661, <i>The Point-to-Point Protocol (PPP)</i> . PFC allows you to conserve bandwidth by transmitting less data. <i>See also</i> ACFC.
<b>Protocol Independent Multicast</b>	PIM. A set of multicast routing protocols for one-to-many and many-to-many data distribution over networks or the Internet. PIM is protocol-independent, using the routing information from other routing protocols such as BGP. PIM dense mode is a flood-and-prune protocol. PIM sparse mode routes to multicast groups that use join messages to receive traffic. PIM sparse-dense mode allows some multicast groups to be dense groups (flood-and-prune) and some groups to be sparse groups (join and leave).
<b>Protocol Independent Multicast dense mode</b>	PIM dense mode. Uses a reverse-path multicast, flood-and-prune mechanism. <i>See also</i> dense mode.
<b>Protocol Independent Multicast source-specific multicast</b>	PIM SSM. Extension of the PIM protocol where a client can receive multicast traffic directly from the source. PIM SSM uses PIM sparse mode functionality to create a shortest-path tree (SPT) between the client and the source, but builds the SPT without using a rendezvous point.
<b>Protocol Independent Multicast sparse mode</b>	PIM sparse mode. A sparse mode multicast protocol, which uses shared trees. In a shared tree, sources forward multicast datagrams to a directly connected router, the designated router. The designated router encapsulates the datagram and unicasts it to an assigned rendezvous point router, which then forwards the datagram to members of multicast groups. <i>See also</i> sparse mode.
<b>Protocol Independent Multicast sparse-dense mode</b>	PIM sparse-dense mode. Used to send data when a rendezvous point (RP) is not known for a group. However, if the router discovers an RP or you configure an RP statically, PIM sparse mode takes over.
<b>protocol normalization</b>	Method of reducing false positives in network intrusion detection systems, by “normalizing” traffic into a common format for accurate analysis, so that access to hosts takes place in a manner that is unambiguous.
<b>protocol preference</b>	32-bit value assigned to all routes placed into the routing table. The protocol preference is used as a tiebreaker when multiple exact routes are placed into the table by different protocols.

<b>provider backbone bridge</b>	PBB, PBBN, provider backbone bridge network. Defined in IEEE 802.1ah, PBBs offer a scalable solution for building large bridged networks by improving MAC address scalability and service instance scalability.
<b>provider backbone bridge network</b>	PBBN, PBB, provider backbone bridge. Defined in IEEE 802.1ah, PBBs offer a scalable solution for building large bridged networks by improving MAC address scalability and service instance scalability.
<b>provider core router</b>	P router. Router within a service provider core that connects directly to PE routers or other P routers and does not connect directly to a customer edge (CE) device. <i>See also</i> PE router.
<b>provider edge router</b>	PE router, PE. Router in the service provider's network that is connected to a customer edge (CE) device and participates in a virtual private network (VPN). <i>See also</i> P router.
<b>provider router</b>	Router in the service provider's network that is not connected to a customer edge (CE) device.
<b>provider-side translator</b>	PLAT. Defined in RFC 6877, <i>464XLAT: Combination of Stateful and Stateless Translation</i> , that complies with RFC 6146, <i>Stateful NAT64: Network Address and Protocol Translation from IPv6 Clients to IPv4 Servers</i> . PLAT translates N:1 global IPv6 addresses to global IPv4 addresses, and vice versa. <i>See also</i> 464XLAT and CLAT.
<b>proxy</b>	Proxy or proxy server is a technique used to cache information on a webserver and acts as an intermediary between a Web client and that webserver. It breaks the connection between sender and receiver and acts as a relay between client and server.
<b>proxy ARP</b>	proxy Address Resolution Protocol. Enables an E Series router to respond to ARP requests on behalf of an Ethernet end node.
<b>Prune message</b>	PIM message sent upstream to a multicast source or the rendezvous point (RP) of the domain. The message requests that multicast traffic stop being transmitted to the router originating the message.
<b>PSD</b>	Protected System Domain. Set of Flexible PIC Concentrators (FPCs) on a Juniper Networks routing platform matched with a redundant Routing Engine pair (or single Routing Engine) on the JCS 1200 platform to form a secure, virtual hardware router.
<b>PSN</b>	packet-switched network, packet-switching network. Network in which messages or fragments of messages (packets) are sent to their destination through the most expedient route, determined by a routing algorithm. The packets are reassembled at the destination. Packet switching optimizes bandwidth in a network and minimizes latency.
<b>PSNP</b>	partial sequence number PDU. Packet that contains only a partial list of the LSPs in the IS-IS link-state database; a PDU sent by a designated router to acknowledge and request link-state information.
<b>PSTN</b>	public switched telephone network. The public worldwide voice telephone network.

<b>PTM</b>	Packet Transfer Mode. Method of transporting packet-based services based on the EFM IEEE 802.3ah standard.
<b>PTP</b>	Precision Time Protocol. Packet-based technology that enables an operator to deliver synchronization services on packet-based mobile backhaul networks. PTP is a highly precise protocol for time synchronization that synchronizes clocks in a distributed system. The time synchronization is achieved through packets that are transmitted and received in a session between a primary clock and a client clock. <i>Also known as</i> IEEE 1588v2. <i>See also</i> primary clock, client clock.
<b>public cloud</b>	A cloud type in which a hosting service provider makes resources such as applications, storage, and CPU usage available to the public. Public clouds must be based on a standard cloud computing model. <i>See also</i> private cloud.
<b>public key infrastructure</b>	PKI. Hierarchy of trust that enables users of a public network to securely and privately exchange data through the use of public and private cryptographic key pairs that are obtained and shared with peers through a trusted authority.
<b>Public Land Mobile Network</b>	PLMN. Telecommunications network for Mobile Stations.
<b>public switched telephone network</b>	PSTN. The public worldwide voice telephone network.
<b>Public-Key Cryptography Standards</b>	PKCS. Series of standards established by RSA Laboratories.
<b>publishing point</b>	A way to distribute content (live or broadcast as live) to users, either through a defined service delivery protocol (SDP) file, or a namespace (live-pub-point). Used with Juniper Networks Media Flow Controller.
<b>pull/push</b>	<i>Pull</i> refers to media fetches from the origin server initiated by Media Flow Controller based on received requests. <i>Push</i> refers to scheduled media deliveries from the origin server to Media Flow Controller.
<b>Puppet</b>	Open-source software that manages system configurations on multiple platforms, including Linux, UNIX, and Microsoft Windows.
<b>push</b>	Addition of a label or stack of labels, by a router, to a packet as it enters an MPLS domain.
<b>PVC</b>	permanent virtual circuit or channel. (Called permanent virtual connection when referring to ATM.) Software-defined logical connection in a network; a virtual circuit that is permanently established. PVCs save bandwidth associated with circuit establishment and teardown in situations where certain virtual circuits must exist all the time. <i>See also</i> SVC.
<b>PXE</b>	preboot execution environment. Standard that enables booting of IBM-compatible servers, potentially through automation, without a hard drive or boot disk—for example, from firmware or a network.

**PXE boot** Preboot eXecution Environment boot. A way to boot computers using a network interface without needing a CD or USB drive. PXE must be installed first.

**Python (SDK)** Widely used high-level programming language for general-purpose programming.

## Q

**Q-in-Q** The IEEE 802.1ad specification for encapsulation and bridging of Ethernet frames. Q-in-Q allows multiple VLAN headers to be inserted into a single frame, an essential capability for implementing Metro Ethernet network topologies. *Also known as* IEEE 802.1QinQ, provider bridging, stacked VLANs.

**QEMU** Quick Emulator. Software that emulates functions of a guest system or machine on a host system or machine and uses binary translation.

**QoS** quality of service. Performance, such as transmission rates and error rates, of a communications channel or system. A suite of features that configure queuing and scheduling on the forwarding path of a device. QoS provides a level of predictability and control beyond the best-effort delivery that the device provides by default. (Best-effort service provides packet transmission with no assurance of reliability, delay, jitter, or throughput.) *See also* CoS.

**QoS administrator** Person responsible for implementing a QoS queuing architecture by defining the scheduler profiles and referencing them from QoS profiles. A QoS administrator also configures parameter definitions that control the parameters, interfaces, and ranges of values that QoS clients, using QoS parameters, can assign.

**QoS client** Person responsible for configuring services for individual subscribers by creating parameter instances. The parameter instances that a QoS client creates depend on the settings that the QoS administrator defined in parameter definitions. QoS clients can use the CLI, Session and Resource Control (SRC), IP multicast bandwidth adjustment, RADIUS, or Service Manager to manage these services.

**QoS parameters** Special parameters that enable you to configure a queuing architecture without specifying numeric subscriber rates and weights in scheduler profiles. You then use the same QoS and scheduler profiles across all subscribers who use the same services but at different bandwidths, reducing the total number of QoS profiles and scheduler profiles required.

**QoS port-type profile** QoS profile that is automatically attached to ports of the corresponding type if you do not explicitly attach a QoS profile.

**QoS profile** Collection of QoS commands that specify queue profiles, drop profiles, scheduler profiles, and statistics profiles in combination with interface types.

**QoS profile attachment** Reference that applies the rules in the QoS profile to a specific interface.

**QSFP transceiver** quad small form-factor pluggable transceiver. Quad (four-channel) transceiver that provides support for fiber-optic or copper cables. QSFP transceivers are hot-insertable and hot-removable.



<b>QSFP+ transceiver</b>	quad small form-factor pluggable plus transceiver. Enhanced QSFP (four-channel) transceiver that provides support for fiber-optic or copper cables. QSFP+ transceivers are hot-insertable and hot-removable.
<b>quad small form-factor pluggable plus transceiver</b>	QSFP+ transceiver. Enhanced QSFP (four-channel) transceiver that provides support for fiber-optic or copper cables. QSFP+ transceivers are hot-insertable and hot-removable.
<b>quad small form-factor pluggable transceiver</b>	QSFP transceiver. Quad (four-channel) transceiver that provides support for fiber-optic or copper cables. QSFP transceivers are hot-insertable and hot-removable.
<b>quad-wide</b>	Type of PIC that combines the PIC and FPC within a single FPC slot.
<b>quadruple play</b>	Addition of mobile phone service to triple play. <i>See also</i> triple play.
<b>qualified next hop</b>	Next hop for a static route that allows a second next hop for the same static route to have different metric and preference properties from the original next hop.
<b>quality of service</b>	QoS. Performance, such as transmission rates and error rates, of a communications channel or system. A suite of features that configure queuing and scheduling on the forwarding path of a device. QoS provides a level of predictability and control beyond the best-effort delivery that the device provides by default. (Best-effort service provides packet transmission with no assurance of reliability, delay, jitter, or throughput.) <i>See also</i> CoS.
<b>quarantine</b>	Action that allows or denies access to a blocked site based on the user's response to the received message.
<b>querier router</b>	PIM router on a broadcast subnet responsible for generating IGMP query messages for the segment.
<b>queue</b>	First-in, first-out (FIFO) number of packets waiting to be forwarded over a router interface. You can configure the minimum and maximum size of the packet queue, the queue admission policies, and other parameters to manage the flow of packets through the router.
<b>queue fullness</b>	For random early detection (RED), the memory used to store packets expressed as a percentage of the total memory allocated for that specific queue. <i>See also</i> drop profile.
<b>queue length</b>	For ATM1 interfaces only, a limit on the number of transmit packets that can be queued. Packets that exceed the limit are dropped. <i>See also</i> EPD.
<b>queue profile</b>	Template that specifies the buffering and tail-dropping behavior of an egress queue.
<b>queuing</b>	In routing, the arrangement of packets waiting to be forwarded. Packets are organized into queues according to their priority, time of arrival, or other characteristics, and are processed one at a time. After a packet is sent to the outgoing interface on a router, it is queued for transmission on the physical media. The amount of time a packet is queued on the router is determined by the availability of the outgoing physical media, bandwidth, and the amount of traffic using the interface.

<b>Quick Emulator</b>	QEMU. Software that emulates functions of a guest system or machine on a host system or machine and uses binary translation.
<b>Quick template</b>	Template created without using a template definition in Junos Space Network Management Platform. To create a Quick template, you use a CLI-based template editor or a form-based editor. When you create a Quick template, you can set default values for variables in the configuration, reorder the variables, and specify device-specific values for the variables while deploying the configuration to the devices through the Junos Space user interface.
<b>R</b>	
<b>RA</b>	registration authority. Trusted third-party organization that acts on behalf of a certificate authority (CA) to verify the identity of a digital certificate user.
<b>RabbitMQ</b>	Open-source message broker software (or queue manager) that implements the Advanced Message Queuing Protocol (AMQP).
<b>rack unit</b>	RU. The standard single unit height of a rack-mounted device.
<b>radio base station</b>	Mobile telephony equipment housed in cabinets and colocated with antennas. <i>Also known as</i> base transceiver station.
<b>radio frequency interference</b>	RFI. Interference from high-frequency electromagnetic waves emanating from electronic devices.
<b>radio network controller</b>	RNC. Manages the radio part of the network in UMTS.
<b>RADIUS</b>	Remote Authentication Dial-In User Service. Distributed client/server AAA service method that protects networks against unauthorized access. RADIUS clients running on an E Series router send authentication requests to a central RADIUS server. The central RADIUS server stores all the required user authentication and network access information. RADIUS informs the router of the privilege levels for which RADIUS-authenticated users have enable access. The router permits or denies enable access accordingly.
<b>RADIUS-based packet mirroring</b>	RADIUS administrator uses RADIUS attributes to configure packet mirroring of a particular user's traffic without regard to how often the user logs in or out of which E Series router or interface the user uses. It is particularly appropriate for large networks and for debugging network problems related to mobile users, who do not always log in to a particular router.
<b>RAM</b>	random access memory. Form of computer memory that, unlike ROM, is volatile and requires power to keep the data accessible; stored information is lost when power is removed. <i>See also</i> ROM.
<b>random access memory</b>	RAM. Form of computer memory that, unlike ROM, is volatile and requires power to keep the data accessible; stored information is lost when power is removed. <i>See also</i> ROM.

<b>random early detection</b>	RED. Gradual drop profile for a given class that is used for congestion avoidance. RED tries to anticipate incipient congestion by dropping a small percentage of packets from the head of the queue to ensure that a queue never actually becomes congested.
<b>Rapid Spanning Tree Protocol</b>	RSTP. Used to prevent loops in bridge configurations. RSTP is not aware of VLANs, and blocks ports at the physical level. <i>See also</i> MSTP.
<b>RAS</b>	remote access service. Any combination of hardware and software to enable users to remotely access services protected by your network security devices. Typically, you use a virtual private network (VPN) to enable RAS, then add RAS users to the VPN.
<b>rate limiting</b>	<ul style="list-style-type: none"> <li>• Method of applying rate limits on bandwidth and burst size for traffic on a particular interface. <i>See also</i> one-rate rate-limit profile, two-rate rate-limit profile, policing.</li> <li>• In IDP Series, an application policy enforcement (APE) rule-based action. When the bandwidth rate for matching traffic is below the rate limit, the IDP Series appliance does nothing. When the bandwidth rate exceeds the limit, the IDP appliance behaves as if no bandwidth is available and drops the packets.</li> </ul>
<b>rate shaping</b>	Mechanism that throttles the rate at which an interface can transmit packets.
<b>rate-limit hierarchy</b>	Enables lower-priority traffic to access unused bandwidth allocated for real-time traffic during times when no real-time traffic is flowing. <i>See also</i> color-aware rate limit, color-blind rate limit.
<b>rate-limit profile</b>	Set of bandwidth attributes and associated actions that provides a variety of services, including tiered bandwidth service where traffic conforming to configured bandwidth levels is treated differently than traffic that exceeds the configured values, and a hard-limit service where a fixed bandwidth limit is applied to a traffic flow. Also provides a TCP-friendly rate-limiting service that works in conjunction with TCP's native flow-control functionality. <i>See also</i> one-rate rate-limit profile, two-rate rate-limit profile.
<b>RBAC</b>	role-based access control. Defined set of privileges that can be assigned to users and user groups to control access to cloud customer premises equipment (CPE) solutions.
<b>RBOC</b>	Regional Bell Operating Company, pronounced "are-bock". Regional telephone companies formed as a result of the divestiture of the Bell System in 1984. <i>Also known as</i> Baby Bell.
<b>RC2, RC4, RC5</b>	RSA codes. Family of proprietary (RSA Data Security, Inc.) encryption schemes often used in Web browsers and servers. These codes use variable-length keys up to 2048 bits.
<b>RDBMS</b>	relational database management system. Presents data in a tabular form with a means of manipulating the tabular data with relational operators.
<b>RDI cell</b>	remote defect indication cell. Cell received from the remote endpoint of the virtual path (VP) or virtual connection (VC) that indicates an interruption in the cell transfer capability of the VP/VC.

<b>RDM</b>	Russian Dolls model. A bandwidth constraints model that makes efficient use of bandwidth by allowing the class types to share bandwidth, as defined in RFC 4127, <i>Russian Dolls Bandwidth Constraints Model for Diffserv-aware MPLS Traffic Engineering</i> . "Russian Dolls" refers to a traditional type of nested doll-within-a-doll set.
<b>read-only memory</b>	ROM. Medium used in electronic devices to store data that is not modified. ROM retains its contents even after the computer is turned off. ROM is <i>nonvolatile</i> , whereas RAM is <i>volatile</i> . <i>See also</i> RAM.
<b>real server</b>	The logical representation of a service or server application residing on a physical server. A real server is defined by an IP address and an optional port corresponding to the service. <i>See also</i> physical server.
<b>Real-Time Messaging Protocol</b>	RTMP. A multimedia streaming and remote procedure call (RPC) protocol primarily used in Adobe Flash. RTMP has three variations: The "plain" protocol that works on top of TCP and uses port 1935; RTMPT which is encapsulated within HTTP requests to traverse firewalls; and RTMPS which works just like RTMPT but over a secure HTTPS connection.
<b>real-time performance monitoring</b>	RPM. Tool for creating active probes to track and monitor traffic. <i>Also known as</i> IP service-level agreement (SLA) probe, IP SLA monitoring.
<b>Real-Time Streaming Protocol</b>	RTSP. Application-level protocol for control over the delivery of data with real-time properties, it provides an extensible framework to enable controlled, on-demand delivery of real-time data such as audio and video. Sources of data can include both live data feeds and stored clips. This protocol is intended to control multiple data delivery sessions, provide a means for choosing delivery channels such as UDP, multicast UDP and TCP, and provide a means for choosing delivery mechanisms based upon RTP.
<b>Real-Time Transport Protocol</b>	RTP. Internet protocol that provides mechanisms for the transmission of real-time data, such as audio, video, or voice, over IP networks. Compressed RTP is used for VoIP traffic.
<b>real-time variable bit rate</b>	RTVBR. For ATM2 intelligent queuing (IQ) interfaces, data that is serviced at a higher priority rate than other VBR data. RTVBR is suitable for carrying packetized video and audio. RTVBR provides better congestion control and latency guarantees than non-real-time VBR.
<b>realm</b>	Group identifier for an organization used to restrict access to Web applications. You can create one or multiple realms.
<b>Realtime Monitor</b>	Module of NSM user interface that displays views of the Device Monitor, the VPN Monitor, and the NSRP Monitor. It provides continuous monitoring of the status of your security devices.
<b>receive</b>	Next hop for a static route that allows all matching packets to be sent to the Routing Engine for processing.
<b>receive collision</b>	Result of two devices on the same Ethernet network attempting to receive data at exactly the same time. Collisions on the line are detected by the Carrier Sense Multiple Access Collision Detection (CSMA/CD) protocol.

<b>receive window size</b>	RWS. Number of packets that an L2TP peer can transmit without receiving an acknowledgment from the router. L2TP uses the RWS to implement a sliding window mechanism for the transmission of control messages. If the RWS is not configured for the L2TP tunnel, the router determines the RWS and uses this value for all new tunnels on both the L2TP access concentrator (LAC) and the L2TP network server (LNS).
<b>Recommended Standard 232</b>	RS-232. Serial line protocol recommended standard. Standard connector used commonly in computer serial ports. <i>Also known as</i> EIA-232.
<b>Recommended Standard 449</b>	RS-449. Serial line protocol recommended standard that defines the functional and mechanical characteristics of the interface between DTE and DCE. <i>Also known as</i> EIA-449.
<b>record route object</b>	RRO. An RSVP message object that notes the IP address of each router along the path of an LSP.
<b>recursive DNS query</b>	Query in which a DNS server, if it cannot resolve a query itself, queries other DNS servers, either iteratively or recursively. The first DNS server either provides an answer to the client or responds with an error message if none of the servers it contacts has the answer, an error is encountered, or the session times out. <i>See also</i> iterative DNS query.
<b>recursive lookup</b>	Method of consulting the routing table to locate the actual physical next hop for a route when the supplied next hop is not directly connected.
<b>RED</b>	random early detection. Gradual drop profile for a given class that is used for congestion avoidance. RED tries to anticipate incipient congestion by dropping a small percentage of packets from the head of the queue to ensure that a queue never actually becomes congested.
<b>Red Hat Enterprise Linux</b>	RHEL. Distribution of the Linux operating system developed for the business market.
<b>redirected authentication</b>	Service that helps offload AAA activity on the router, by providing the domain-mapping-like feature remotely on the RADIUS server.
<b>redistribution</b>	Method of placing learned routes from one protocol into another protocol operating on the same router. Junos OS accomplishes this with a routing policy. <i>Also known as</i> route redistribution.
<b>redistribution list</b>	List imported by current routing domain from another routing domain using a different protocol. <i>See also</i> route redistribution.
<b>redundancy</b>	Configuration in which an extra line module in a group of identical line modules provides redundancy if one of the modules fails. The process by which the router switches to the spare line module is called a switchover. The requirements for line module redundancy depend on the router type. <i>Also known as</i> line module redundancy. <i>See also</i> HA, switchover.

<b>redundancy midplane</b>	Hardware component that provides additional connectivity so the spare line module can take control of the I/O module associated with any failed line module in the redundancy group. <i>Also known as</i> passive midplane. <i>See also</i> midplane.
<b>redundant cache</b>	One of a set of two or more caches under the same administration that are assumed to present (or converge toward presenting) the same set of route validation records.
<b>Redundant Trunk Group</b>	RTG. Feature available on EX Series and QFX Series switches deployed at the access layer that enables you to create a group of two ports that serve as redundant uplinks to two other switches, usually in the distribution layer. At a time, one of the two ports is active and the other, inactive. A failure on the active uplink port causes the inactive port to become active.
<b>refresh reduction</b>	In RSVP, an extension that addresses the problems of scaling, reliability, and latency when refresh messages are used to cover message loss.
<b>regex</b>	Refers to an extended regular expression, a special text string used to describe a search pattern. Enclose all regex entries in double quotes; for example, a regex for <b>www.example.com</b> plus <b>example.com</b> could be: <code>"^.*\example\.com"</code> . <i>Also known as</i> regexp.
<b>regexp</b>	Refers to an extended regular expression, a special text string used to describe a search pattern. Enclose all regex entries in double quotes; for example, a regex for <b>www.example.com</b> plus <b>example.com</b> could be: <code>"^.*\example\.com"</code> . <i>Also known as</i> regex.
<b>Regional Bell Operating Company</b>	RBOC, pronounced "are-bock". Regional telephone companies formed as a result of the divestiture of the Bell System in 1984. <i>Also known as</i> Baby Bell.
<b>Register message</b>	PIM message unicast by the first-hop router to the rendezvous point (RP) that contains the multicast packets from the source encapsulated within its data field.
<b>Register Stop message</b>	PIM message sent by the RP to the first-hop router to halt the sending of encapsulated multicast packets.
<b>registration authority</b>	RA. Trusted third-party organization that acts on behalf of a certificate authority (CA) to verify the identity of a digital certificate user.
<b>reimage</b>	Action of removing all data from a hard drive and installing a new image. Reimaging is a one-step process, as opposed to deleting existing data and installing the components of an image separately. Administrators can use reimaging to provide a consistent set of base data on multiple computers. <i>See also</i> image.
<b>reject</b>	Next hop for a configured route that drops all matching packets from the network and returns an ICMP message to the source IP address. Also used as an action in a routing policy or firewall filter.
<b>relational database management system</b>	RDBMS. Presents data in a tabular form with a means of manipulating the tabular data with relational operators.

<b>relative strict-priority scheduling</b>	Process that provides strict-priority scheduling within a shaped aggregate rate. It differs from true strict priority in that it can implement an aggregate shaping rate for both strict and nonstrict traffic. With true strict priority, you can shape the nonstrict or the strict traffic separately, but you cannot shape the aggregate to a single rate.
<b>relative URL</b>	Points to the location of a file from a point of reference, usually the directory below the current file. Preceded by two dots (../directory_path/file.txt) for the directory above; one dot (./directory_path/file.txt) for the current directory. <i>See also</i> absolute URL, base URL.
<b>relay agent</b>	Device that passes DHCP messages between DHCP clients and DHCP servers. <i>Also known as</i> gateway router.
<b>relay proxy</b>	Enhancement to the E Series router's DHCP relay component that manages host routes for DHCP clients, including selecting the single most appropriate offer from multiple DHCP servers. <i>Also known as</i> DHCP relay proxy.
<b>release</b>	The complete, self-contained distribution of a software, firmware, or application package or product.
<b>remote access service</b>	RAS. Any combination of hardware and software that enables users to remotely access services protected by network security devices. Typically, you use a virtual private network (VPN) to enable RAS, then add RAS users to the VPN.
<b>Remote Authentication Dial-In User Service</b>	RADIUS. Distributed client/server AAA service method that protects networks against unauthorized access. RADIUS clients running on an E Series router send authentication requests to a central RADIUS server. The central RADIUS server stores all the required user authentication and network access information. RADIUS informs the router of the privilege levels for which RADIUS-authenticated users have enable access. The router permits or denies enable access accordingly.
<b>remote defect indication cell</b>	RDI cell. Cell received from the remote endpoint of the virtual path (VP) or virtual connection (VC) that indicates an interruption in the cell transfer capability of the VP/VC.
<b>remote loopback</b>	Ability to loop the data back toward the router on supported line modules. Also sends an alarm indication signal out toward the network. <i>Also known as</i> loopback, local loopback, network loopback.
<b>remote monitoring</b>	RMON. Standard MIB that defines current and historical MAC-layer statistics and control objects, allowing you to capture real-time information across the entire network. This allows you to detect, isolate, diagnose, and report potential and actual network problems.
<b>remote neighbors</b>	RIP neighbors that enable the router to establish neighbor adjacencies through unidirectional interfaces, such as MPLS tunnels, rather than the standard practice of using the same interface for receipt and transmission of RIP packets. The remote neighbor can be more than one hop away through intermediate routes that are not running RIP. RIP uses the interface associated with the best route to the remote neighbor to reach the neighbor. A best route to the neighbor must exist in the IP routing table.

<b>remote procedure call</b>	RPC. Type of protocol that allows a computer program running on one computer to cause a function on another computer to be executed, without explicitly coding the details for this interaction.
<b>remote settings object</b>	Object that defines the DNS and WINS servers that are assigned to L2TP RAS users after they have connected to the L2TP tunnel.
<b>rename</b>	Junos OS command that allows a user to change the name of a routing policy, firewall filter, or any other variable character string defined in the router configuration.
<b>rendezvous point</b>	RP. For PIM sparse mode, a core router acting as the root of the distribution tree in a shared tree.
<b>report definition</b>	Feature that specifies what data to retrieve from the Junos Space Network Management Platform database to create reports through the Reporting feature in Junos Space Network Management Platform. This data is used to generate, export, and print reports.
<b>Report Manager</b>	Module of the NSM user interface for generating and viewing reports of log entries and alarms. The reports are used to track and analyze log incidents, network traffic, and potential attacks.
<b>Representational State Transfer</b>	REST. Standard architecture, used for creating Web services, that focuses on a system's resources. REST supersedes SOAP.
<b>Request for Comments</b>	RFC. Internet standard specifications published by the Internet Engineering Task Force (IETF).
<b>request message</b>	RIP message used by a router to ask for all or part of the routing table from a neighbor.
<b>request rule</b>	An AppRules or RuleBuilder rule that controls how the Junos App Balancer should handle a request. Rules are invoked by a virtual server, and can inspect, manipulate, rewrite and route requests; they can also control how other capabilities in the Junos App Balancer are used to manage the request. <i>See also</i> response rule.
<b>requesting authority</b>	Group that is authorized to request or conduct packet mirroring (E Series routers).
<b>rescue configuration</b>	User-defined, known working configuration that you can revert to when your current router or switch configuration and associated backup configuration files are damaged beyond repair. You can retrieve the rescue configuration by using the <b>rollback</b> command with the <b>rescue</b> option. <i>See also</i> rollback configuration.
<b>resolve</b>	Next hop for a static route that allows the router to perform a recursive lookup to locate the physical next hop for the route.
<b>resource public key infrastructure</b>	RPKI. A public key infrastructure (PKI) that represents the allocation hierarchy of IP address space and autonomous system numbers. Also a distributed repository resource system for storing and disseminating the data objects that comprise the PKI, as well as other signed objects necessary for improved routing security. <i>See</i> Internet draft draft-ietf-sidr-arch-13, <i>An Infrastructure to Support Secure Internet Routing</i> .



<b>Resource Reservation Protocol</b>	RSVP. Establishes a session between two routers to transport a specific traffic flow. <i>See also</i> RSVP—TE.
<b>Resource Reservation Protocol—Traffic Engineering</b>	RSVP—TE. RSVP with traffic engineering extensions, as defined by RFC 3209, that allow RSVP to establish label-switched paths (LSPs) in MPLS networks. <i>See also</i> MPLS, RSVP.
<b>resource threshold monitor</b>	RTM. CLI mode that enables you to set the rising and falling thresholds and trap hold-down times for certain interfaces. You can also view the resource threshold information.
<b>response message</b>	RIP message used to advertise routing information into a network.
<b>response rule</b>	Response rules control how the Junos App Balancer should handle a response. <i>See also</i> request rule.
<b>Response Time Reporter</b>	RTR. Feature that enables you to monitor network performance and resources by measuring response times and the availability of your network devices. The primary objective of RTR is to collect statistics and information about network performance.
<b>REST</b>	Representational State Transfer. Standard architecture, used for creating Web services, that focuses on a system's resources. REST supersedes SOAP.
<b>RESTCONF</b>	REST-based protocol that operates over HTTP and uses data stores defined in NETCONF to access data defined in YANG. <i>See also</i> HTTP, NETCONF, REST, YANG.
<b>RESTful</b>	Adjective that indicates use of the REST architecture—for example, RESTful Web service or RESTful API. <i>See also</i> REST.
<b>result cell</b>	Junos OS data structure generated by the Internet Processor ASIC after performing a forwarding table lookup.
<b>ResvConf message</b>	RSVP message that allows the egress router to receive an explicit confirmation message from a neighbor that its Resv message was received.
<b>ResvErr message</b>	RSVP message indicating that an error has occurred along an established LSP. The message is advertised downstream toward the egress router, and it does not remove any RSVP soft state from the network.
<b>ResvTear message</b>	RSVP message indicating that the established LSP and its associated soft state should be removed by the network. The message is advertised upstream toward the ingress router.
<b>Return Material Authorization</b>	RMA. Type of authorization number a customer must obtain to receive hardware replacement parts in the event of a hardware failure. Along with an RMA number, the customer must have purchased a Hardware Replacement Support Plan to receive replacement parts. Such parts can be refurbished or can be substituted with similar products at the option of Juniper Networks. Juniper Networks does not guarantee that new replacement parts will be shipped.

<b>reverse path forwarding</b>	RPF. Algorithm that checks the unicast routing table to determine whether there is a shortest path back to the source address of the incoming multicast packet. Unicast RPF helps determine the source of denial-of-service attacks and rejects packets from unexpected source addresses.
<b>reverse path multicasting</b>	RPM. Routing algorithm used by Distance Vector Multicast Routing Protocol (DVMRP) to forward multicast traffic.
<b>reverse proxy</b>	A server installed in front of origin servers that processes inbound traffic. Reverse proxies are used for scaling origin servers, by performing caching (serving commonly-accessed files), load balancing, and security (denying requests, preventing direct origin server access, and so forth). <i>See also</i> mid-tier proxy, transparent proxy.
<b>revert timer</b>	For SONET Automatic Protection Switching (APS), a timer that specifies the amount of time (in seconds) to wait after the working circuit has become functional before making the working circuit active again.
<b>rewrite rules</b>	Set the appropriate class-of-service (CoS) bits in an outgoing packet. This allows the next downstream router to classify the packet into the appropriate service group. <i>Also known as</i> CoS value marking.
<b>RFC</b>	Request for Comments. Internet standard specifications published by the Internet Engineering Task Force (IETF).
<b>RFI</b>	radio frequency interference. Interference from high-frequency electromagnetic waves emanating from electronic devices.
<b>RHEL</b>	Red Hat Enterprise Linux. Distribution of the Linux operating system developed for the business market.
<b>RIB</b>	routing information base. Logical data structure used to store routing information, including routes learned from peers, local routes resulting from the application of protocol policies to the learned routes, and the routes advertised to peers. Can consist of multiple routing tables. <i>See also</i> routing table.
<b>RID</b>	router identification. IP address used by a router to uniquely identify itself to a routing protocol or autonomous system. This address might not be equal to a configured interface address.
<b>RIP</b>	Routing Information Protocol. Interior gateway protocol (IGP) typically used in small, homogeneous IPv4 networks, it uses distance-vector routing to route information based on hop count. <i>See also</i> distance-vector routing.
<b>RIP hold-down timer</b>	Timer for setting the time after which an invalid route is removed from the routing table. <i>Also known as</i> RIP flush timer.
<b>RIP messages</b>	Messages sent from the RIP port that contain routing information. RIP exchanges routing information by means of User Datagram Protocol (UDP) data packets. Each RIP router sends and receives datagrams on UDP port number 520, the RIP version 1/RIP version 2 port. All communications intended for another router's RIP process area are sent from the RIP port.

<b>RIP metric</b>	Compares the value of different routes, based on hop count. The hop count is the number of routers that data packets must traverse between RIP networks. Metrics range from 0 for a directly connected network to 16 for an unreachable network. This small range prevents RIP from being useful for large networks. <i>See also</i> cost.
<b>RIP route timeout</b>	Time after which a route that is installed in the routing table is marked as invalid unless refreshed. <i>Also known as</i> RIP invalid timeout.
<b>RIPng</b>	Routing Information Protocol next generation. Used in IPv6 networks, a distance-vector interior gateway protocol that makes routing decisions based on hop count.
<b>Rivest-Shamir-Adleman (encryption algorithm)</b>	RSA. Algorithm for public key encryption.
<b>RJ-45 connector</b>	Connector commonly used for 10Base and 100Base Ethernet connections.
<b>RMA</b>	Return Material Authorization. Type of authorization number a customer must obtain to receive hardware replacement parts in the event of a hardware failure. Along with an RMA number, the customer must have purchased a Hardware Replacement Support Plan to receive replacement parts. Such parts can be refurbished or can be substituted with similar products at the option of Juniper Networks. Juniper Networks does not guarantee that new replacement parts will be shipped.
<b>RMON</b>	remote monitoring. Standard MIB that defines current and historical MAC-layer statistics and control objects, allowing you to capture real-time information across the entire network. This allows you to detect, isolate, diagnose, and report potential and actual network problems.
<b>RNC</b>	radio network controller. Manages the radio part of the network in UMTS.
<b>ROA</b>	route origin authorization. A digitally signed object that provides a means of verifying that an IP address block holder has authorized an autonomous system to originate routes to one or more prefixes within the address block. See Internet draft draft-ietf-sidr-roa-format-12, <i>A Profile for Route Origin Authorizations (ROAs)</i> . ROAs are not directly used in route validation. The cache exports a simplified version of the ROA to the router as a route validation record.
<b>role-based access control</b>	RBAC. Defined set of privileges that can be assigned to users and user groups to control access to cloud customer premises equipment (CPE) solutions.
<b>role-based administration</b>	Method of creating a security environment by defining strategic roles for administrators and creating domains of network devices where access is granted by assigned role.
<b>rollback configuration</b>	One of the 50 previously committed Junos OS configurations that you can revert to by using the <b>rollback</b> command with the <i>number</i> option, where <i>number</i> is the index number of the previous configuration to retrieve. Values for <i>number</i> can range from 0 (for the most recently committed configuration) through 49. The default is 0 (device reverts to the most recently committed configuration). <i>See also</i> rescue configuration.

<b>ROM</b>	read-only memory. Medium used in electronic devices to store data that is not modified. ROM retains its contents even after the computer is turned off. ROM is <i>nonvolatile</i> , whereas RAM is <i>volatile</i> . <i>See also</i> RAM.
<b>root certificate</b>	Self-signed public key certificate for a root CA; root certificates are used to verify other certificates.
<b>Root System Domain</b>	RSD. Pair of redundant Routing Engines on Juniper Networks routing platforms connected to the switch fabric on the Juniper Control System (JCS) platform. The configuration on the Routing Engines on the Juniper Networks routing platforms provides the RSD identification and the configuration of up to eight Protected System Domains (PSDs).
<b>root user</b>	Predefined, special UNIX-like user account. The root user has full permissions and unrestricted access to the system to perform system administration tasks. <i>Also known as</i> superuser.
<b>round-robin server access</b>	Method of access for RADIUS servers. The first configured server is treated as a primary for the first request, the second server configured as primary for the second request, and so on. When the router reaches the end of the list of servers, it starts again at the top of the list until it comes full cycle through the list. <i>See also</i> direct server access.
<b>route distinguisher</b>	6-byte value identifying a VPN that is prefixed to an IPv4 address to create a unique IPv4 address. The new address is part of the VPN IPv4 address family, which is a BGP address family added as an extension to the BGP protocol. It allows you to configure private addresses within the VPN by preventing overlap with the private addresses in other VPNs.
<b>route filter</b>	Junos OS syntax used in a routing policy to match an individual route or a group of routes.
<b>route flap damping, route flap dampening</b>	Method for minimizing instability caused by route flapping. The router stores a penalty value with each route. Each time the route flaps, the router increases the penalty by 1000. If the penalty for a route reaches a configured suppress value, the router suppresses the route. That is, the router does not include the route as a forwarding entry and does not advertise the route to BGP peers. <i>See also</i> route flapping.
<b>route flapping</b>	Condition of network instability where a route is announced and withdrawn repeatedly, often as the result of an intermittently failing link. <i>Also known as</i> flapping.
<b>route identifier</b>	IP address of the router from which a BGP, IGP, or OSPF packet originated.

<b>route leakage</b>	<p>Process of allowing routes from one protocol or area to be learned by another protocol or area. Routes can be leaked into OSPF or from OSPF as follows:</p> <ul style="list-style-type: none"> <li>• Route leakage into OSPF—When another routing protocol adds a new route to the routing table, or when a static route is added to the routing table, OSPF can be informed through the redistribute commands. When OSPF learns the new route, it floods the information into the routing domain by using external LSAs.</li> <li>• Route leakage from OSPF—OSPF adds routing information to the routing table, which is used in forwarding IP packets.</li> </ul>
<b>route maps</b>	<ul style="list-style-type: none"> <li>• Modify the characteristics of a route (generally to set its metric or to specify additional attributes) as it is transmitted or accepted by a router. Route maps control and modify routing information and define conditions for redistributing routes between routing domains. Route maps can use access lists to identify the set of routes to modify.</li> <li>• In BGP, route maps consist of match clauses and set clauses. Match clauses specify the attribute values that determine whether a route matches a route map. Set clauses modify the specified attributes of routes that pass all match clauses in the route map.</li> </ul> <p><i>Also known as routing policy.</i></p>
<b>route origin authorization</b>	<p>ROA. A digitally signed object that provides a means of verifying that an IP address block holder has authorized an autonomous system to originate routes to one or more prefixes within the address block. See Internet draft draft-ietf-sidr-roa-format-12, <i>A Profile for Route Origin Authorizations (ROAs)</i>. ROAs are not directly used in route validation. The cache exports a simplified version of the ROA to the router as a route validation record.</p>
<b>route preference</b>	<p>Value (integer in the range 0 through 255) associated with each route that a router uses to select an active route when multiple routes exist. The value is determined by the protocol or origin of the route. The lower the preference value of a route, the more likely the route is to be selected as the active route. Routes with a preference of 255 are not installed in the routing table. <i>Also known as administrative distance.</i></p>
<b>route redistribution</b>	<p>Method of placing learned routes from one protocol into another protocol operating on the same router. Junos OS accomplishes this with a routing policy. <i>Also known as redistribution.</i></p>
<b>route reflection</b>	<p>In BGP, the configuration of a group of routers into a cluster in which one system acts as a route reflector, redistributing routes from outside the cluster to all routers in the cluster. Routers in a cluster do not need to be fully meshed. An alternative to confederations as a strategy to reduce IBGP meshing. BGP specifies that a BGP speaker cannot advertise routes to an IBGP neighbor if the speaker learned the route from a different IBGP neighbor. In route reflection, a BGP speaker (the route reflector) advertises routes learned from each of its IBGP neighbors to its other IBGP neighbors. Routes are reflected among IBGP routers that are not meshed. <i>See also cluster, confederation, route reflector, route reflector client.</i></p>

<b>route reflector</b>	<p>BGP speaker that advertises routes learned from each of its IBGP neighbors to its other IBGP neighbors; routes are reflected among IBGP routers that are not meshed. The route reflector's neighbors are called route reflector clients. The clients are neighbors only to the route reflector, not to each other. Each route reflector client depends on the route reflector to advertise its routes within the AS; each client also depends on the route reflector to pass routes to the client.</p> <p>A route reflector and its clients are collectively referred to as a cluster. Clients peer only with a route reflector and do not peer outside their cluster. Route reflectors peer with clients and other route reflectors within a cluster; outside a cluster they peer with other reflectors and other routers that are neither clients nor reflectors. Route reflectors and nonclient routers must be fully meshed. <i>See also</i> route reflector client.</p>
<b>route reflector client</b>	<p>A neighbor of a route reflector. The clients are neighbors only to the route reflector, not to each other. Each route reflector client depends on the route reflector to advertise its routes within the AS. Each client also depends on the route reflector to pass routes to the client. <i>See also</i> cluster, route reflector.</p>
<b>route tag</b>	<ul style="list-style-type: none"> <li>Field in an RIP message that allows boundary routers in an autonomous system (AS) to exchange information about external routes. Route tags provide a method of separating internal RIP routes (routes within the RIP routing domain) from external RIP routes, which may have been imported from an EGP (Exterior Gateway Protocol) or another IGP (Interior Gateway Protocol).</li> <li>In IS-IS, a numeric value assigned to the IP addresses on an IS-IS route before the route is propagated to other routers in an IS-IS domain. You can use this tag to control IS-IS route redistribution, route leaking, or route summarization by referencing it in a route map.</li> </ul>
<b>route target</b>	<p>BGP extended community used to define VPN membership. The route target appears in a field in the update messages associated with VPN-IPv4. You create route-target import lists and route-target export lists for each VRF. The route targets that you place in a route-target export list are attached to every route advertised to other PE routers. When a PE router receives a route from another PE router, it compares the route targets attached to each route against the route-target import list defined for each of its VRFs. If any route target attached to a route matches the import list for a VRF, then the route is imported to that VRF. If no route target matches the import list, then the route is rejected for that VRF.</p>
<b>route validation record</b>	<p>RV record. A (prefix, maximum length, origin AS) triple. Informally sometimes called an ROA but formally different from the ROA defined in SIDR specifications. A route validation record matches any route whose prefix matches the route validation prefix, and whose prefix length does not exceed the maximum length given in the route validation record, and whose origin AS equals the origin AS given in the route validation record. Route validation records are received from the cache using the protocol defined in Internet draft draft-ietf-sidr-rpki-rtr-24, <i>The RPKI/Router Protocol</i> and can also be configured statically. <i>See also</i> ROA.</p>

<b>route-refresh capability</b>	Lower-cost alternative to soft reconfiguration as a means to change policies without major disruptions. The router advertises the route-refresh capability when it establishes a BGP session with a peer to indicate that it is capable of exchanging BGP route-refresh messages. <i>See also</i> cooperative route filtering, soft reconfiguration.
<b>routed VLAN interface</b>	RVI. Interface that binds specific VLANs to Layer 3 interfaces, enabling a switch to forward packets between those VLANs. RVIs reduce the complexity of processing by eliminating the need for a router to connect VLANs between which packets are sent. <i>Also known as</i> integrated routing and bridging (IRB) interface.
<b>router ID</b>	RID. IP address used by a router to uniquely identify itself to a routing protocol or autonomous system. This address might not be equal to a configured interface address.
<b>router LSA</b>	OSPF link-state advertisement sent by each router in the network. It describes the local router's connected subnets and their metric values.
<b>router priority</b>	Numerical value assigned to an OSPF or IS-IS interface that is used as the first criterion in electing the designated router or designated intermediate system, respectively.
<b>router solicitation address</b>	IP address to which a DHCP client can transmit router solicitation requests.
<b>router-link advertisement</b>	OSPF link-state advertisement flooded throughout a single area by all routers to describe the state and cost of the router's links to the area.
<b>router.conf</b>	Default router configuration file for autoinstallation, with a minimum configuration sufficient for you to telnet to the device and configure it manually.
<b>routing domain</b>	Collection of contiguous networks that provide full connectivity to all end systems located within them. A routing domain is partitioned into areas. <i>See also</i> AS.
<b>Routing Engine</b>	Portion of the router that handles all routing protocol processes, as well as other software processes that control the router's interfaces, some of the chassis components, system management, and user access to the router.
<b>routing gateway</b>	Firewall, Network Address Translation (NAT) router, or other routing device used as a customer premises equipment (CPE) terminator in the home, office, or local point of presence (POP).
<b>routing information base</b>	RIB. Logical data structure used to store routing information, including routes learned from peers, local routes resulting from the application of protocol policies to the learned routes, and the routes advertised to peers. Can consist of multiple routing tables. <i>See also</i> routing table.
<b>Routing Information Protocol</b>	RIP. Interior gateway protocol (IGP) typically used in small, homogeneous IPv4 networks, it uses distance-vector routing to route information based on hop count. <i>See also</i> distance-vector routing.

<b>Routing Information Protocol next generation</b>	RIPng. Used in IPv6 networks, a distance-vector interior gateway protocol that makes routing decisions based on hop count.
<b>routing instance</b>	Collection of routing tables, interfaces, and routing protocol parameters. The set of interfaces is contained in the routing tables, and the routing protocol parameters control the information in the routing tables.
<b>routing matrix</b>	A system consisting of a TX Matrix router or a TX Matrix Plus router and connected LCCs.
<b>routing plane</b>	Used to describe the interconnected routing engines within a routing matrix. There are two routing planes: the primary routing plane, which includes all primary Routing Engines, and the backup routing plane, which includes all backup routing planes.
<b>routing policy</b>	Method to control flow of routes into and out of the router. Determines how the system handles the routes it receives from and sends to neighboring routers. In many cases, routing policy consists of filtering routes, accepting certain routes, accepting and modifying other routes, and rejecting some routes. <i>Also known as route map.</i>
<b>routing protocol daemon</b>	rpd. Junos OS routing protocol process (daemon). User-level background process responsible for starting, managing, and stopping the routing protocols on a Juniper Networks router.
<b>routing table</b>	Common database of routes learned from one or more routing protocols. Because each protocol typically has multiple routes to a destination, the IP routing table maintains the one best route by protocol. All routes are maintained by the Junos OS routing protocol process.
<b>RP</b>	rendezvous point. For PIM sparse mode, a core router acting as the root of the distribution tree in a shared tree.
<b>RPC</b>	remote procedure call. Type of protocol that allows a computer program running on one computer to cause a function on another computer to be executed without explicitly coding the details for this interaction.
<b>rpd</b>	Junos OS routing protocol process (daemon). User-level background process responsible for starting, managing, and stopping the routing protocols on a Juniper Networks router.
<b>RPF</b>	reverse path forwarding. Algorithm that checks the unicast routing table to determine whether there is a shortest path back to the source address of the incoming multicast packet. Unicast RPF helps determine the source of denial-of-service attacks and rejects packets from unexpected source addresses.
<b>RPKI</b>	resource public key infrastructure. A public key infrastructure (PKI) that represents the allocation hierarchy of IP address space and autonomous system numbers. Also a distributed repository resource system for storing and disseminating the data objects that comprise the PKI, as well as other signed objects necessary for improved routing security, See Internet draft draft-ietf-sidr-arch-13, <i>An Infrastructure to Support Secure Internet Routing</i> .



<b>RPM</b>	<ul style="list-style-type: none"> <li>• real-time performance monitoring. Tool for creating active probes to track and monitor traffic. <i>Also known as</i> IP service-level agreement (SLA) probe, IP SLA monitoring.</li> <li>• reverse path multicasting. Routing algorithm used by the Distance Vector Multicast Routing Protocol (DVMRP) to forward multicast traffic.</li> </ul>
<b>RPM target</b>	Remote network endpoint, identified by an IP address or URL, to which the device sends a real-time performance monitoring (RPM) probe.
<b>RPM test</b>	A collection of real-time performance monitoring (RPM) probes sent out at regular intervals.
<b>RRO</b>	record route object. An RSVP message object that notes the IP address of each router along the path of an LSP.
<b>RS-232</b>	Recommended Standard 232. Serial line protocol recommended standard. Standard connector commonly used in computer serial ports. <i>Also known as</i> EIA-232.
<b>RS-449</b>	Recommended Standard 449. Serial line protocol recommended standard that defines the functional and mechanical characteristics of the interface between DTE and DCE. <i>Also known as</i> EIA-449.
<b>RSA</b>	Rivest-Shamir-Adleman (encryption algorithm). Algorithm for public key encryption.
<b>RSA codes</b>	RC2, RC4, RC5. Family of proprietary (RSA Data Security, Inc.) encryption schemes often used in Web browsers and servers. These codes use variable-length keys up to 2048 bits.
<b>RSD</b>	Root System Domain. Pair of redundant Routing Engines on Juniper Networks routing platforms connected to the switch fabric on the Juniper Control System (JCS) platform. The configuration on the Routing Engines on the Juniper Networks routing platforms provides the RSD identification and the configuration of up to eight Protected System Domains (PSDs).
<b>RSTP</b>	Rapid Spanning Tree Protocol. Used to prevent loops in bridge configurations. RSTP is not aware of VLANs, and blocks ports at the physical level. <i>See also</i> MSTP.
<b>RSVP</b>	Resource Reservation Protocol. Establishes a session between two routers to transport a specific traffic flow. <i>See also</i> RSVP—TE.
<b>RSVP MD5 authentication</b>	Method of authentication that provides hop-by-hop security against message spoofing and replay attacks. When authentication is configured, RSVP embeds an integrity object within secure cleartext RSVP messages sent between peers. The integrity object includes a key ID unique to the sender, a message sequence number, and keyed message digest. These attributes enable verification of both packet content and sender.
<b>RSVP Path message</b>	Sent by the ingress router downstream toward the egress router. It begins the establishment of a soft state database for a particular label-switched path.

<b>RSVP Resv message</b>	Sent by the egress router upstream toward the ingress router. It completes the establishment of the soft state database for a particular label-switched path.
<b>RSVP signaled LSP</b>	Label-switched path that is dynamically established using RSVP Path and Resv messages.
<b>RSVP—TE</b>	Resource Reservation Protocol—Traffic Engineering. RSVP with traffic engineering extensions, as defined by RFC 3209, that allow RSVP to establish label-switched paths (LSPs) in MPLS networks. <i>See also</i> MPLS, RSVP.
<b>RTG</b>	Redundant Trunk Group. Feature available on EX Series and QFX Series switches deployed at the access layer that enables you to create a group of two ports that serve as redundant uplinks to two other switches, usually in the distribution layer. At a time, one of the two ports is active and the other, inactive. A failure on the active uplink port causes the inactive port to become active.
<b>RTM</b>	resource threshold monitor. CLI mode that enables you to set the rising and falling thresholds and trap hold-down times for certain interfaces. You can also view the resource threshold information.
<b>RTMP</b>	Real-Time Messaging Protocol. A multimedia streaming and remote procedure call (RPC) protocol primarily used in Adobe Flash. RTMP has three variations: The “plain” protocol that works on top of TCP and uses port 1935; RTMPT which is encapsulated within HTTP requests to traverse firewalls; and RTMPS which works just like RTMPT but over a secure HTTPS connection.
<b>RTO</b>	run time object. Code object created dynamically in memory during normal operation. Some examples of RTOs are session table entries, ARP cache entries, certificates, DHCP leases, and IPsec Phase 2 security associations (SAs).
<b>RTP</b>	Real-Time Transport Protocol. Internet protocol that provides mechanisms for the transmission of real-time data, such as audio, video, or voice, over IP networks. Compressed RTP is used for VoIP traffic.
<b>RTR</b>	Response Time Reporter. Feature that enables you to monitor network performance and resources by measuring response times and the availability of your network devices. The primary objective of RTR is to collect statistics and information about network performance.
<b>RTSP</b>	Real-Time Streaming Protocol. Application-level protocol for control over the delivery of data with real-time properties, it provides an extensible framework to enable controlled, on-demand delivery of real-time data such as audio and video. Sources of data can include both live data feeds and stored clips. This protocol is intended to control multiple data delivery sessions, provide a means for choosing delivery channels such as UDP, multicast UDP and TCP, and provide a means for choosing delivery mechanisms based upon RTP.
<b>RTVBR</b>	real-time variable bit rate. For ATM2 intelligent queuing (IQ) interfaces, data that is serviced at a higher priority rate than other VBR data. RTVBR is suitable for carrying packetized video and audio. RTVBR provides better congestion control and latency guarantees than non-real-time VBR.

<b>RU</b>	rack unit. The standard single unit height of a rack-mounted device.
<b>rule</b>	Conditional protocol or statement that defines a specific type of network traffic. When traffic passes through a security device, the device attempts to match that traffic against its list of rules. If a rule is matched, the device performs the action defined in the rule against the matching traffic.
<b>rule base</b>	Set of rules that defines what traffic is and is not allowed to pass, using a specific detection mechanism to identify and prevent attacks. A security policy contains one or more rule bases. For example, NSM can contain three types of rule bases: zone, global, and multicast.
<b>RuleBuilder</b>	A visual editor for creating rules, which allows you to select conditions on the request to be examined, and actions that follow if any or all of these conditions are met.
<b>run time object</b>	RTO. Code object created dynamically in memory during normal operation. Some examples of RTOs are session table entries, ARP cache entries, certificates, DHCP leases, and IPsec Phase 2 security associations (SAs).
<b>RV record</b>	route validation record. A (prefix, maximum length, origin AS) triple. Informally sometimes called an ROA but formally different from the ROA defined in SIDR specifications. A route validation record matches any route whose prefix matches the route validation prefix, and whose prefix length does not exceed the maximum length given in the route validation record, and whose origin AS equals the origin AS given in the route validation record. Route validation records are received from the cache using the protocol defined in Internet draft draft-ietf-sidr-rpki-rtr-24, <i>The RPKI/Router Protocol</i> and can also be configured statically. <i>See also</i> ROA.
<b>RVI</b>	routed VLAN interface. Interface that binds specific VLANs to Layer 3 interfaces, enabling a switch to forward packets between those VLANs. RVIs reduce the complexity of processing by eliminating the need for a router to connect VLANs between which packets are sent. <i>Also known as</i> integrated routing and bridging (IRB) interface.
<b>RWS</b>	receive window size. Number of packets that an L2TP peer can transmit without receiving an acknowledgment from the router. L2TP uses the RWS to implement a sliding window mechanism for the transmission of control messages. If the RWS is not configured for the L2TP tunnel, the router determines the RWS and uses this value for all new tunnels on both the L2TP access concentrator (LAC) and the L2TP network server (LNS).
<b>RX</b>	Communications abbreviation for receive; the corresponding abbreviation for transmit is TX.

## S

<b>S-TAG</b>	Field defined in the IEEE 802.1ad Q-in-Q encapsulation header that carries the S-VLAN identifier information <i>See also</i> B-TAG.
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<b>S-tagged service interface</b>	Interface between a customer edge (CE) device and the I-BEB or IB-BEB network components. Frames passed through this interface contain an S-TAG field. Similarly, a B-tagged service interface contains a B-TAG field.
<b>S-VLAN</b>	stacked VLAN, service VLAN, or switched VLAN. Provides a two-level VLAN tag structure, with a specific service instance VLAN identifier carried inside the S-TAG field. Creating an S-VLAN requires the use of a second encapsulation tag; the router performs de-encapsulation twice, once to get the S-VLAN tag and once to get the VLAN tag. This double tagging approach enables more than 16 million address possibilities, extending the VLAN ID space to more than 16 million VLANs. This meets and exceeds the scaling requirement for Ethernet B-RAS applications. Defined by IEEE 802.1ad, an S-VLAN often corresponds to a network aggregation device such as a DSLAM. Scheduling and shaping is often established for an S-VLAN to provide CoS for downstream devices with little buffering and simple schedulers. <i>See also</i> B-VID, C-VLAN, Q-in-Q.
<b>S-VLAN oversubscription</b>	Ability to configure up to the maximum number of S-VLANs supported on an I/O module or IOA, knowing that no more than the maximum number of supported PPP sessions can be connected to the router at any one time.
<b>S-VLAN tunnel</b>	Special type of stacked VLAN that uses a single interface to tunnel traffic from multiple VLANs across an MPLS network. The S-VLAN tunnel enables multiple VLANs, each configured with a unique VLAN ID tag, to share a common S-VLAN ID tag when they traverse an MPLS network.
<b>S/T interface</b>	system reference point/terminal reference point interface. A four-pair connection between the ISDN provider service and the customer terminal equipment.
<b>SA</b>	security association. Set of security parameters that dictates how IPsec processes a packet. The SA defines what rules to use for authentication and encryption algorithms, key exchange mechanisms, and secure communications between two parties. A single secure tunnel uses multiple SAs. <i>See also</i> SA parameters.
<b>SA parameters</b>	Actual session parameters used to secure a specific data flow associated with a specific secure IP interface. How SA parameters are set depends on how the IP interfaces are secured: <ul style="list-style-type: none"> <li>• For manual secure IP interfaces, the system administrator sets SA parameters manually, which allows provisioning IP security (using IKE) to destinations that do not support SA negotiation.</li> <li>• For signaled secure IP interfaces, the two security gateway peers negotiate SA parameters; the system administrator cannot set any of the parameters. For some of these parameters, such as session keys, the system administrator does not have even read access.</li> </ul>
<b>SaaS</b>	Software as a Service. Application software and databases that are leased by a cloud provider to customers as needed. The cloud provider provides and runs the data center on which the application software runs. <i>See also</i> cloud computing, IaaS, NaaS, PaaS.

<b>SAE</b>	<ul style="list-style-type: none"> <li>• service activation engine. Core manager of the Session and Resource Control (SRC) network. The SAE interacts with other systems, such as Juniper Networks routers, cable modem termination system (CMTS) devices, directories, Web application servers, and RADIUS servers, to retrieve and disseminate data in the SRC environment. The SAE authorizes, activates and deactivates, and tracks subscriber and service sessions. It also collects accounting information about subscribers and services.</li> <li>• System Architecture Evolution. Core network architecture of the 3GPP's LTE wireless communication standard. <i>See also</i> Third-Generation Partnership Project (3GPP).</li> </ul>
<b>SAFI</b>	subsequent address family identifier. Number that further identifies an address family identified by an AFI. In an MP-BGP update message, SAFI is used with AFI to identify the Network Layer protocol associated with the network address of the next hop and the semantics of the NLRI that follows. <i>See also</i> AFI.
<b>salt encryption</b>	Random string of data used to modify a password hash.
<b>sampling</b>	Method where the sampling key based on the IPv4 header is sent to the Routing Engine. There, the key is placed in a file, or cflowd packets based on the key are sent to a cflowd server.
<b>SAN</b>	storage area network. Network whose primary purpose is the transfer of data between computer systems and storage devices. This term is most commonly used in the context of any network that supports block storage, usually iSCSI, Fibre Channel, and FCoE networks.
<b>SAP</b>	<ul style="list-style-type: none"> <li>• service access point. Device that identifies routing protocols and provides the connection between the network interface card and the rest of the network.</li> <li>• Session Announcement Protocol. Used with multicast protocols to handle session conference announcements.</li> </ul>
<b>SAR</b>	segmentation and reassembly. Buffering used with ATM.
<b>SAR scheduler</b>	One part of the integrated scheduler used to extend ATM QoS functionality. The commercial SAR scheduler enables you to configure traditional ATM cell-based QoS. <i>See also</i> HRR scheduler.
<b>SAS</b>	serial-attached SCSI. Data transfer technology used to move data to and from computer storage devices such as hard drives and tape drives.
<b>SATA</b>	Serial Advanced Technology Attachment. A computer bus technology primarily for transfer of data to and from a hard disk.
<b>satellite device</b>	In a Junos fusion, device that connects to an aggregation device and provides network-facing ports—called extended ports—for the Junos fusion. Satellite devices run satellite software. <i>See also</i> Junos fusion, aggregation device.

<b>satellite device cluster</b>	In a Junos fusion, group of interconnected satellite devices that are cabled into the aggregation device collectively as a cluster instead of being connected as individual satellite devices.
<b>satellite device software</b>	Software run by satellite devices in a Junos fusion that has the built-in intelligence to extend the feature set of Junos OS onto the satellite device.
<b>satellite software</b>	In a Junos fusion, software that runs on satellite devices. Satellite software has the built-in intelligence to extend features from Junos OS running on the aggregation device to the network-facing interfaces—the extended ports—on the satellite devices. <i>See also</i> aggregation device, satellite device.
<b>SC</b>	system controller. Subsystem located on the SRP modules on the E320 router that controls the overall operations on the router.
<b>SC-FDMA</b>	single-carrier frequency-division multiple access. Multiple access scheme that deals with the assignment of multiple users to a shared communication resource. SC-FDMA can be interpreted as a linearly precoded orthogonal frequency-division multiple access (OFDMA) scheme. In SC-FDMA, multiple access among users is enabled by assigning different sets of nonoverlapping subcarriers to different users. SC-FDMA generates a single-carrier transmit signal, whereas OFDMA is a multicarrier transmission scheme. <i>See also</i> orthogonal frequency-division multiple access (OFDMA).
<b>SCB</b>	System Control Board. On an M40 router, the part of the Packet Forwarding Engine that performs route lookups, monitors system components, and controls FPC resets.
<b>SCC</b>	switch-card chassis. The centralized switch-card chassis that connects multiple line-card chassis (LCCs) into a routing matrix. For example, the TX Matrix router chassis is a switch-card chassis that connects to T640 line-card chassis. <i>See also</i> scc.
<b>scc</b>	Junos OS CLI term for the TX Matrix switch-card chassis (SCC). Use lowercase term only to represent actual CLI commands or sample output. <i>See also</i> switch-card chassis.
<b>SCEP</b>	Simple Certificate Enrollment Protocol. Protocol for digital certificates that supports certificate authority (CA) and registration authority (RA) public key distribution, certificate enrollment, certificate revocation, certificate queries, and certificate revocation list (CRL) queries.
<b>SCG</b>	SONET Clock Generator. On a T640 routing node, provides the Stratum 3 clock signal for the SONET/SDH interfaces. Also provides external clock inputs.
<b>schedule object</b>	Object that defines the time interval that a firewall rule is in effect. Use a schedule object in a firewall rule to determine when a device enforces that rule.
<b>scheduler hierarchy</b>	Hierarchical, tree-like arrangement of scheduler nodes and queues. The router supports up to three levels of scheduler nodes stacked above a port (level 0), with a final level of queues stacked above the nodes. A traffic-class group uses a scheduler level at level 1.

<b>scheduler maps</b>	In class of service, schedule maps associate schedulers with specific forwarding classes. <i>See also</i> schedulers, forwarding classes.
<b>scheduler node</b>	Element within the hierarchical scheduler that implements bandwidth controls for a group of queues. Queues are stacked above scheduler nodes in a hierarchy. The root node is associated with a channel or physical port.
<b>scheduler profile</b>	Collection of commands that configures the bandwidth at which queues drain as a function of relative weight, assured rate, and shaping rate.
<b>schedulers</b>	Define the priority, bandwidth, delay buffer size, rate control status, and RED drop profiles of a packet transmission. Schedulers are mapped to a specific forwarding class by a scheduler map. <i>See also</i> scheduler maps.
<b>scheduling</b>	Method of determining which type of packet or queue is transmitted before another. An individual router interface can have multiple queues assigned to store packets. The router then determines which queue to service based on a particular method of scheduling. This process often involves a determination of which type of packet should be transmitted before another. For example, first in, first out (FIFO). <i>See also</i> FIFO.
<b>schema-based Configuration Editor</b>	Configuration editor used to modify device configurations in managed devices running Junos OS in the Junos Space Network Management Platform database. You can modify any portion of a device configuration from the Junos Space user interface.
<b>scope</b>	Value used in some unicast and multicast IPv6 addresses that identifies the application suitable for the address. <i>See also</i> address scope.
<b>SCP</b>	Secure Copy Protocol. Network protocol that supports file transfers between network hosts.
<b>SCP</b>	<ul style="list-style-type: none"> <li>secure channel protocol. A method of transferring data that makes it less susceptible to tampering. The SCP pseudo-URL format is: <b>scp:// username [:password]@ hostname/path [/filename]</b>. The path is an absolute path; paths relative to the user's home directory are not currently supported. You must have an SCP server installed to send SCP files to your machine. Used with Media Flow Controller.</li> <li>secure copy. A protocol, program, or command based on Secure Shell Protocol (SSH) that securely transfers computer files, usually between a local and a remote host or between two remote hosts.</li> </ul>
<b>SCR</b>	sustained cell rate. Upper bound on the conforming average rate of an ATM connection over a sustained time interval that is longer than the time interval for which the PCR is defined.
<b>SCSI</b>	small computer system interface. A standard interface and command set for transferring data between devices over a computer bus.

<b>SCU</b>	source class usage. Means of tracking traffic originating from specific prefixes on the provider core router and destined for specific prefixes on the customer edge router, based on the IP source and destination addresses.
<b>SD-WAN event</b>	software-defined WAN event. Event that is triggered when the service-level agreement (SLA) requirements for a site are not met on its network-designated WAN link. The event enables the network to switch WAN links to meet the SLA requirements.
<b>SD-WAN policy</b>	software-defined WAN policy. Traffic management policy that helps ensure optimum utilization of the WAN links and efficient distribution of traffic. SD-WAN policy rules use service-level agreement (SLA) profiles for traffic management.
<b>SDH</b>	Synchronous Digital Hierarchy. International standard defined by the International Telecommunication Union for transmitting bits over fiber-optic cable. A CCITT variation of the SONET standard.
<b>SDN</b>	software-defined networking. Approach to computer networking that uses methods of network abstraction, such as virtualization, to simplify and scale network components and uses software to define and manage network components. SDN separates the data plane, which forwards traffic, from the control plane, which manages traffic flow, and enables users to program network layers. SDN is often used with Network Functions Virtualization (NFV) to allow agile placement of networking services when and where they are needed. By enabling this level of programmability, SDN enables users to optimize their network resources, increase network agility, provide service innovation, accelerate service time-to-market, extract business intelligence, and ultimately enable dynamic, service-driven virtual networks. <i>See also</i> NFV.
<b>SDP</b>	Session Description Protocol. Used with multicast protocols to handle session conference announcements.
<b>SDRAM</b>	synchronous dynamic random access memory. Electronic standard in which the inputs and outputs of SDRAM data are synchronized to an externally supplied clock, allowing for extremely fast consecutive read and write capacity. A type of RAM that is stored on dual in-line memory modules (DIMMs) and synchronized with the system clock.
<b>SDSL</b>	symmetric digital subscriber line. Version of digital subscriber line (DSL) where the upload speeds and download speeds are the same, typically in the range 144 Kbps–1.5 Mbps. SDSL uses one cable pair and does not share lines with analog phones.
<b>SDSN</b>	software-defined secure network. End-to-end network visibility solution that secures the entire network, physical and virtual. SDSN leverages cloud economics to find and stop threats faster than perimeter firewalls. It protects dynamic networks from attacks and creates a single, holistic defense domain that provides end-to-end network visibility. Using threat detection and policy enforcement, an SDSN solution automates and centrally manages security in a multivendor environment



<b>SDX software</b>	Service Deployment System software. Previous name for a customizable Juniper Networks product with which service providers can rapidly deploy IP services—such as video on demand (VoD), IP television, stateful firewalls, Layer 3 VPNs, and bandwidth on demand (BoD)—to hundreds of thousands of subscribers over a variety of broadband access technologies. <i>Now known as Session and Resource Control (SRC) software.</i>
<b>secondary input policy</b>	Evaluates conditions after a route lookup. <i>See also</i> input policy, output policy, policy.
<b>section layer</b>	For channelized OCx/STMx interfaces, the layer that manages the transport of STS/STM frames across the physical path. This layer is responsible for frame alignment, scrambling, error detection, error monitoring, signal reception, and signal regeneration. <i>See also</i> line layer, path layer.
<b>Secure Access Device</b>	Juniper Networks SSL VPN appliance.
<b>secure channel protocol</b>	SCP. A method of transferring data that makes it less susceptible to tampering. The SCP pseudo-URL format is: <b>scp:// username [:password]@ hostname/path [/filename]</b> . The path is an absolute path: paths relative to the user's home directory are not currently supported. You must have an SCP server installed to send SCP files to your machine. Used with Media Flow Controller.
<b>secure console</b>	Feature in Junos Space Network Management Platform that you use to initiate a secure remote access connection to managed and unmanaged devices from the Junos Space server. You can establish multiple SSH connections to connect to different devices simultaneously and execute CLI commands on these devices.
<b>secure copy</b>	SCP. A protocol, program, or command based on SSH (Secure Shell Protocol) that securely transfers computer files, usually between a local and a remote host or between two remote hosts.
<b>Secure Copy Protocol</b>	SCP. Network protocol that supports file transfers between network hosts.
<b>secure fabric</b>	A collection of network devices (switches, routers, firewalls, and other security devices), used by users or user groups, to which policies for aggregated threat prevention are applied.
<b>Secure File Transfer Protocol</b>	SFTP. A network protocol providing file access, transfer, and management securely over a data stream. The SFTP pseudo-URL format is: <b>sftp:// username@hostname: path[/filename]</b> . The path is an absolute path; paths relative to the user's home directory are not currently supported. You must have an FTP server installed in order to send FTP or SFTP files to your machine. SFTP uses SSH. Used with Media Flow Controller. <i>Also known as</i> SSH File Transfer Protocol.
<b>Secure Hash Algorithm</b>	SHA. One of the cryptographic hashing functions used by FIPS, it is a standard published by NIST. <i>See also</i> hashing, SHA-1.

<b>Secure Hash Algorithm 1</b>	SHA-1. Secure hash algorithm standard defined in FIPS PUB 180-1 (SHA-1). Developed by the National Institute of Standards and Technology (NIST), SHA-1 produces a 160-bit hash for message authentication. Longer-hash variants include SHA-224, SHA-256, SHA-384, and SHA-512 (sometimes grouped under the name “SHA-2”). SHA-1 is more secure than MD5. <i>See also</i> hashing, MD5.
<b>secure IP interfaces</b>	Virtual IP interfaces that you can configure to provide confidentiality and authentication services for the data flowing through such interfaces. The software provides these services using mechanisms created by the suite of IPsec standards established by the IETF.
<b>secure policy</b>	Policy that is created with a mirror action and that contains information about where to forward mirrored traffic during packet mirroring. <i>See also</i> packet mirroring.
<b>Secure Server Protocol</b>	SSP. Modified version of TCP that is more reliable than ordinary TCP, requires less CPU and memory resources from servers, and reduces the number of acknowledgement packets on the network. SSP uses AES encryption and SH1 authentication for all connections. NSM uses SSP for communication between the UI, the GUI Server, and the Device Server.
<b>Secure Shell</b>	SSH. Protocol that uses strong authentication and encryption for remote access across a nonsecure network. SSH provides remote login, remote program execution, file copy, and other functions. In a UNIX environment, SSH is intended as a secure replacement for rlogin, rsh, and rcp.
<b>Secure Sockets Layer</b>	SSL. Protocol that encrypts security information using public-private key technology, which requires a paired private key and authentication certificate, before transmitting data across a network.
<b>secure tunnel</b>	Virtual connection between two security gateways used to exchange data packets in a secure way. A secure tunnel is made up of a local SA and a remote SA, where both are negotiated in the context of an ISAKMP SA.
<b>secure wire</b>	Mapping of two logical interfaces that enables traffic forwarding between them without routing or switching lookup when a security policy supports it.
<b>security association</b>	SA. Set of security parameters that dictates how IPsec processes a packet. The SA defines what rules to use for authentication and encryption algorithms, key exchange mechanisms, and secure communications between two parties. A single secure tunnel uses multiple SAs. <i>See also</i> SA parameters.
<b>security device</b>	Hardware device that enables secure access to your network components and protects your network against malicious traffic.
<b>Security Director</b>	Junos Space application that enables administrators to quickly manage all phases of the security policy life cycle for stateful firewall, unified threat management (UTM), intrusion prevention system (IPS), application firewall (AppFW), VPN, and Network Address Translation (NAT) through a centralized Web-based interface.
<b>security level</b>	Measure of how seriously a triggering event affects device functions.

<b>Security Parameter Index</b>	SPI. In IPsec, a numeric identifier used with the destination address and security protocol to identify an SA. When IKE is used to establish an SA, the SPI is randomly derived. When manual configuration is used for an SA, the SPI must be entered as a parameter.
<b>security policy</b>	<ul style="list-style-type: none"> <li>• Set of rules defining access to your network, including permitted services, users, and time periods. Use security policies to control the shape of your network traffic as it passes through the firewall, or to log specific network events.</li> <li>• In IDP Series, a set of one or more rule bases that determine which traffic to inspect, what to look for, and what action to take if a rule matches.</li> </ul>
<b>security policy database</b>	SPD. Ordered list of policy entries that specifies what services are to be offered to IP datagrams and in what fashion. The SPD must discriminate between traffic that has IPsec protection and traffic that is allowed to bypass IPsec. This applies to the IPsec protection to be applied by a sender and that must be present at the receiver. The SPD requires distinct entries for inbound and outbound traffic. For any outbound or inbound datagram, three processing choices are possible: discard, bypass IPsec, or apply IPsec.
<b>security zone</b>	Collection of one or more network segments requiring the regulation of inbound and outbound traffic through the use of access policies.
<b>segmentation and reassembly</b>	SAR. Buffering used with ATM.
<b>self-signed SSL certificate</b>	An SSL certificate signed by its owner, rather than a certificate authority. These are useful for security testing but should not be used for live sites. You can issue a certificate signing request to convert your certificate to one signed by a certificate authority.
<b>Serial Advanced Technology Attachment</b>	SATA. A computer bus technology primarily for transfer of data to and from a hard disk.
<b>serial interface</b>	DTE/DCE interface for WAN links. <i>See also</i> DTE and DCE.
<b>Serial Line Address Resolution Protocol</b>	SLARP. Simple control protocol provided by the Cisco High-Level Data Link Control implementation that maintains serial link keepalives. <i>See also</i> Cisco HDLC.
<b>serial-attached SCSI</b>	SAS. Data transfer technology used to move data to and from computer storage devices such as hard drives and tape drives.
<b>server certificate</b>	An SSL certificate used to identify an SSL service (such as a website), and containing the public key necessary to set up the encrypted transaction.

<b>server cluster</b>	Group of connected computers that interact to operate as one computer. A cluster provides high performance and redundancy at a lower cost than a single computer with the same capabilities. When a failure occurs on one computer in a cluster, workload is redistributed to another computer in the cluster, avoiding downtime. Computers in the cluster work together to protect data, keep applications and services running after failure on one of the clustered computers, and maintain consistency of the cluster configuration over time.
<b>Server Manager</b>	Facilitates management of servers in a Contrail cluster.
<b>Server Manager-Lite</b>	SM-Lite. Streamlined version of Contrail Server Manager that does not include the reimage function. <i>See also</i> Server Manager.
<b>service access point</b>	SAP. Device that identifies routing protocols and provides the connection between the network interface card and the rest of the network.
<b>service activation engine</b>	SAE. Core manager of the Session and Resource Control (SRC) network. The SAE interacts with other systems, such as Juniper Networks routers, cable modem termination system (CMTS) devices, directories, Web application servers, and RADIUS servers, to retrieve and disseminate data in the SRC environment. The SAE authorizes, activates and deactivates, and tracks subscriber and service sessions. It also collects accounting information about subscribers and services.
<b>Service Deployment System software</b>	SDX software. Previous name for a customizable Juniper Networks product with which service providers can rapidly deploy IP services—such as video on demand (VoD), IP television, stateful firewalls, Layer 3 VPNs, and bandwidth on demand (BoD)—to hundreds of thousands of subscribers over a variety of broadband access technologies. <i>Now known as</i> Session and Resource Control (SRC) software.
<b>service level monitoring</b>	The ability to monitor back-end server response times, compare them to a conformance value, and react to changes, including dynamically adjusting the resources available.
<b>service line module</b>	SLM. Tunnel-service line module that does not pair with a corresponding I/O module that provides ingress and egress ports. Receives data from and transmits data to line modules that have ingress and egress ports.
<b>service name tag</b>	Entry in a PPPoE service name table that specifies a particular service that an access concentrator (AC), such as an E Series router, can provide to a PPPoE client. An empty service name tag of zero length indicates that any service is acceptable. <i>See also</i> PPPoE service name table.
<b>service object</b>	Service objects represent the IP traffic types for existing protocol standards. Security devices monitor and manage network traffic using these protocols. NSM includes predefined service objects for most standard services. You can also create custom service objects to represent services that are not included in the list of predefined service objects, or to represent a custom service running on your network.

<b>Service Profile Identifier</b>	SPID. Used only in Basic Rate Interface (BRI) implementations of ISDN. The SPID specifies the services available on the service provider switch and defines the feature set ordered when the ISDN service is provisioned.
<b>service protection</b>	The protection of your Internet services from attacks such as denial of service (DoS) and distributed denial of service (DDoS).
<b>service protection class</b>	A group of service protection settings you define. The class is held in the service protection catalog and can be applied to any virtual server.
<b>service provider</b>	See Internet service provider.
<b>service set identifier</b>	SSID. Unique identifier of a service set that constitutes the name of a wireless LAN. All access points and devices use the case-sensitive SSID text string to communicate over a particular wireless LAN. See also BSSID and ESSID.
<b>service VLAN</b>	S-VLAN, stacked VLAN, or switched VLAN. Provides a two-level VLAN tag structure, with a specific service instance VLAN identifier carried inside the S-TAG field. Creating an S-VLAN requires the use of a second encapsulation tag; the router performs de-encapsulation twice, once to get the S-VLAN tag and once to get the VLAN tag. This double tagging approach enables more than 16 million address possibilities, extending the VLAN ID space to more than 16 million VLANs. This meets and exceeds the scaling requirement for Ethernet B-RAS applications. Defined by IEEE 802.1ad, an S-VLAN often corresponds to a network aggregation device such as a DSLAM. Scheduling and shaping is often established for an S-VLAN to provide CoS for downstream devices with little buffering and simple schedulers. See also B-VID, C-VLAN.
<b>service-level agreement</b>	SLA. Formal agreement between a service provider and its customers (as part of a networking service contract) to provide a certain level of service (usually a level of performance).
<b>service-level agreement (SLA) measurement</b>	Process of monitoring the bandwidth, delay, delay variation (jitter), continuity, and availability of a service (E-Line or E-LAN). SLA measurement enables you to identify network problems before customers are impacted by network defects.
<b>services</b>	An application on a device. For example, Domain Name Service (DNS). Services based on protocols and ports used by an application, and when added to a policy, a configured service can be applied across all devices managed by Security Director. The protocols used to create a service include TCP, UDP, MS-RPC, SUN-RPC, ICMP, and ICMPv6. Security Director also includes predefined, commonly used services, and you cannot modify or delete them.
<b>Services and Routing Engine</b>	SRE. SRX mid-range services gateway module that provides processing power for security services, routing protocol processes, and other software processes that control the services gateway interfaces, some of the chassis components, system management, and user access to the device.

<b>services interface</b>	Interface that provides specific capabilities for manipulating traffic before it is delivered to its destination, for example, the adaptive services interface and the tunnel services interface. <i>See also</i> network interface.
<b>Serving GPRS Support Node</b>	SGSN. Device in the mobile network that requests PDP contexts with a GGSN.
<b>Session and Resource Control software</b>	SRC software. Customizable Juniper Networks product with which service providers can rapidly deploy IP services—such as video on demand (VoD), IP television, stateful firewalls, Layer 3 VPNs, and bandwidth on demand (BoD)—to hundreds of thousands of subscribers over a variety of broadband access technologies. <i>Formerly known as</i> Service Deployment System software.
<b>Session Announcement Protocol</b>	SAP. Used with multicast protocols to handle session conference announcements.
<b>session attribute object</b>	RSVP message object used to control the priority, preemption, affinity class, and local rerouting of the LSP.
<b>Session Description Protocol</b>	SDP. Used with multicast protocols to handle session conference announcements.
<b>Session Initiation Protocol</b>	SIP. Adaptive services application protocol option used for setting up sessions between endpoints on the Internet. Examples include telephony, fax, videoconferencing, file exchange, and person-to-person sessions.
<b>Session Layer</b>	Fifth level in the seven-layer OSI Reference Model for network protocol design, it controls the dialogues and connections (sessions) between computers. It establishes, manages, and terminates the connections between the local and remote application. The OSI Model made this layer responsible for "graceful close" of sessions, which is a property of TCP, and also for session checkpointing and recovery, which is not usually used in the Internet Protocol suite. Session Layers are commonly used in application environments that make use of remote procedure calls (RPCs). <i>Also known as</i> Layer 5.
<b>session persistence</b>	A process by which requests belonging to the same user session are always sent to the same node. Sessions can be identified by several methods including IP addresses, cookies, or SSL session IDs.
<b>Session Traversal Utilities for NAT</b>	STUN. Simple client/server protocol first defined in RFC 3489, <i>Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NATs)</i> , and later in RFC 5389, <i>Session Traversal Utilities for NAT</i> . A STUN client sends requests to a STUN server, which returns responses to the client. A STUN client is usually part of an application that requires a public IP address, port, or both. STUN clients can reside in an end system such as a PC or a network server, whereas STUN servers are usually attached to the Internet.
<b>set clause</b>	Part of a route map that defines how the attributes are modified for matching routes. The set conditions apply only to routes that pass all the match conditions (or a route map with no match conditions). When a route passes all the match conditions, all set conditions are applied.
<b>set-top box</b>	End host or device used to receive IPTV video streams.

<b>severity</b>	The designated threat level of an attack: critical, high, medium, low, or informational. Attack objects use the severity setting that matches the potential threat level of a detected attack.
<b>SFC</b>	switch-fabric chassis. The centralized switch-fabric chassis that connects multiple line-card chassis (LCCs) into a routing matrix. For example, the TX Matrix Plus router chassis is a switch-fabric chassis that connects to T1600 or T4000 line-card chassis. <i>See also</i> sfc.
<b>sfc</b>	Junos OS CLI term for switch-fabric chassis (SFC). Use lowercase term only to represent actual CLI commands or sample output. <i>See also</i> switch-fabric chassis.
<b>SFM</b>	<ul style="list-style-type: none"> <li>switch fabric module. A module that works with the SFP module to create a shared memory fabric for the E320 router.</li> <li>Switching and Forwarding Module. On an M160 router, a component of the Packet Forwarding Engine that provides route lookup, filtering, and switching to FPCs.</li> </ul>
<b>SFP transceiver</b>	small form-factor pluggable transceiver. Transceiver that provides support for fiber-optic or copper cables. SFP transceivers are hot-insertable and hot-removable. <i>See also</i> XFP transceiver.
<b>SFP+ transceiver</b>	small form-factor pluggable plus transceiver. Enhanced SFP transceiver that provides support for data rates up to 10 Gbps for fiber-optic or copper interfaces. SFP+ transceivers are hot-insertable and hot-removable.
<b>SFTP</b>	Secure File Transfer Protocol. A network protocol providing file access, transfer, and management securely over a data stream. The SFTP pseudo-URL format is: <b>sftp:// username@hostname: path[/filename]</b> . The path is an absolute path; paths relative to the user's home directory are not currently supported. You must have an FTP server installed in order to send FTP or SFTP files to your machine. SFTP uses SSH. Used with Media Flow Controller. <i>Also known as</i> SSH File Transfer Protocol.
<b>SGSN</b>	Serving GPRS Support Node. Device in the mobile network that requests PDP contexts with a GGSN.
<b>SHA</b>	Secure Hash Algorithm. One of the cryptographic hashing functions used by FIPS, it is a standard published by NIST. <i>See also</i> hashing, SHA-1.
<b>SHA-1</b>	Secure Hash Algorithm 1. Secure hash algorithm standard defined in FIPS PUB 180-1 (SHA-1). Developed by the National Institute of Standards and Technology (NIST), SHA-1 produces a 160-bit hash for message authentication. Longer-hash variants include SHA-224, SHA-256, SHA-384, and SHA-512 (sometimes grouped under the name "SHA-2"). SHA-1 is more secure than MD5. <i>See also</i> hashing, MD5.
<b>sham link</b>	Unnumbered point-to-point intra-area link advertised by a type 1 link-state advertisement (LSA).
<b>shaping rate</b>	In class of service, controls the maximum rate of traffic transmitted on an interface. <i>See also</i> traffic shaping.

<b>shared IP interface</b>	Allocation of separate pools of shared resources to subsets of logical interfaces belonging to the same physical port. One of a group of IP interfaces that are created over the same Layer 2 logical interface, which enables multiple IP interfaces to share the same logical resources.
<b>shared local address pool</b>	Group of available addresses that enables a local address server to distribute addresses allocated from DHCP local server address pools within the same virtual router. The addresses are configured and managed within DHCP; therefore, thresholds are not configured on the shared pool, but are instead managed by the referenced DHCP local server pool. A shared local address pool references one DHCP address pool, and can then obtain addresses from the referenced DHCP address pool and from any DHCP address pools that are linked to the referenced DHCP address pool.
<b>shared object</b>	Object that can be shared across domains.
<b>shared scheduling and shaping</b>	Allocation of separate pools of shared resources to subsets of logical interfaces belonging to the same physical port.
<b>shared shaper constituent</b>	Multicast forwarding tree established from the rendezvous point (RP) to the last-hop router for a particular group address.
<b>shared shaping</b>	Mechanism that enables dynamic sharing of logical interface bandwidth for traffic that is queued through separate scheduler hierarchies. <i>Also known as</i> shared rate shaping. <i>See also</i> compound shared shaping, simple shared shaping.
<b>shared tunnel-server module</b>	Module that supports dynamic tunnel-server ports. It provides both tunnel services and regular access services.
<b>SHDSL</b>	symmetric high-speed digital subscriber line. Standardized multirate symmetric DSL that transports rate-adaptive symmetrical data across a single copper pair at data rates from 192 Kbps to 2.3 Mbps, or from 384 Kbps to 4.6 Mbps over two pairs, covering applications served by HDSL, SDSL, T1, E1, and services beyond E1. SHDSL conforms to the following recommendations: ITU G.991.2 G.SHDSL, ETSI TS 101-524 SDSL, and ANSI T1E1.4/2001-174 G.SHDSL. <i>See also</i> G.SHDSL.
<b>SHDSL transceiver unit—central office</b>	STU-C, symmetric high-speed digital subscriber line (SHDSL) transceiver unit—central office. Equipment at the telephone company central office that provides SHDSL connections to remote user terminals.
<b>SHDSL transceiver unit—remote</b>	STU-R, symmetric high-speed digital subscriber line (SHDSL) transceiver unit—remote. Equipment at the customer premises that provides SHDSL connections to remote user terminals.
<b>shim header</b>	Location of the MPLS header in a data packet. Junos OS always places (shims) the header between the existing Layer 2 and Layer 3 headers.
<b>short frame</b>	Contains less than 64 bytes of data.
<b>short message service</b>	SMS. GSM service that enables short text messages to be sent to and from mobile telephones.



<b>short pipe model</b>	Tunneling model whereby any traffic conditioning (in a pure JunosE environment, a change in traffic class/color combination) that is applied when traffic goes through the tunnel has no effect on the EXP bits coding in the inner header. That is, when traffic exits an LSP (when a label is popped) or when traffic enters an LSP, the inner header's EXP bits coding is not changed. The pipe and short-pipe models differ in the header that the tunnel egress uses when it determines the PHB of an incoming packet. With the short-pipe model, the tunnel egress uses an inner header used for forwarding. With the pipe model, the outermost label is always used. Because of this, you cannot use PHP with the pipe model. <i>Also known as</i> pipe (and short-pipe) model. <i>See also</i> uniform model.
<b>shortcut</b>	IPsec security association (SA) or tunnel established dynamically between a pair of peers that a shortcut suggester initiates. <i>See also</i> shortcut exchange and shortcut suggester.
<b>shortcut exchange</b>	IKEv2 exchange between the shortcut suggester and partners that carries all data needed to establish the shortcut. <i>See also</i> shortcut, shortcut partners, and shortcut suggester.
<b>shortcut partners</b>	Pair of peers that receive a shortcut exchange to establish a shortcut between them. <i>See also</i> shortcut exchange.
<b>shortcut suggester</b>	VPN peer that initiates a shortcut exchange. <i>See also</i> shortcut and shortcut exchange.
<b>shortest path first</b>	SPF. Algorithm used by IS-IS and OSPF to make routing decisions based on the state of network links. <i>Also known as</i> the Dijkstra algorithm.
<b>shortest-path tree</b>	SPT. Algorithm that builds a network topology that attempts to minimize the path from one router (the root) to other routers in a routing area.
<b>SIB</b>	Switch Interface Board. On T Series Core Routers and PTX Series Packet Transport Routers, component that provides the path in the switching plane (or the fabric plane) for packets to travel from a source Packet Forwarding Engine to a destination Packet Forwarding Engine.
<b>SIBR</b>	Source Interface-Based Routing. Method of allowing the security device to forward traffic based on the source interface (the interface on which the data packet arrives on the security device).
<b>signaled path</b>	In traffic engineering, an explicit path; that is, a path determined using RSVP signaling. The Explicit Route Object carried in the packets contains the explicit path information. <i>Also known as</i> explicit path.
<b>signaled secure IP interface</b>	Negotiates an SA on demand with the remote security gateway. The remote security gateway must also support SA negotiation; otherwise, the gateway drops traffic. The router keeps statistics for dropped traffic. <i>See also</i> manual secure IP interfaces.
<b>signaling message</b>	Any GTP-Protocol Data Unit (PDU) except the G-PDU. GTP signaling messages are exchanged between GSN pairs in a path to transfer GSN capability information and to create, update, and delete GTP tunnels.
<b>Signaling System 7</b>	SS7. Protocol used in telecommunications for delivering calls and services.

<b>SIM</b>	subscriber identity module. Detachable smart card on the GSM HSDPA 3G wireless modem and other mobile devices that stores configuration and subscriber information for the device.
<b>simple authentication</b>	Authentication method in IS-IS that uses a text password (authentication key) that can be entered in encrypted or unencrypted form. The receiving router uses this authentication key to verify the packet.
<b>Simple Certificate Enrollment Protocol</b>	SCEP. Protocol for digital certificates that supports certificate authority (CA) and registration authority (RA) public key distribution, certificate enrollment, certificate revocation, certificate queries, and certificate revocation list (CRL) queries.
<b>simple explicit shared shaper</b>	One of four types of shared shapers, in which the weight and priority attributes of the shared-shaping-constituent command are ignored, because the simple shared shaper does not allocate bandwidth among constituents. Instead, it controls just the best-effort queue or node. <i>See also</i> compound explicit shared shaper, compound implicit shared shaper, simple implicit shared shaper.
<b>simple implicit shared shaper</b>	One of four types of shared shapers, in which constituents are best-effort nodes or queues, and all nodes and queues in named traffic-class groups. <i>See also</i> compound explicit shared shaper, compound implicit shared shaper, simple explicit shared shaper.
<b>Simple Mail Transfer Protocol</b>	SMTP. Internet standard for e-mail transmission across IP networks. <i>See also</i> Simple Mail Transfer Protocol Secure.
<b>Simple Mail Transfer Protocol Secure</b>	SMTPS. Method for securing SMTP with Transport Layer security. It provides authentication of the communication partners, as well as data integrity and confidentiality. <i>See also</i> Simple Mail Transfer Protocol.
<b>Simple Network Management Protocol</b>	SNMP. Protocol governs network management and the monitoring of network devices and their functions.
<b>Simple Network Time Protocol</b>	SNTP. Adaptation of the Network Time Protocol (NTP) used to synchronize computer clocks in the Internet. SNTP can be used when the ultimate performance of the full NTP implementation described in RFC 1305 is not needed or justified. When operating with current and previous NTP and SNTP versions, SNTP version 4 involves a clarification of certain design features of NTP that allow operation in a simple, stateless remote-procedure call (RPC) mode with accuracy and reliability expectations similar to the UDP/TIME protocol described in RFC 868, <i>Time Protocol</i> .
<b>Simple Object Access Protocol</b>	SOAP. An XML-based standard for Web services messages.
<b>simple shared shaping</b>	Software-assisted mechanism that measures the rate of active constituents, and can shape the best-effort node or queue associated with a logical interface to a shared rate. <i>See also</i> compound shared shaping, shared shaping.
<b>simplex interface</b>	Interface that treats packets it receives from itself as the result of a software loopback process. The interface does not consider these packets when determining whether the interface is functional.

<b>single touchpoint-based GNF orchestration</b>	YANG-based method of managing the life cycle of guest network functions (GNFs), using the base system (BSYS) as the single touchpoint. In this method, a software-defined networking (SDN) controller (for example, OpenDaylight or ODL) communicates only with the BSYS to orchestrate the GNFs.
<b>single-carrier frequency-division multiple access</b>	SC-FDMA. Multiple access scheme that deals with the assignment of multiple users to a shared communication resource. SC-FDMA can be interpreted as a linearly precoded orthogonal frequency-division multiple access (OFDMA) scheme. In SC-FDMA, multiple access among users is enabled by assigning different sets of nonoverlapping subcarriers to different users. SC-FDMA generates a single-carrier transmit signal, whereas OFDMA is a multicarrier transmission scheme. <i>See also</i> orthogonal frequency-division multiple access (OFDMA).
<b>single-mode fiber</b>	Optical fiber designed for transmission of a single ray or mode of light as a carrier and used for long-distance signal transmission. For short distances, multimode fiber is used. <i>See also</i> MMF.
<b>single-root I/O virtualization</b>	SR-IOV. Standard in which an I/O device, such as a network interface card (NIC), presents multiple virtual instances of itself to a hypervisor or an OS, enabling sharing of one physical I/O device across multiple virtual machines (VMs). <i>See also</i> hypervisor, I/O virtualization, virtual machine.
<b>SIP</b>	Session Initiation Protocol. Adaptive services application protocol option used for setting up sessions between endpoints on the Internet. Examples include telephony, fax, videoconferencing, file exchange, and person-to-person sessions.
<b>site</b>	<ul style="list-style-type: none"> <li>• (Security Director) Grouping of network devices, including firewalls and switches, that contribute to threat prevention.</li> <li>• (Contrail Service Orchestration) Location where customers access virtualized network functions (VNFs) from a service provider's cloud through a Layer 3 VPN.</li> </ul>
<b>Sky Advanced Threat Prevention</b>	Sky ATP. Cloud-based service that provides complete advanced malware protection. Integrated with SRX Series Services Gateways, Sky ATP delivers a dynamic antimalware solution that can adapt to an ever-changing threat landscape.
<b>Sky ATP</b>	Sky Advanced Threat Prevention. Cloud-based service that provides complete advanced malware protection. Integrated with SRX Series Services Gateways, Sky ATP delivers a dynamic antimalware solution that can adapt to an ever-changing threat landscape.
<b>SLA</b>	service-level agreement. Formal agreement between a service provider and its customers (as part of a networking service contract) to provide a certain level of service, usually a level of performance.
<b>SLA measurement</b>	Process of monitoring the bandwidth, delay, delay variation (jitter), continuity, and availability of a service (E-Line or E-LAN). SLA measurement enables you to identify network problems before customers are impacted by network defects.
<b>SLARP</b>	Serial Line Address Resolution Protocol. Simple control protocol provided by the Cisco High-Level Data Link Control implementation that maintains serial link keepalives. <i>See also</i> Cisco HDLC.

<b>slave clock</b>	See client clock.
<b>slave router</b>	See backup router.
<b>SLAX</b>	Stylesheet Language Alternative Syntax. Syntax overlay of the Extensible Stylesheet Language Transformations (XSLT) programming language that follows the style of C and PERL and simplifies on-box script programming on devices running Junos OS.
<b>sleep</b>	Feature of SSH that prevents a user who has exceeded the authentication retry limit from connecting from the same host within the specified period.
<b>SLM</b>	service line module. Tunnel-service line module that does not pair with a corresponding I/O module that provides ingress and egress ports. Receives data from and transmits data to line modules that have ingress and egress ports.
<b>slot group</b>	Group of adjacent chassis (module) slots. The number of slots and number of slots per group depend on the system.
<b>SLS</b>	standard local survivability. Configurable software feature that enables a TGM550 to provide limited MGC functionality when no link is available to a registered MGC.
<b>SM-Lite</b>	Server Manager-Lite. Streamlined version of Contrail Server Manager that does not include the reimage function. <i>See also</i> Server Manager.
<b>small computer system interface</b>	SCSI. A standard interface and command set for transferring data between devices over a computer bus.
<b>small form-factor pluggable plus transceiver</b>	SFP+ transceiver. Enhanced SFP transceiver that provides support for data rates up to 10 Gbps for fiber-optic or copper interfaces. SFP+ transceivers are hot-insertable and hot-removable.
<b>small form-factor pluggable transceiver</b>	SFP transceiver. Transceiver that provides support for fiber-optic or copper cables. SFP transceivers are hot-insertable and hot-removable. <i>See also</i> XFP transceiver.
<b>small outline dual inline memory module</b>	SODIMM. Memory module that is approximately half the size of a standard DIMM.
<b>Smart Groups</b>	The vGW Virtual Gateway feature that provides automated VM security for newly created or replicated VMs. If Smart Groups are configured, when a VM is created, the vGW Virtual Gateway assigns it an administrator-defined default policy. The Smart Groups feature automates security policy compliancy checks to ensure security is maintained, and that any risks are immediately mitigated. The Smart Groups user interface allows for easy creation of logical expressions to determine group membership. Any combination of attributes can be used to define the criteria needed to qualify for group membership and the associated policy from that group. All VM internal, external, and security attributes are used as inputs to the Smart Groups expression builder.

<b>smart keepalive</b>	Mode whereby, when the keepalive timer expires, the interface first verifies whether any frames were received from the peer in the prior keepalive timeout interval. If so, the interface does not send an LCP echo request (keepalive). Keepalive packets are sent only if the peer is silent (if no traffic was received from the peer during the previous keepalive timeout interval). <i>Also known as</i> high-density keepalive. <i>See also</i> low-density keepalive mode.
<b>SMDS</b>	Switched Multimegabit Data Service. Connectionless, wide-area networking service designed for LAN interconnection. An SMDS network is composed of a series of SMDS switches inside a service provider's network, a series of channel service units/data service units (CSUs/DSUs) that connect subscribers to the network, and routers and gateways to connect to each CSU/DSU.
<b>SMS</b>	short message service. GSM service that enables short text messages to be sent to and from mobile telephones.
<b>SMTP</b>	Simple Mail Transfer Protocol. Internet standard for e-mail transmission across IP networks. <i>See also</i> SMTPS.
<b>SMTPS</b>	Simple Mail Transfer Protocol Secure. Method for securing SMTP with Transport Layer security. It provides authentication of the communication partners, as well as data integrity and confidentiality. <i>See also</i> SMTP.
<b>smurf attack</b>	Type of denial-of-service attack that sends ICMP pings so large or so numerous that they overload a system with echo requests, causing the system to expend all its resources responding until it can no longer process valid network traffic. <i>Also known as</i> ping flood, ICMP flood.
<b>SNA</b>	System Network Architecture. IBM proprietary networking architecture consisting of a protocol stack that is used primarily in banks and other financial transaction networks.
<b>SNMP</b>	Simple Network Management Protocol. Protocol governs network management and the monitoring of network devices and their functions.
<b>SNMP agent</b>	Managed device, such as a router, that collects and stores management information. The SNMP agent (SNMPv3) recognizes up to 32 usernames that can have one of the following security levels: no authentication and no privacy, authentication only, authentication and privacy.
<b>SNMP client</b>	Device that executes management applications that monitor and control network elements. Sometimes called a network management station (NMS) or simply a manager. The SNMP client runs on a network host and communicates with one or more SNMP servers on other network devices, such as routers, to configure and monitor the operation of those network devices.
<b>SNMP community</b>	Logical group of SNMP-managed devices and clients in the same administrative domain.

<b>SNMP community name</b>	Name that acts as a password and is used to authenticate messages sent between an SNMP client and a router containing an SNMP server. The community name is sent in every packet between the client and the server.
<b>SNMP event</b>	Condition or state change that might cause the generation of a trap message.
<b>SNMP group</b>	Set of users with the same access privileges to the router. Three predefined groups are available: admin, public, and private. Applies to SNMPv3.
<b>SNMP managed object</b>	Characteristic of something that can be managed, such as a list of currently active TCP circuits in a device.
<b>SNMP MIB</b>	Tree-structured schema that specifies the format of managed data for a device function. The goal of a MIB is to provide a common and consistent management representation for that function across networking devices. E Series routers support both standard and enterprise SNMP MIBs. <i>See also</i> enterprise MIB, standard MIB.
<b>SNMP notification</b>	Message that indicates a status change (equivalent to a trap in SNMPv1). Applies to SNMPv3.
<b>SNMP privilege level</b>	MIB access level that allows increasing levels of privilege: <ul style="list-style-type: none"> <li>• Read-only—Read-only access to the entire MIB except for SNMP configuration objects.</li> <li>• Read-write—Read-write access to the entire MIB except for SNMP configuration objects.</li> <li>• Admin—Read-write access to the entire MIB.</li> </ul>
<b>SNMP secure packet mirroring trap</b>	Type of SNMP trap that enables the administrator to capture and report packet mirroring information to an external device. The secure information can then be viewed on the remote device. <i>See also</i> packet mirroring.
<b>SNMP server</b>	Managed device, such as a router, that collects and stores management information. The SNMP server operates on a network device, such as a router, a switch, or a workstation. It responds to SNMP requests received from SNMP clients and generates trap messages to alert the clients about notable state changes in the network device. <i>See also</i> SNMP client.
<b>SNMP Server Event Manager</b>	Application that works in conjunction with the Event MIB (RFC 2981) to allow many management functions such as fault detection, configuration management, accounting management, and performance management. These functions are traditionally performed by the network management station (NMS). However, by using the SNMP Server Event Manager, you can distribute some of these functions to E Series routers and automate them. <i>See also</i> Event MIB.
<b>SNMP trap</b>	Message sent by an SNMP server to a client to indicate the occurrence of a significant event, such as a specifically defined condition or a threshold that was reached. Managed devices use traps to asynchronously report certain events to clients. <i>See also</i> SNMP server.

<b>SNMP trap severity level</b>	Each SNMP trap message is assigned a severity level. From most severe to least severe, the trap severity levels are: Emergency, Alert, Critical, Warning, and Notice. <i>See also</i> SNMP server.
<b>SNMP user</b>	Person who accesses the router. The router can provide authentication and privacy for the user through SNMPv3. Each user is associated with a group. Applies to SNMPv3.
<b>SNMP view</b>	<p>Management information that is available to the user: read, write, or notification. Three predefined views are available for each group:</p> <ul style="list-style-type: none"> <li>• Everything—Includes all MIBs associated with the router.</li> <li>• User—Includes all MIBs associated with the router, except standard and enterprise MIBs used to configure SNMP operation.</li> <li>• Nothing—Excludes all MIBs.</li> </ul>
<b>SNTP</b>	Simple Network Time Protocol. Adaptation of the Network Time Protocol (NTP) used to synchronize computer clocks in the Internet. SNTP can be used when the ultimate performance of the full NTP implementation described in RFC 1305 is not needed or justified. When operating with current and previous NTP and SNTP versions, SNTP version 4 involves a clarification of certain design features of NTP that allow operation in a simple, stateless remote-procedure call (RPC) mode with accuracy and reliability expectations similar to the UDP/TIME protocol described in RFC 868, <i>Time Protocol</i> .
<b>SOAP</b>	Simple Object Access Protocol. An XML-based standard for Web services messages.
<b>SOC</b>	System On Chip. Integration of all required components of a device into a single integrated chip.
<b>SOCKet Secure</b>	SOCKS. Internet protocol that manages the security of data packets traveling between two network interfaces.
<b>SOCKS</b>	SOCKet Secure. Internet protocol that manages the security of data packets traveling between two network interfaces.
<b>SODIMM</b>	small outline dual inline memory module. Memory module that is approximately half the size of a standard DIMM.
<b>soft reconfiguration</b>	Method used to reapply inbound policies to stored BGP routes without clearing the BGP sessions and therefore disrupting the network.
<b>soft state</b>	In RSVP, control state in hosts and routers that expires if not refreshed within a specified amount of time.
<b>Software as a Service</b>	SaaS. Application software and databases that are leased by a cloud provider to customers as needed. The cloud provider provides and runs the data center on which the application software runs. <i>See also</i> cloud computing, Infrastructure as a Service, Network as a Service, Platform as a Service.

<b>software-defined networking</b>	SDN. Approach to computer networking that uses methods of network abstraction, such as virtualization, to simplify and scale network components and uses software to define and manage network components. SDN separates the data plane, which forwards traffic, from the control plane, which manages traffic flow, and enables users to program network layers. SDN is often used with Network Functions Virtualization (NFV) to allow agile placement of networking services when and where they are needed. By enabling this level of programmability, SDN enables users to optimize their network resources, increase network agility, provide service innovation, accelerate service time-to-market, extract business intelligence, and ultimately enable dynamic, service-driven virtual networks. <i>See also</i> NFV.
<b>software-defined secure network</b>	SDSN. End-to-end network visibility solution that secures the entire network, physical and virtual. SDSN leverages cloud economics to find and stop threats faster than perimeter firewalls. It protects dynamic networks from attacks and creates a single, holistic defense domain that provides end-to-end network visibility. Using threat detection and policy enforcement, an SDSN solution automates and centrally manages security in a multivendor environment.
<b>software-defined WAN event</b>	SD-WAN event. Event that is triggered when the service-level agreement (SLA) requirements for a site are not met on its network-designated WAN link. The event enables the network to switch WAN links to meet the SLA requirements.
<b>software-defined WAN policy</b>	SD-WAN policy. Traffic management policy that helps ensure optimum utilization of the WAN links and efficient distribution of traffic. SD-WAN policy rules use service-level agreement (SLA) profiles for traffic management.
<b>solid-state drive</b>	SSD. Storage device that uses solid-state memory to store persistent data.
<b>SONET</b>	Synchronous Optical Network. High-speed (up to 2.5 Gbps) synchronous network specification developed by Bellcore and designed to run on optical fiber. STS1 is the basic building block of SONET. Approved as an international standard in 1988. <i>See also</i> SDH.
<b>SONET Clock Generator</b>	SCG. On a T640 routing node, provides the Stratum 3 clock signal for the SONET/SDH interfaces. Also provides external clock inputs.
<b>source class usage</b>	SCU. Means of tracking traffic originating from specific prefixes on the provider core router and destined for specific prefixes on the customer edge router, based on the IP source and destination addresses.
<b>Source Interface-Based Routing</b>	SIBR. Method of allowing the security device to forward traffic based on the source interface (the interface on which the data packet arrives on the security device).
<b>Source Packet Routing in Networking</b>	SPRING. Control plane architecture that enables an ingress router to steer a packet through a specific set of nodes and links in the network without relying on the intermediate nodes in the network to determine the actual path it should take. In this context, the term source means “the point at which the explicit route is imposed.” <i>Also known as</i> segment routing. <i>See also</i> MPLS, SPRING-TE.



<b>Source Packet Routing in Networking–Traffic Engineering</b>	SPRING-TE. Source Packet Routing in Networking (SPRING) with traffic engineering extensions, as defined in RFC 7855, that allow SPRING to establish label-switched paths (LSPs) in MPLS networks. <i>See also</i> MPLS, SPRING.
<b>source route</b>	An option in the IP header. An attacker can use the source route option to enter a network with a false IP address and have data sent back to the attacker's real address.
<b>source service access point</b>	SSAP. Device that identifies the origin of an LPDU on a DLSw network.
<b>source-based tree</b>	Multicast forwarding tree established from the source of traffic to all interested receivers for a particular group address. It is often used in a dense-mode forwarding environment.
<b>source-specific multicast</b>	SSM. Service that allows a client to receive multicast traffic directly from the source. Typically, SSM uses a subset of the PIM sparse mode functionality along with a subset of IGMPv3 to create a shortest-path tree between the client and the source, but it builds the shortest-path tree without the help of a rendezvous point.
<b>southbound API</b>	API through which a software component communicates with the software component that is one level below it in a hierarchical architecture. <i>See also</i> northbound API.
<b>southbound interface</b>	Interface through which a component communicates with the component that is one level below it in a hierarchical architecture of computers or network components. <i>See also</i> northbound interface.
<b>Space as system of record</b>	SSOR. When you choose SSOR mode, the out-of-band commit operations on the devices are not synchronized with the device configuration stored in the Junos Space Network Management Platform database. You must accept or reject the out-of-band commits from the Junos Space user interface to synchronize the out-of-band commits with the Junos Space Network Management Platform database. Configurations saved in the Junos Space Network Management Platform database in SSOR mode are preferred for network devices because these configurations are not altered by out-of-band commit operations on the devices.
<b>Spanning Tree Protocol</b>	STP. Defined in the IEEE standard 802.1D, the Spanning Tree Protocol is an OSI Layer 2 protocol that ensures a loop-free topology for any bridged LAN. This protocol creates a spanning tree within a mesh network of connected Layer 2 bridges (typically Ethernet switches), and disables the links that are not part of that tree, leaving a single active path between any two network nodes.
<b>sparse mode</b>	Method of operating a multicast domain where sources of traffic and interested receivers meet at a central rendezvous point. A sparse mode network assumes that there are very few receivers for each group address. Routers running sparse mode protocols forward multicast traffic only when explicitly requested to do so. <i>See also</i> dense mode.

<b>SPD</b>	security policy database. Ordered list of policy entries that specifies what services are to be offered to IP datagrams and in what fashion. The SPD must discriminate between traffic that has IPsec protection and traffic that is allowed to bypass IPsec. This applies to the IPsec protection to be applied by a sender and that must be present at the receiver. The SPD requires distinct entries for inbound and outbound traffic. For any outbound or inbound datagram, three processing choices are possible: discard, bypass IPsec, or apply IPsec.
<b>SPF</b>	shortest path first. Algorithm used by IS-IS and OSPF to make routing decisions based on the state of network links. <i>Also known as</i> the Dijkstra algorithm.
<b>SPI</b>	Security Parameter Index. In IPsec, a numeric identifier used with the destination address and security protocol to identify an SA. When IKE is used to establish an SA, the SPI is randomly derived. When manual configuration is used for an SA, the SPI must be entered as a parameter.
<b>SPID</b>	Service Profile Identifier. Used only in Basic Rate Interface (BRI) implementations of ISDN. The SPID specifies the services available on the service provider switch and defines the feature set ordered when the ISDN service is provisioned.
<b>split horizon</b>	Method used in distance-vector networks to avoid routing loops. When enabled, each router does not advertise routes back to the neighbor from which the information originated.
<b>spoof checking</b>	<p>MPLS forwarding table behavior, whereby MPLS determines that an MPLS packet received from an upstream neighbor does not contain an MPLS label that was advertised to that neighbor. The packet is dropped. MPLS supports the following types of spoof checking:</p> <ul style="list-style-type: none"> <li>• Router spoof checking—MPLS packets are accepted only if they arrive on an MPLS major interface that is in the same virtual router as the MPLS forwarding table.</li> <li>• Interface spoof checking—MPLS packets are accepted only if they arrive on the particular MPLS major interface identified in the spoof check field.</li> </ul>
<b>SPQ</b>	strict-priority queuing. Dequeuing method that provides a special queue that is serviced until it is empty. The traffic sent to this queue tends to maintain a lower latency and more consistent latency numbers than traffic sent to other queues. <i>See also</i> APQ.
<b>SPRING</b>	Source Packet Routing in Networking. Control plane architecture that enables an ingress router to steer a packet through a specific set of nodes and links in the network without relying on the intermediate nodes in the network to determine the actual path it should take. In this context, the term source means “the point at which the explicit route is imposed.” <i>Also known as</i> segment routing. <i>See also</i> MPLS, SPRING-TE.
<b>SPRING-TE</b>	Source Packet Routing in Networking–Traffic Engineering. Source Packet Routing in Networking (SPRING) with traffic engineering extensions, as defined in RFC 7855, that allow SPRING to establish label-switched paths (LSPs) in MPLS networks. <i>See also</i> MPLS, SPRING.

<b>SPT</b>	shortest-path tree. Algorithm that builds a network topology that attempts to minimize the path from one router (the root) to other routers in a routing area.
<b>SQL</b>	structured query language. International standard language used to create, modify, and select data from relational databases.
<b>SR-IOV</b>	single-root I/O virtualization. Standard in which an I/O device, such as a network interface card (NIC), presents multiple virtual instances of itself to a hypervisor or an OS, enabling sharing of one physical I/O device across multiple virtual machines (VMs). <i>See also</i> hypervisor, I/O virtualization, virtual machine.
<b>src port</b>	TCP or UDP port for the source IP address in a packet.
<b>SRC software</b>	Session and Resource Control software. Customizable Juniper Networks product with which service providers can rapidly deploy IP services—such as video on demand (VoD), IP television, stateful firewalls, Layer 3 VPNs, and bandwidth on demand (BoD)—to hundreds of thousands of subscribers over a variety of broadband access technologies. <i>Formerly called</i> SDX software.
<b>SRE</b>	Services and Routing Engine. SRX mid-range services gateway module that provides processing power for security services, routing protocol processes, and other software processes that control the services gateway interfaces, some of the chassis components, system management, and user access to the device.
<b>SRP</b>	switch route processor. ERX router module that performs system management, routing table calculations and maintenance, forwarding table computations, statistics processing, configuration storage, and other control plane functions.
<b>SS7</b>	Signaling System 7. Protocol used in telecommunications for delivering calls and services.
<b>SSAP</b>	source service access point. Device that identifies the origin of an LPDU on a DLSw network.
<b>SSB</b>	System and Switch Board. On an M20 router, a Packet Forwarding Engine component that performs route lookups and component monitoring and monitors FPC operation.
<b>SSD</b>	solid-state drive. Storage device that uses solid-state memory to store persistent data.
<b>SSH</b>	Secure Shell. Protocol that uses strong authentication and encryption for remote access across a nonsecure network. SSH provides remote login, remote program execution, file copy, and other functions. In a UNIX environment, SSH is intended as a secure replacement for rlogin, rsh, and rcp.
<b>SSH timeout</b>	Maximum time allowed for a user to be authenticated, starting from the receipt of the first SSH protocol packet.
<b>SSID</b>	service set identifier. Unique identifier of a service set that constitutes the name of a wireless LAN. All access points and devices use the case-sensitive SSID text string to communicate over a particular wireless LAN. <i>See also</i> BSSID and ESSID.

<b>SSL</b>	Secure Sockets Layer. Protocol that encrypts security information using public-private key technology, which requires a paired private key and authentication certificate, before transmitting data across a network.
<b>SSL certificate</b>	Secure electronic identifier conforming to the X.509 standard, definitively identifying an individual, system, company, or organization. In addition to identification data, the digital certificate contains a serial number, a copy of the certificate holder's public key, the identity and digital signature of the issuing certificate authority (CA), and an expiration date.
<b>SSM</b>	source-specific multicast. Service that allows a client to receive multicast traffic directly from the source. Typically, SSM uses a subset of the PIM sparse mode functionality along with a subset of IGMPv3 to create a shortest-path tree between the client and the source, but it builds the shortest-path tree without the help of a rendezvous point.
<b>SSOR</b>	Space as system of record. When you choose SSOR mode, the out-of-band commit operations on the devices are not synchronized with the device configuration stored in the Junos Space Network Management Platform database. You must accept or reject the out-of-band commits from the Junos Space user interface to synchronize the out-of-band commits with the Junos Space Network Management Platform database. Configurations saved in the Junos Space Network Management Platform database in SSOR mode are preferred for network devices because these configurations are not altered by out-of-band commit operations on the devices.
<b>SSP</b>	<ul style="list-style-type: none"> <li>Secure Server Protocol. Modified version of TCP that is more reliable than ordinary TCP, requires less CPU and memory resources from servers, and reduces the number of acknowledgement packets on the network. SSP uses AES encryption and SH1 authentication for all connections. NSM uses SSP for communication between the UI, the GUI Server, and the Device Server.</li> <li>Switch-to-Switch Protocol. Protocol implemented between two DLSw routers that establishes connections, locates resources, forwards data, and handles error recovery and flow control.</li> </ul>
<b>SSRAM</b>	synchronous static random access memory. Used for storing routing tables, packet pointers, and other data such as route lookups, policer counters, and other statistics to which the microprocessor needs quick access.
<b>stacked virtual local area network</b>	S-VLAN, stacked VLAN, service VLAN, or switched VLAN. Provides a two-level VLAN tag structure, with a specific service instance VLAN identifier carried inside the S-TAG field. Creating an S-VLAN requires the use of a second encapsulation tag; the router performs de-encapsulation twice, once to get the S-VLAN tag and once to get the VLAN tag. This double tagging approach enables more than 16 million address possibilities, extending the VLAN ID space to more than 16 million VLANs. This meets and exceeds the scaling requirement for Ethernet B-RAS applications. Defined by IEEE 802.1ad, an S-VLAN often corresponds to a network aggregation device such as a DSLAM. Scheduling and shaping is often established for an S-VLAN to provide CoS for downstream devices with little buffering and simple schedulers. <i>See also</i> B-VID, C-VLAN.

<b>stacked VLAN</b>	S-VLAN, service VLAN, or switched VLAN. Provides a two-level VLAN tag structure, with a specific service instance VLAN identifier carried inside the S-TAG field. Creating an S-VLAN requires the use of a second encapsulation tag; the router performs de-encapsulation twice, once to get the S-VLAN tag and once to get the VLAN tag. This double tagging approach enables more than 16 million address possibilities, extending the VLAN ID space to more than 16 million VLANs. This meets and exceeds the scaling requirement for Ethernet B-RAS applications. Defined by IEEE 802.1ad, an S-VLAN often corresponds to a network aggregation device such as a DSLAM. Scheduling and shaping is often established for an S-VLAN to provide CoS for downstream devices with little buffering and simple schedulers. <i>See also</i> B-VID, C-VLAN.
<b>standalone mode</b>	DHCP standalone mode. Mode in which the DHCP local server operates as a basic DHCP server. Clients are not authenticated by default; however, you can optionally configure the DHCP local server to use AAA authentication for the incoming clients.
<b>standard AAL5 mode</b>	Transport mode that allows multiple applications to tunnel the protocol data units of their Layer 2 protocols over an ATM virtual circuit. You use this transport mode to tunnel IP packets over an ATM backbone. <i>See also</i> AAL5 mode, cell-relay mode, Layer 2 circuits, trunk mode.
<b>standard local survivability</b>	SLS. Configurable software feature that enables a TGM550 to provide limited MGC functionality when no link is available to a registered MGC.
<b>standard MIB</b>	MIB defined by a body such as the IETF that fosters consistency of management data representation across many vendors' networking products.
<b>starvation</b>	Problem that occurs when lower-priority traffic, such as data and protocol packets, is locked out (starved) because a higher-priority queue uses all of the available transmission bandwidth.
<b>state</b>	The current configurations and operational status of the appliance.
<b>stateful access control</b>	Method to address firewall issues; stateful access control guards a network by allowing traffic only in the trusted direction. After a firewall for a protocol is configured, all packets that belong to those applications, that use that protocol, are subject to stateful monitoring.
<b>stateful firewall</b>	Type of firewall created by a filter that evaluates the context of connections, permits or denies traffic based on the context, and updates this information dynamically. Context includes IP source and destination addresses, port numbers, TCP sequencing information, and TCP connection flags. The context established in the first packet of a TCP session must match the context contained in all subsequent packets if a session is to remain active. <i>See also</i> stateful firewall filter, stateless firewall filter.
<b>stateful firewall filter</b>	Type of firewall filter that evaluates the context of connections, permits or denies traffic based on the context, and updates this information dynamically. Context includes IP source and destination addresses, port numbers, TCP sequencing information, and TCP connection flags. The context established in the first packet of a TCP session must match the context contained in all subsequent packets if a session is to remain active. <i>See also</i> firewall filter, stateless firewall filter.

<b>stateful firewall recovery</b>	Recovery strategy that preserves parameters concerning the history of connections, sessions, or application status before failure. <i>See also</i> stateless firewall recovery.
<b>stateful inspection</b>	Firewall process that checks the TCP header for information about the session's state. The process checks whether it is initializing (SYN), ongoing (SYN/ACK), or terminating (FIN). A stateful inspection firewall tracks each session flowing through it, dropping packets from unknown sessions that appear to be part of ongoing or illegal sessions. All security devices are stateful inspectors.
<b>stateful signature</b>	A signature is any distinctive characteristic that identifies something. A stateful signature knows the pattern it is attempting to find and where to look for that pattern. Stateful signatures produce very few false positives because they understand the context of the attack and can eliminate huge sections of network traffic they know the attack would not be in.
<b>stateful signature detection</b>	Method of attack detection that uses stateful signatures. Stateful signatures are much smarter than regular signatures: they know the protocol or service used to perpetrate the attack, the direction and flow of the attack, and the context in which the attack occurs.
<b>stateful SRP switchover</b>	Ensures rapid SRP module recovery following a switchover. Stateful SRP switchover uses an initial bulk file transfer and subsequent, transaction-based mirroring. In addition to keeping the contents of NVS, stateful SRP switchover keeps state and dynamic configuration data from the SRP memory synchronized between the primary and standby SRP modules. <i>Also known as</i> high availability mode.
<b>stateless access control</b>	Method to address firewall issues. You can use the E Series policy manager to provide solutions to access problems, such as address spoofing. E Series routers automatically provide some stateless checks as part of their normal forwarding feature set.
<b>stateless firewall filter</b>	Type of firewall filter that statically evaluates the contents of packets transiting the router and packets originating from or destined for the Routing Engine. Packets are accepted, rejected, forwarded, or discarded and collected, logged, sampled, or subjected to classification according to a wide variety of packet characteristics. Sometimes called access control lists (ACLs) or simply firewall filters, stateless firewall filters protect the processes and resources owned by the Routing Engine. A stateless firewall filter can evaluate every packet, including fragmented packets. In contrast to a stateful firewall filter, a stateless firewall filter does not maintain information about connection states. <i>See also</i> firewall filter, stateful firewall filter.
<b>stateless firewall recovery</b>	Recovery strategy that does not attempt to preserve the history of connections, sessions, or application status before failure. <i>See also</i> stateful firewall recovery.
<b>static interface</b>	Created through an existing configuration mechanism such as the command-line interface (CLI) or Simple Network Management Protocol (SNMP). <i>See also</i> dynamic interface.
<b>static LSP</b>	In the context of traffic engineering, a static route that requires hop-by-hop manual configuration. No signaling is used to create or maintain the path. <i>Also known as</i> static path.

<b>static oversubscription</b>	Process that enables the router to vary queue thresholds based on the number of queues currently configured, which is relatively static. <i>See also</i> bandwidth oversubscription, dynamic oversubscription.
<b>static path</b>	In the context of traffic engineering, a static route that requires hop-by-hop manual configuration. No signaling is used to create or maintain the path. <i>Also known as</i> static LSP.
<b>static route</b>	Explicitly configured route that is entered into the routing table, requiring packets to use the specified path. Static routes have precedence over routes chosen by dynamic routing protocols.
<b>static RP</b>	One of three methods of learning the rendezvous point (RP) to group address mapping in a multicast network. Each router in the domain must be configured with the required RP information.
<b>static translation</b>	One of two NAT methods used to assign a translated IP address. Establishes a one-to-one mapping between a local and global address. Entered as a direct configuration setting that remains in the translation table until it is removed. Used when you must initiate connections from both the inside and outside interfaces or when the translation is not subject to change. <i>See also</i> dynamic translation.
<b>static tunnel-server port</b>	Virtual port that is always present on dedicated tunnel-server modules. No explicit configuration is required for this type of port.
<b>statistics baseline</b>	Starting point for statistics collection after resetting protocol or application statistics and counters to zero. <i>Also known as</i> baseline statistics.
<b>statistics profile</b>	Template that specifies rate statistics and event-gathering characteristics. A statistics profile enables you to gather statistics for the rate at which packets are forwarded out of a queue and for the rate at which committed, conformed, or exceeded packets are dropped. Statistics profiles also enable you to use events to monitor the rate statistics.
<b>STIX</b>	Structured Threat Information eXpression. Standardized XML programming language used to convey data about cybersecurity threats in a manner understood both by humans and security technologies.
<b>STM</b>	synchronous transport module. CCITT specification for SONET at 155.52 Mbps.
<b>storage area network</b>	SAN. Network whose primary purpose is the transfer of data between computer systems and storage devices. This term is most commonly used in the context of any network that supports block storage, usually iSCSI, Fibre Channel, and FCoE networks.
<b>storm control</b>	Feature that enables a switch to monitor traffic levels and prevent flooding of a LAN by broadcast, multicast, and unknown unicast packets. The switch can be configured to either drop packets or shut down or temporarily disable interfaces when a specified traffic level—called the <i>storm control level</i> —is exceeded, thereby preventing the packets from proliferating and degrading the LAN.

<b>STP</b>	Spanning Tree Protocol. Defined in the IEEE standard 802.1D, the Spanning Tree Protocol is an OSI Layer 2 protocol that ensures a loop-free topology for any bridged LAN. This protocol creates a spanning tree within a mesh network of connected Layer 2 bridges (typically Ethernet switches), and disables the links that are not part of that tree, leaving a single active path between any two network nodes.
<b>streaming</b>	Playing a digital media file while it is still being downloaded; letting a user view and hear digitized content as it is being downloaded.
<b>strict</b>	In the context of traffic engineering, a route that must go directly to the next address in the path. (Definition from RFC 791, modified to fit LSPs).
<b>strict hop</b>	Routers in an MPLS named path that must be directly connected to the previous router in the configured path; a next hop defined by the ingress node that is connected to the previous node in the path. <i>See also</i> loose hop.
<b>strict-priority queuing</b>	SPQ. Dequeuing method that provides a special queue that is serviced until it is empty. The traffic sent to this queue tends to maintain a lower latency and more consistent latency numbers than traffic sent to other queues. <i>See also</i> APQ.
<b>strict-priority scheduling</b>	Process that designates the traffic class (queue) that receives top priority for transmission of its packets through a port. It is implemented with a special strict-priority scheduler node that is stacked directly above the port.
<b>strict-source routing</b>	MPLS routing mechanism that specifies every hop that the packet must traverse. The specified path consists of adjacent hops.
<b>structured query language</b>	SQL. International standard language used to create, modify, and select data from relational databases.
<b>Structured Threat Information eXpression</b>	STIX. Standardized XML programming language used to convey data about cybersecurity threats in a manner understood both by humans and security technologies.
<b>STS</b>	synchronous transport signal. Synchronous transport signal level 1 is the basic building block signal of SONET, operating at 51.84 Mbps. Faster SONET rates are defined as STS- <i>n</i> , where <i>n</i> is an integer by which the basic rate of 51.84 Mbps is multiplied. <i>See also</i> SONET.
<b>STU-C</b>	symmetric high-speed digital subscriber line (SHDSL) transceiver unit–central office. Equipment at the telephone company central office that provides SHDSL connections to remote user terminals.
<b>STU-R</b>	symmetric high-speed digital subscriber line (SHDSL) transceiver unit–remote. Equipment at the customer premises that provides SHDSL connections to remote user terminals.
<b>stub area</b>	Area that does not get flooded with external link-state advertisements (LSAs) but does carry intra-area and interarea routes and a default route. <i>See also</i> NSSA.



<b>STUN</b>	Session Traversal Utilities for NAT. Simple client/server protocol first defined in RFC 3489, <i>Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NATs)</i> , and later in RFC 5389, <i>Session Traversal Utilities for NAT</i> . A STUN client sends requests to a STUN server, which returns responses to the client. A STUN client is usually part of an application that requires a public IP address, port, or both. STUN clients can reside in an end system such as a PC or a network server, whereas STUN servers are usually attached to the Internet.
<b>Stylesheet Language Alternative Syntax</b>	SLAX. Syntax overlay of the Extensible Stylesheet Language Transformations (XSLT) programming language that follows the style of C and PERL and simplifies on-box script programming on devices running Junos OS.
<b>sub-LSP</b>	Part of a point-to-multipoint label-switched-path (LSP). A sub-LSP carries traffic from the main LSP to one of the egress PE routers. Each point-to-multipoint LSP has multiple sub-LSPs. <i>See also</i> P2MP LSP.
<b>subchannel</b>	Group of T1 timeslots. Subchannel numbers are in the range 1–24 but do not necessarily correspond to DS0 timeslots. The subchannel number identifies a fractional T1 channel.
<b>subdomain</b>	Section of a domain that is still a part of the larger whole domain.
<b>subinterface</b>	Mechanism that allows a single physical interface to support multiple logical interfaces or networks. Each subinterface borrows the bandwidth it needs from the physical interface with which it is associated. Configuring multiple virtual interfaces, or subinterfaces, on a single physical interface provides greater flexibility and connectivity on the network. <i>Also known as</i> logical interface.
<b>subnet addressing</b>	Type of addressing used in IP addresses. A subset of a class A, B, or C network. Subnets cannot be used with class D (multicast) addresses. <i>See also</i> IP address classes.
<b>subnet mask</b>	Number of bits of the network address used to separate the network information from the host information in a Class A, Class B, or Class C IP address, allowing the creation of subnetworks. In binary notation, a series of 1s followed by a series of contiguous 0s. The 1s represent the network number; the 0s represent the host number. Use of masks can divide networks into subnetworks by extending the network portion of the address into the host portion. Subnetting increases the number of subnetworks and reduces the number of hosts. <i>Also known as</i> mask, network mask.
<b>subnetwork</b>	Logical division of a LAN created to enhance performance and provide security.
<b>subrate value</b>	Value that reduces the maximum allowable peak rate by limiting the HDLC-encapsulated payload. The subrate value must exactly match that of the remote channel service unit (CSU).
<b>subscriber (client) bridge interface</b>	Type of bridge interface where the traffic flow direction is downstream—from the server (trunk) to the client (subscriber). <i>See also</i> trunk (server) bridge interface.
<b>subscriber identity module</b>	SIM. Detachable smart card on the GSM HSDPA 3G wireless modem and other mobile devices that stores configuration and subscriber information for the device.

<b>subscriber interfaces</b>	Extension of a shared IP interface. Subscriber interfaces are bidirectional—they can both receive and transmit traffic, in contrast to shared IP interfaces, which are unidirectional—they can transmit but not receive traffic.
<b>subscriber policy</b>	Set of forwarding and filtering rules that defines how to handle various packet or attribute types.
<b>subsequent address family identifier</b>	SAFI. Number that further identifies an address family identified by an AFI. In an MP-BGP update message, SAFI is used with AFI to identify the Network Layer protocol associated with the network address of the next hop and the semantics of the NLRI that follows. <i>See also</i> AFI.
<b>summary link advertisement</b>	OSPF link-statement advertisement flooded throughout the advertisement's associated areas by area border routers to describe the routes that they know about in other areas.
<b>super administrator</b>	Root user, or manager, of the system. The super administrator role has unrestricted authority to access and modify most of the system, and is the default administrator for all domains.
<b>superuser</b>	Predefined, special UNIX-like user account. The superuser has full permissions and unrestricted access to the system to perform system administration tasks. <i>Also known as</i> root user.
<b>supplicant</b>	The client in an 802.1X-authenticated network.
<b>sustained cell rate</b>	SCR. Upper bound on the conforming average rate of an ATM connection over a sustained time interval that is longer than the time interval for which the PCR is defined.
<b>SVC</b>	switched virtual connection (or circuit). A dynamically established, software-defined logical connection that stays up as long as data is being transmitted. When transmission is complete, the software tears down the SVC. SVCs are used in situations where data transmission is sporadic. <i>See also</i> PVC.
<b>switch</b>	Network device that attempts to perform as much of the forwarding task in hardware as possible. The switch can function as a bridge (LAN switch), router, or some other specialized device, and forwards frames, packets, or other data units. <i>See also</i> bridge.
<b>switch fabric module</b>	SFM. A module that works with the SFP module to create a shared memory fabric for the E320 router.
<b>Switch Interface Board</b>	SIB. On T Series Core Routers and PTX Series Packet Transport Routers, component that provides the path in the switching plane (or the fabric plane) for packets to travel from a source Packet Forwarding Engine to a destination Packet Forwarding Engine.
<b>switch route processor</b>	SRP. ERX router module that performs system management, routing table calculations and maintenance, forwarding table computations, statistics processing, configuration storage, and other control plane functions.

<b>switch-card chassis</b>	SCC. The centralized switch-card chassis that connects multiple line-card chassis (LCCs) into a routing matrix. For example, the TX Matrix router chassis is a switch-card chassis that connects to T640 line-card chassis. <i>See also</i> scc.
<b>switch-fabric chassis</b>	SFC. The centralized switch-fabric chassis that connects multiple line-card chassis (LCCs) into a routing matrix. For example, the TX Matrix Plus router chassis is a switch-fabric chassis that connects to T1600 or T4000 line-card chassis. <i>See also</i> sfc.
<b>Switch-to-Switch Protocol</b>	SSP. Protocol implemented between two DLSw routers that establishes connections, locates resources, forwards data, and handles error recovery and flow control.
<b>Switched Multimegabit Data Service</b>	SMDS. Connectionless, wide-area networking service designed for LAN interconnection. An SMDS network is composed of a series of SMDS switches inside a service provider's network, a series of channel service units/data service units (CSUs/DSUs) that connect subscribers to the network, and routers and gateways to connect to each CSU/DSU.
<b>switched virtual circuit, switched virtual connection</b>	SVC. A dynamically established, software-defined logical connection that stays up as long as data is being transmitted. When transmission is complete, the software tears down the SVC. SVCs are used in situations where data transmission is sporadic. <i>See also</i> PVC.
<b>switched VLAN</b>	S-VLAN, stacked VLAN, or service VLAN. Provides a two-level VLAN tag structure, with a specific service instance VLAN identifier carried inside the S-TAG field. Creating an S-VLAN requires the use of a second encapsulation tag; the router performs de-encapsulation twice, once to get the S-VLAN tag and once to get the VLAN tag. This double tagging approach enables more than 16 million address possibilities, extending the VLAN ID space to more than 16 million VLANs. This meets and exceeds the scaling requirement for Ethernet B-RAS applications. Defined by IEEE 802.1ad, an S-VLAN often corresponds to a network aggregation device such as a DSLAM. Scheduling and shaping is often established for an S-VLAN to provide CoS for downstream devices with little buffering and simple schedulers. <i>See also</i> B-VID, C-VLAN.
<b>Switching and Forwarding Module</b>	SFM. On an M160 router, a component of the Packet Forwarding Engine that provides route lookup, filtering, and switching to FPCs.
<b>switching plane</b>	In a routing matrix, the high-speed optical links established between the Switch Interface Boards (SIBs) of a line-card chassis (LCC) and the switch-fabric chassis (SFC) or the switch-card chassis (SCC).
<b>switchover</b>	In a redundant configuration, the process by which the router switches to the spare line module. During switchover, the line, circuit, and IP interfaces on the I/O module or IOAs appear to fail temporarily. The duration of the downtime depends on the number of interfaces and the size of the routing table, because the router must reload the interface configuration and the routing table from the SRP module. <i>See also</i> high availability mode.

<b>symmetric digital subscriber line</b>	SDSL. Version of digital subscriber line (DSL) where the upload speeds and download speeds are the same, typically in the range 144 Kbps–1.5 Mbps. SDSL uses one cable pair and does not share lines with analog phones.
<b>symmetric high-speed digital subscriber line</b>	SHDSL. Standardized multirate symmetric DSL that transports rate-adaptive symmetrical data across a single copper pair at data rates from 192 Kbps to 2.3 Mbps, or from 384 Kbps to 4.6 Mbps over two pairs, covering applications served by HDSL, SDSL, T1, E1, and services beyond E1. SHDSL conforms to the following recommendations: ITU G.991.2 G.SHDSL, ETSI TS 101-524 SDSL, and ANSI T1E1.4/2001-174 G.SHDSL. <i>See also</i> G.SHDSL.
<b>SYN</b>	TCP flag indicating the use of a synchronization packet when set to 1.
<b>SYN attack</b>	Denial-of-service attack in which SYN packets overwhelm a network by initiating so many connection attempts or information requests that the network can no longer process legitimate connection requests.
<b>synchronization</b>	<ul style="list-style-type: none"> <li>• Process that prevents a redundant NVS card from overwriting saved files on the primary NVS card if the primary SRP module fails and the redundant SRP module takes control. <i>See also</i> file system synchronization mode.</li> <li>• Mechanism for ensuring that a BGP speaker does not advertise routes to its EBGp peers before all the BGP routes have been redistributed into all routers within its AS that are running an IGP and are not running BGP. When BGP is not synchronized with the IGP, the IGP routers cannot forward all traffic received from another AS. The BGP speaker cannot propagate a BGP route that it learned from a peer until an IGP route to the prefix has been installed in the BGP speaker's IP routing table.</li> <li>• Method that NTP uses to ensure accurate time. There are three stages to synchronization: <ul style="list-style-type: none"> <li>• Preliminary synchronization—The system evaluates the initial time situation and decides how to proceed with longer-term synchronization.</li> <li>• Frequency calibration—Takes place the first time you use NTP or when you reboot the system. During this stage, the system evaluates the frequency error of its clock by measuring change in the offset error. A frequency calibration takes 15 minutes.</li> <li>• Progressive synchronization—The system continues to synchronize to a server after establishing initial NTP parameters.</li> </ul> </li> </ul>
<b>Synchronous Digital Hierarchy</b>	SDH. International standard defined by the International Telecommunication Union for transmitting bits over fiber-optic cable. A CCITT variation of the SONET standard.
<b>synchronous dynamic random access memory</b>	SDRAM. Electronic standard in which the inputs and outputs of SDRAM data are synchronized to an externally supplied clock, allowing for extremely fast consecutive read and write capacity. A type of RAM that is stored on dual in-line memory modules (DIMMs) and synchronized with the system clock.

<b>Synchronous Ethernet</b>	Physical Layer-based Ethernet technology that functions regardless of the network load. Synchronous Ethernet supports hop-by-hop frequency transfer, where all interfaces on the trail must support Synchronous Ethernet. Synchronous Ethernet supports sourcing and transfer of frequency for synchronization purposes for both wireless and wireline services and is primarily used for mobile backhaul and converged transport.
<b>Synchronous Optical Network</b>	SONET. High-speed (up to 2.5 Gbps) synchronous network specification developed by Bellcore and designed to run on optical fiber. STS1 is the basic building block of SONET. Approved as an international standard in 1988. <i>See also</i> SDH.
<b>synchronous static random access memory</b>	SSRAM. Used for storing routing tables, packet pointers, and other data such as route lookups, policer counters, and other statistics to which the microprocessor needs quick access.
<b>synchronous transport module</b>	STM. CCITT specification for SONET at 155.52 Mbps.
<b>synchronous transport signal</b>	STS. Synchronous transport signal level 1 is the basic building block signal of SONET, operating at 51.84 Mbps. Faster SONET rates are defined as STS- <i>n</i> , where <i>n</i> is an integer by which the basic rate of 51.84 Mbps is multiplied. <i>See also</i> SONET.
<b>sysid</b>	system identifier. Portion of the ISO nonclient peer. The system ID can be any 6 bytes that are unique throughout a domain.
<b>syslog</b>	system log. Method for sending and storing messages to a log file for troubleshooting or record-keeping. It can also be used as an action within a firewall filter to store information to the messages file.
<b>system alarm</b>	Predefined alarm triggered by a missing rescue configuration or by a lack of an installed license for a licensed software feature.
<b>System and Switch Board</b>	SSB. On an M20 router, a Packet Forwarding Engine component that performs route lookups and component monitoring and monitors FPC operation.
<b>System Architecture Evolution</b>	SAE. Core network architecture of the 3GPP's LTE wireless communication standard. <i>See also</i> Third-Generation Partnership Project (3GPP).
<b>System Control Board</b>	SCB. On an M40 router, the part of the Packet Forwarding Engine that performs route lookups, monitors system components, and controls FPC resets.
<b>system controller</b>	SC. Subsystem located on the SRP modules on the E320 router that controls the overall operations on the router.
<b>system events</b>	System changes that can be classified into log event categories and that can be used for tracking purposes. <i>Also known as</i> events.

<b>system ID</b>	sysid. Portion of the ISO nonclient peer. The system ID can be any 6 bytes that are unique throughout a domain.
<b>system log</b>	syslog. Method for sending and storing messages to a log file for troubleshooting or record-keeping. It can also be used as an action within a firewall filter to store information to the messages file.
<b>System Network Architecture</b>	SNA. IBM proprietary networking architecture consisting of a protocol stack that is used primarily in banks and other financial transaction networks.
<b>System On Chip</b>	SOC. Integration of all required components of a device into a single integrated chip.
<b>system reference point/terminal reference point interface</b>	S/T interface. A four-pair connection between the ISDN provider service and the customer terminal equipment.
<b>T</b>	
<b>T-carrier</b>	Generic designator for any of several digitally multiplexed telecommunications carrier systems originally developed by Bell Labs and used in North America and Japan.
<b>T-PDU</b>	Transport Protocol Data Unit. Payload that is tunneled in the GTP tunnel.
<b>T1</b>	Basic Physical Layer protocol used by the Digital Signal level 1 (DS1) multiplexing method in North America. A T1 interface operates at a bit rate of 1.544 Mbps and can support 24 DS0 channels.
<b>T3</b>	Physical Layer protocol used by the Digital Signal level 3 (DS3) multiplexing method in North America. A T3 interface operates at a bit rate of 44.736 Mbps.
<b>table map</b>	Mechanism for applying a route map to an IS-IS route as a way to filter and manipulate route attributes before the route is added to the routing table. Issuing the JunosE table-map command (in Router Configuration mode) applies a specified route map as a policy filter on the route before it is installed in the routing table.
<b>TACACS</b>	Terminal Access Controller Access Control System. A security protocol that provides centralized validation of users who are attempting to gain access to a router or an NAS.
<b>TACACS+</b>	Terminal Access Controller Access Control System Plus. An authentication method of providing access control for routers, network access servers, and other networked computing devices using one or more centralized servers. TACACS+ provides separate authentication, authorization, and accounting services. It is based on TACACS. However, it is an entirely new protocol.
<b>TACACS+ accounting service</b>	Service that enables the creation of an audit trail of User Exec sessions and command-line interface (CLI) commands that have been executed within these sessions. For example, you can track user CLI connects and disconnects, when configuration modes have been entered and exited, and which configuration and operational commands have been executed.

<b>TACACS+ host</b>	Security server on which the TACACS+ process is running. <i>Also known as TACACS+ server.</i>
<b>TACACS+ process</b>	Program or software running on a security server that provides AAA services using the TACACS+ protocol. The program processes authentication, authorization, and accounting requests from an NAS. When processing authentication requests, the process might respond to the NAS with a request for additional information, such as a password.
<b>tail drop</b>	Queue management algorithm for dropping packets from the input end (tail) of the queue when the length of the queue exceeds a configured threshold. <i>See also RED.</i>
<b>tarball</b>	A file in the tar file format, a standard type of archive file format. It is used widely to archive and unarchive files while preserving file system information such as user and group permissions, dates, and directory structures.
<b>targeted broadcast</b>	Broadcast that enables a broadcast packet destined for a remote network to transit across networks until the destination network is reached. In the destination network, the broadcast packet is broadcast as a normal broadcast packet.
<b>TAXII</b>	Trusted Automated eXchange of Indicator Information. Open-source mechanism for automatically sharing actionable threat information across organizations, products, and services.
<b>TCC</b>	translational cross-connect. Switching concept that allows you to establish interconnections between a variety of Data Link Layer (Layer 2) protocols or circuits.
<b>TCM</b>	tricolor marking. Traffic policing mechanism that extends the functionality of class-of-service (CoS) traffic policing by providing three levels of drop precedence (loss priority or PLP) instead of two. There are two types of TCM: single-rate and two-rate. Junos OS currently supports two-rate TCM only. <i>See also trTCM.</i>
<b>TCP</b>	Transmission Control Protocol. Works in conjunction with the Internet Protocol (IP) to send data over the Internet, creating connections between hosts for the exchange of data. Divides a message into packets and tracks the packets from point of origin to destination. Guarantees that packets are transmitted in their original sequence from sender to receiver.
<b>TCP Fast Open</b>	TFO. Update to Transmission Control Protocol (TCP) that significantly improves overall network latency for short Web transfers.
<b>TCP port 179</b>	Well-known port number used by BGP to establish a peering session with a neighbor.
<b>TCP scan</b>	Attack method that attempts to connect to every TCP port on a single machine, to provide attackers with information about your network configuration.

<b>TCP/IP</b>	Transmission Control Protocol/Internet Protocol. Set of communications protocols that support peer-to-peer connectivity functions for both local and wide area networks. Enables computers with different operating systems to communicate with each other. Controls how data is transferred between computers on the Internet.
<b>TCP/IP stack model</b>	Transmission Control Protocol/Internet Protocol stack model. A set of general network design recommendations that describes a five-layer approach, specifying how data should be formatted, addressed, transmitted, routed, and received to enable computers to communicate over a network. Often compared with the seven-layer OSI Model, which is a more prescriptive (versus descriptive) approach to network design.
<b>tcpdump</b>	<ul style="list-style-type: none"> <li>• UNIX packet monitoring utility used by Junos OS to view information about packets sent or received by the Routing Engine.</li> <li>• In IDP Series, a BSD utility used to capture TCP/IP packets.</li> </ul>
<b>TDM</b>	time-division multiplexing. A form of multiplexing that divides a transmission channel into successive time slots.
<b>TDMA</b>	Time-Division Multiple Access. Type of multiplexing in which two or more channels of information are transmitted over the same link, where the channels take turns to use the link. Each link is allocated a different time interval ("slot" or "slice") for the transmission of each channel. For the receiver to distinguish one channel from the other, some kind of periodic synchronizing signal or distinguishing identifier is required. <i>See also</i> GSM.
<b>TE</b>	traffic engineering. Ability to control the path taken through a network or portion of a network based on a set of traffic parameters (bandwidth, QoS parameters, and so on). Traffic engineering enables performance optimization of operational networks and their resources by balancing traffic load across links, routers, and switches on the network. <i>See also</i> MPLS traffic engineering, RSVP-TE.
<b>TE++</b>	Set of paths that are configured as a specific container statement and individual label-switched path (LSP) statements that are called sub-LSPs. A TE++ tunnel enables load balancing across multiple point-to-point member LSPs between the same ingress and egress routers.
<b>tear drop attack</b>	If the first and second parts of a fragmented packet overlap, the server attempting to reassemble the packet can crash. If the security device sees this discrepancy in a fragmented packet, it drops the packet.
<b>TEI</b>	Terminal Endpoint Identifier. Any ISDN-capable device attached to an ISDN network. The TEI is a number between 0 and 127, where 0 through 63 are used for static TEI assignment, 64 through 126 are used for dynamic assignment, and 127 is used for group assignment.
<b>TEID</b>	Tunnel Endpoint Identifier. Uniquely identifies a tunnel endpoint in the receiving GTP-U or GTP-C protocol entity. The receiving end of a GTP tunnel locally assigns the TEID value for the transmitting end.



<b>telemetry</b>	Automated process by which measurements and other data are collected at remote points and transmitted to receiving equipment for monitoring. <i>See also</i> Junos telemetry interface.
<b>template</b>	Configuration that is defined once and then can be used for other device configurations. You can specify most device configuration values in a template, and you can specify only those configuration parameters that you want to set. You do not need to specify a complete device configuration.
<b>template definition</b>	Feature that restricts the scope of the device template to a specific device family and Junos OS version. Using the template definition, you can create a common configuration through the Device Templates feature in Junos Space Network Management Platform. When the device template is deployed to a device, you can define variables and use a comma-separated values (CSV) file to provide device-specific values for these variables.
<b>tenants</b>	Users of resources from a cloud for running their businesses.
<b>Terminal Access Controller Access Control System (Plus)</b>	TACACS, TACACS+. An authentication method of providing access control for routers, network access servers, and other networked computing devices using one or more centralized servers. TACACS+ provides separate authentication, authorization, and accounting services. It is based on TACACS. However, it is an entirely new protocol.
<b>Terminal Endpoint Identifier</b>	TEI. Any ISDN-capable device attached to an ISDN network. The TEI is a number between 0 and 127, where 0 through 63 are used for static TEI assignment, 64 through 126 are used for dynamic assignment, and 127 is used for group assignment.
<b>terminating action</b>	Action in a routing policy or firewall filter that halts the logical software processing of a policy or filter.
<b>terms</b>	Used in a routing policy or firewall filter to segment the policy or filter into small match and action pairs.
<b>test interval</b>	Time, in seconds, between RPM tests.
<b>TFO</b>	TCP Fast Open. Update to Transmission Control Protocol (TCP) that significantly improves overall network latency for short Web transfers.
<b>TFTP</b>	Trivial File Transfer Protocol. An Internet software utility that is simpler to use than the File Transfer Protocol (FTP) but less capable. TFTP does not support any security features, so it is used where user authentication and directory visibility are not required. TFTP uses the User Datagram Protocol (UDP) rather than the Transmission Control Protocol (TCP) to transfer small files on a network.
<b>TGM550</b>	Avaya H.248 Telephony Gateway Module for VoIP, it is installed in a Services Router along with one or more Telephony Interface Modules (TIMs) to connect VoIP and legacy analog telephones and trunks over IP networks. Only the TGM550 has an interface configurable through the J-Web interface or Junos OS CLI. The TIMs are configured and administered from the TGM550 CLI.

<b>thick provision eager zeroed</b>	A virtual disk provisioning policy that completely erases previously stored data, then allocates the disk space to the virtual disk. Creation of disks in this format is time consuming.
<b>thick provision lazy zeroed</b>	A virtual disk provisioning policy where disk space is assigned to the virtual disk when the virtual disk is created. Previously stored data is not erased when the disk space is created. The previous data is erased when the VM is used for the first time.
<b>thin provision</b>	A virtual disk provisioning policy that assigns limited disk space with just the header information, depending upon the disk size. This policy is useful when storage space needs to be saved.
<b>Third-Generation Partnership Project</b>	3GPP. Created to expedite the development of open, globally accepted technical specifications for the Universal Mobile Telecommunications System (UMTS).
<b>threat prevention types</b>	Security framework that protects all hosts in your network against evolving security threats by employing cloud-based threat detection software with a next-generation firewall system. Threat prevention types protect the network from advanced threats by identifying and scanning all traffic – applications, users, and content – across all ports and protocols. The Command-and-Control server, GeolP, and infected hosts are examples of threat prevention types.
<b>Thrift</b>	Open-source project in the Apache Software Foundation. Thrift is an interface definition language and binary communication protocol that is used to define and create services for numerous languages.
<b>through</b>	Junos OS routing policy match type representing all routes that fall between the two supplied prefixes in the route filter.
<b>throughput</b>	Average rate of successful delivery of data packets over a physical or logical communication link. Throughput is measured in bits per second (bps), data packets per second, or sometimes data packets per time slot. <i>See also</i> line rate.
<b>TID</b>	tunnel identifier. Uniquely identifies a particular tunnel or tunnel group.
<b>TIM510</b>	Avaya E1/T1 Telephony Interface Module for VoIP, it is installed in a Services Router to provide an E1 or T1 trunk connection over the Internet to a telephone central office (CO). A TIM510 is configured and administered from a TGM550 installed in the same router.
<b>TIM514</b>	Avaya Analog Telephony Interface Module for VoIP, it is installed in a Services Router to connect individual telephones or trunk lines to the Internet. A TIM514 is configured and administered from a TGM550 installed in the same router.
<b>TIM521</b>	Avaya BRI Telephony Interface Module for VoIP, it is installed in a Services Router to connect ISDN Basic Rate Interface (BRI) trunk lines to a telephone central office (CO) over the Internet for data or voice transmission. A TIM521 is configured and administered from a TGM550 installed in the same router.

<b>time to live</b>	TTL. Value (octet) in the IP header that is (usually) decremented by 1 for each hop the packet passes through. If the field reaches zero, the packet is discarded, and a corresponding error message is sent to the source of the packet.
<b>Time-Division Multiple Access</b>	TDMA. Type of multiplexing in which two or more channels of information are transmitted over the same link, where the channels take turns to use the link. Each link is allocated a different time interval ("slot" or "slice") for the transmission of each channel. For the receiver to distinguish one channel from the other, some kind of periodic synchronizing signal or distinguishing identifier is required. <i>See also</i> GSM.
<b>time-division multiplexed channel</b>	Channel derived from a given frequency and transmitted over a single wire or wireless medium. The channel is preassigned a time slot whether or not there is data to transmit.
<b>time-division multiplexing</b>	TDM. A form of multiplexing that divides a transmission channel into successive time slots.
<b>timeout timer</b>	Used in a distance-vector protocol to ensure that the current route is still usable for forwarding traffic.
<b>TISSU</b>	topology-independent in-service software upgrade. Software upgrade for virtual machine and top-of-rack environments from one software image to another with no disruption to traffic transiting the device. In <i>topology-independent</i> virtual environments, devices are not linked by a hardware-based topology and such environments require a different approach for software upgrade than the one for hardware-based environments, which include routers and switches. <i>See also</i> ISSU, NSSU, and unified ISSU.
<b>TLS</b>	Transport Layer Security. Protocol that ensures privacy between communicating applications and their users on the Internet by blocking any third party from eavesdropping or message tampering. In NSM, it is used to provide secure communication between the NSM UI and the NSM GUI server.
<b>TLV</b>	type-length-value. An element inside a data communications protocol used to encode optional information. These fields are used as follows: <ul style="list-style-type: none"> <li>• Type—A 1-4 byte numeric code that indicates the kind of field that this part of the message represents.</li> <li>• Length—A 1-4 byte field that denotes the size of the value field, typically in bytes.</li> <li>• Value—A variable-sized set of bytes that contains the data for this part of the message.</li> </ul>
<b>TN power system</b>	Power distribution system that has one point connected directly to earth (ground), usually the star point in a three-phase system. The exposed conductive parts of the installation are connected to that point by protective earth conductors.
<b>TNP</b>	Trivial Network Protocol. Juniper Networks proprietary protocol automatically configured on an internal interface by Junos OS. TNP is used to communicate between the Routing Engine and components of the Packet Forwarding Engine, and is critical to the operation of the router.
<b>token-bucket algorithm</b>	Used in a rate-policing application to enforce an average bandwidth while allowing bursts of traffic up to a configured maximum value.

<b>top-of-rack switch</b>	In a data center, the switch installed on the top of a rack to which all the devices in the rack are connected. The top-of-rack switches in turn are connected to aggregation switches. This configuration reduces cabling by avoiding direct connections from the devices in a rack to aggregation switches and makes it easier to identify the point of network failure to a specific rack.
<b>topology-independent in-service software upgrade</b>	TISSU. Software upgrade for virtual machine and top-of-rack environments from one software image to another with no disruption to traffic transiting the device. In <i>topology-independent</i> virtual environments, devices are not linked by a hardware-based topology and such environments require a different approach for software upgrade than the one for hardware-based environments, which include routers and switches. <i>See also</i> ISSU, NSSU, and unified ISSU.
<b>ToS</b>	type of service. Method of handling traffic using information extracted from the fields in the ToS byte to differentiate packet flows.
<b>totally stubby area</b>	OSPF area type that prevents Type 3, 4, and 5 link-state advertisements (LSAs) from entering the nonbackbone area. However, type 3 LSAs carrying default route information alone are injected into the area. <i>See also</i> NSSA, stub area.
<b>tracing</b>	Logging method used to record information about a program's execution. Programmers use this information for debugging purposes. System administrators, technical support personnel, and software monitoring tools also use tracing to diagnose common problems with software. <i>See also</i> debugging.
<b>traditional NAT</b>	Common method of using network address translation (NAT). Primary use is translating private addresses to legal addresses for use in an external network. There are two types of traditional NAT: basic NAT and NAT. <i>See also</i> basic NAT, NAT.
<b>traffic class</b>	Chassis-wide collection of buffers, queues, and bandwidth that can be allocated to provide a defined level of service to packets in the traffic class for JunosE QoS.
<b>traffic cluster</b>	The ability to deploy unlimited numbers of active and passive Junos App Balancers, providing resilience to multiple failures and the ability to scale the Junos App Balancer cluster as the need arises. <i>Also known as</i> N+M Redundancy.
<b>traffic engineering</b>	TE. Ability to control the path taken through a network or portion of a network based on a set of traffic parameters (bandwidth, QoS parameters, and so on). Traffic engineering enables performance optimization of operational networks and their resources by balancing traffic load across links, routers, and switches on the network. <i>See also</i> MPLS traffic engineering, RSVP-TE.
<b>traffic engineering class</b>	In Differentiated Services-aware traffic engineering, a paired class type and priority.
<b>traffic engineering class map</b>	In Differentiated Services-aware traffic engineering, a map among the class types, priorities, and traffic engineering classes. The traffic engineering class mapping must be consistent across the Differentiated Services domain.

<b>traffic IP address</b>	An IP address you use to publish an Internet service, usually linked to your public DNS entry.
<b>traffic IP group</b>	A logical group containing several traffic IP addresses, and spanning some or all of your Junos App Balancers. These Junos App Balancers negotiate to ensure that the IP addresses in the group are always available.
<b>traffic policing</b>	Examines traffic flows and discards or marks packets that exceed service-level agreements (SLAs).
<b>traffic sampling</b>	Method used to capture individual packet information of traffic flow at a specified time period. The sampled traffic information is placed in a file and stored on a server for various types of analysis. <i>See also</i> packet capture.
<b>traffic selector flexible match</b>	During IKE negotiation, the responder can accept from the initiator a proposed traffic selector that is a subset of the traffic selector configured on the responder. The traffic selector IP addresses configured on the IKE initiator can be subsets of the traffic selector IP addresses configured on the IKE responder. (The term <i>traffic selector flexible match</i> is specific to IKE responder/initiator roles and behavior.)
<b>traffic shaping</b>	Reduces the potential for network congestion by placing packets in a queue with a shaper at the head of the queue. Traffic shaping tools regulate the rate and volume of traffic admitted to the network. <i>See also</i> shaping rate.
<b>traffic-class group</b>	Separate hierarchy of scheduler nodes and queues over a port. Traffic classes belong to the default group unless they are specifically assigned to a named group. Organizing traffic into multiple traffic-class groups enables you to manage and shape traffic—by service class, for example—when the traffic classes are distributed across different virtual circuits. The router supports up to four traffic-class groups. A traffic class cannot belong to more than one group.
<b>traffic-control profile</b>	Defines the characteristics of a scheduler node, as used at several levels of the CLI, including the physical interface, the interface set, and the logical interface. Scheduling and queuing characteristics are defined for the scheduler node using the shaping-rate, guaranteed-rate, and delay-buffer-rate statements. Queues over these scheduler nodes are defined by referencing a scheduler map. <i>See also</i> schedulers and scheduler maps.
<b>transform sets</b>	Sets composed of security parameters that provide a required security level to a particular data flow. Transform sets are used during user SA negotiation to find common agreement between the local and the remote security gateway on how to protect that specific data flow. A transform set includes encapsulation protocols and transforms, for example, encryption/decryption/authentication algorithms.
<b>transient black hole</b>	<i>See</i> transient null route.
<b>transient change</b>	Commit script-generated configuration change that is loaded into the checkout configuration, but not into the candidate configuration. Transient changes are not saved in the configuration if the associated commit script is deleted or deactivated. <i>See also</i> persistent change.

<b>transient interface</b>	Interface that can be configured on a routing platform depending on your network needs. Unlike a permanent interface that is required for router operation, a transient interface can be disabled or removed without affecting basic operation of the router. <i>See also</i> FPC, PIC, permanent interface.
<b>transient null route</b>	Condition in which a transit router running both IS-IS and BGP drops traffic because not all of the information required to reach some external destinations is yet available.
<b>transit area</b>	In OSPF, an area used to pass traffic from one adjacent area to the backbone, or to another area if the backbone is more than two hops away from an area.
<b>transit router</b>	In MPLS, any intermediate router in the LSP between the ingress router and the egress router.
<b>translational cross-connect</b>	TCC. Switching concept that allows you to establish interconnections between a variety of Data Link Layer (Layer 2) protocols or circuits.
<b>Transmission Control Protocol</b>	TCP. Works in conjunction with the Internet Protocol (IP) to send data over the Internet, creating connections between hosts for the exchange of data. Divides a message into packets and tracks the packets from point of origin to destination. Guarantees that packets are transmitted in their original sequence from sender to receiver.
<b>Transmission Control Protocol/Internet Protocol</b>	TCP/IP. Set of communications protocols that support peer-to-peer connectivity functions for both local and wide area networks. Enables computers with different operating systems to communicate with each other. Controls how data is transferred between computers on the Internet.
<b>transparent bridge</b>	Data Link Layer (Layer 2) relay device that connects two or more networks or network systems. Transparent bridging is configured when you create one or more bridge groups on an E Series router. <i>See also</i> bridge group, bridge group interface.
<b>transparent proxy</b>	A proxy that does not modify the request or response beyond what is required for proxy authentication and identification, helping to optimize networks because there is no client configuration required and no modification of traffic is done. Media Flow Controller transparent proxies can be configured to recognize the origin based on one of these methods: the HOST header, the X-NKN or a custom header, or the client destination IP address. <i>See also</i> mid-tier proxy, reverse proxy.
<b>Transport Layer</b>	Fourth level in the seven-layer OSI Reference Model for network protocol design and in the five-layer TCP/IP stack model. This layer provides communication between applications residing in different hosts and reliable transparent data transfer between end users. It is the first layer to address reliability. <i>Also known as</i> Layer 4.
<b>Transport Layer Security</b>	TLS. Protocol that ensures privacy between communicating applications and their users on the Internet by blocking any third party from eavesdropping or message tampering. In NSM, it is used to provide secure communication between the NSM UI and the NSM GUI server.

<b>transport mode</b>	IPsec mode of operation in which the data payload is encrypted, but the original IP header is left untouched. The IP addresses of the source or destination can be modified if the packet is intercepted. Because of its construction, transport mode can be used only when the communication endpoint and cryptographic endpoint are the same. VPN gateways that provide encryption and decryption services for protected hosts cannot use transport mode for protected VPN communications. <i>See also</i> tunnel mode.
<b>transport plane</b>	Virtual network path used to distribute data between nodes. <i>Also known as</i> data plane. <i>See also</i> control plane.
<b>Transport Protocol Data Unit</b>	T-PDU. Payload that is tunneled in the GTP tunnel.
<b>transport virtual router</b>	For a secure IP tunnel, the VR in which both of the secure tunnel endpoints—the source and destination—are routable addresses. Normally, the transport VR is the default ISP routing infrastructure on top of which VPNs are provisioned.
<b>trap</b>	SNMP message that reports significant events occurring on a network device, most often errors or failures. SNMP traps are defined in either standard or enterprise-specific MIBs. <i>See</i> SNMP trap.
<b>tricolor marking</b>	TCM. Traffic policing mechanism that extends the functionality of class-of-service (CoS) traffic policing by providing three levels of drop precedence (loss priority or PLP) instead of two. There are two types of TCM: single-rate and two-rate. Junos OS currently supports two-rate TCM only. <i>See also</i> trTCM.
<b>trigger</b>	RADIUS attribute that identifies a user whose traffic is to be mirrored. Packet mirroring starts when a trigger is detected. <i>See also</i> packet mirroring.
<b>trigger event</b>	Event that is triggered by a condition being matched.
<b>trigger table</b> (mteTriggerTable)	SNMP term for a table that lists any currently defined trigger conditions. Triggers fall into three categories—existence, Boolean, and threshold. One of three parts of the Event MIB. <i>See also</i> event table (mteEventTable), objects table (mteObjectsTable).
<b>triggered updates</b>	Used in a distance-vector protocol to reduce the time for the network to converge. When a router has a topology change, it immediately sends the information to its neighbors instead of waiting for a timer to expire.
<b>Triple Data Encryption Standard</b>	3DES. A 168-bit encryption algorithm that encrypts data blocks with three different keys in succession, achieving a higher level of encryption than standard DES. Data is encrypted with the first key, decrypted with the second key, and encrypted again with the third key. 3DES is often implemented with cipher block chaining (CBC). 3DES is one of the strongest encryption algorithms available for use in virtual private networks (VPNs). <i>Also known as</i> Triple DES.
<b>triple play</b>	Provisioning of three services (data, voice, and video) over a single broadband connection. <i>See also</i> quadruple play.

<b>Trivial File Transfer Protocol</b>	TFTP. An Internet software utility that is simpler to use than the File Transfer Protocol (FTP) but less capable. TFTP does not support any security features, so it is used where user authentication and directory visibility are not required. TFTP uses the User Datagram Protocol (UDP) rather than the Transmission Control Protocol (TCP) to transfer small files on a network.
<b>Trivial Network Protocol</b>	TNP. Juniper Networks proprietary protocol automatically configured on an internal interface by Junos OS. TNP is used to communicate between the Routing Engine and components of the Packet Forwarding Engine, and is critical to the operation of the router.
<b>trojan</b>	Program with hidden functionality. Trojans often install a remote administration program (known as a backdoor) that enables attackers to access the target system.
<b>trTCM</b>	two-rate TCM. Polices traffic according to the color classification (loss priority) of each packet. Traffic policing is based on two rates: the committed information rate (CIR) and the peak information rate (PIR). Two-rate TCM is defined in RFC 2698, <i>A Two Rate Three Color Marker</i> . <i>See also</i> CIR, PIR.
<b>trunk (server) bridge interface</b>	Bridge interface in which the traffic flow direction is upstream—from the client (subscriber) to the server (trunk). <i>See also</i> subscriber (client) bridge interface.
<b>trunk mode</b>	Layer 2 circuit cell-relay transport mode that allows you to send ATM cells between ATM2 IQ interfaces over an MPLS core network. You use Layer 2 circuit trunk mode (as opposed to standard Layer 2 circuit cell-relay mode) to transport ATM cells over an MPLS core network that is implemented between other vendors' switches or routers. The multiple connections associated with a trunk increase bandwidth and provide failover redundancy. <i>See also</i> AAL5 mode, cell-relay mode, Layer 2 circuits, standard AAL5 mode.
<b>trunk port</b>	Enables a switch to bundle traffic from several VLANs through a single physical port, sorting the various packets by the VLAN identifier (VID) in their frame headers.
<b>trust zone</b>	One of two predefined zones (trust, untrust) that enables packets to be secured from being seen by devices external to your current domain.
<b>Trusted Automated eXchange of Indicator Information</b>	TAXII. Open-source mechanism for automatically sharing actionable threat information across organizations, products, and services.
<b>trusted network</b>	Internal network (for instance, an intranet) or your personal computer. <i>See also</i> untrusted network.
<b>TSM</b>	Tunnel Service Module. Line module that does not pair with a corresponding I/O module that provides ingress and egress ports. A TSM receives data from and transmits data to line modules that have ingress and egress ports.
<b>Tspec object</b>	RSVP message object that contains information such as the bandwidth request of the LSP as well as the minimum and maximum packets supported.



<b>TTL</b>	time to live. Value (octet) in the IP header that is (usually) decremented by 1 for each hop the packet passes through. If the field reaches zero, the packet is discarded, and a corresponding error message is sent to the source of the packet.
<b>tunnel</b>	Private, secure path through an otherwise public network. More specifically, it is an LSP that is used by an IGP to reach a destination, or an LSP that uses traffic engineering.
<b>tunnel endpoint</b>	Last node of a tunnel where the tunnel-related headers are removed from the packet, which is then passed on to the destination network.
<b>Tunnel Endpoint Identifier</b>	TEID. Uniquely identifies a tunnel endpoint in the receiving GTP-U or GTP-C protocol entity. The receiving end of a GTP tunnel locally assigns the TEID value for the transmitting end.
<b>tunnel identifier</b>	TID. Uniquely identifies a particular tunnel or tunnel group.
<b>tunnel interface</b>	Opening, or doorway, through which traffic to or from a VPN tunnel passes. It can be numbered (assigned an IP address) or unnumbered. A numbered tunnel interface can be in either a tunnel zone or security zone. An unnumbered tunnel interface can only be in a security zone that contains at least one security zone interface. The unnumbered tunnel interface borrows the IP address from the security zone interface.
<b>tunnel mode</b>	IPsec mode of operation in which the entire IP packet, including the header, is encrypted and authenticated and a new VPN header is added, protecting the entire original packet. This mode can be used by both VPN clients and VPN gateways, and protects communications that come from or go to non-IPsec systems. <i>See also</i> transport mode.
<b>Tunnel Service Module</b>	TSM. Line module that does not pair with a corresponding I/O module that provides ingress and egress ports. A TSM receives data from and transmits data to line modules that have ingress and egress ports.
<b>tunnel services interface</b>	Provides the capability of a Tunnel Services PIC on an AS PIC. <i>See also</i> Tunnel Services PIC.
<b>Tunnel Services PIC</b>	Physical interface card that allows the router to perform the encapsulation and de-encapsulation of IP datagrams. The Tunnel Services PIC supports IP-IP, GRE, and PIM register encapsulation and de-encapsulation. When the Tunnel Services PIC is installed, the router can be a PIM rendezvous point (RP) or a PIM first-hop router for a source that is directly connected to the router.
<b>tunnel zone</b>	Logical segment that hosts one or more tunnel interfaces. A tunnel zone is associated with a security zone that acts as its carrier.

<b>tunneling</b>	<ul style="list-style-type: none"> <li>• Transmission of data intended for use only within a private (usually corporate) network through a public network in such a way that the routing nodes in the public network are unaware that the transmission is part of a private network. Tunneling is generally done by encapsulating the private network data and protocol information within the public network transmission units so that the private network protocol information appears to the public network as data. Tunneling allows the use of the Internet, a public network, to convey data on behalf of a private network.</li> <li>• With VPN tunneling, remote users can access the entrance to their corporate VPN network using an Internet service provider, and the remote users as well as the organization know that it is a secure connection.</li> <li>• When a payload protocol is incompatible with the delivery network, a tunneling protocol can encapsulate it for delivery only; no policies can be applied.</li> </ul> <p><i>Also known as port forwarding.</i></p>
<b>tunneling protocol</b>	Network protocol that encapsulates one protocol or session inside another. When protocol A is encapsulated within protocol B, A treats B as though it were a Data Link Layer. Tunneling can be used to transport a network protocol through a network that would not otherwise support it. It is encapsulated for delivery only; no policies can be applied. Tunneling can also be used to provide various types of VPN functionality such as private addressing.
<b>twice NAT</b>	Both the source and destination addresses are subject to translation as packets traverse the NAT router in either direction. <i>See also</i> NAT.
<b>two-rate rate-limit profile</b>	Enables the user to build tiered rate-limit services and to specify different treatments for packets at different rates. <i>See also</i> one-rate rate-limit profile, rate-limit profile.
<b>two-rate TCM</b>	trTCM. Two-rate TCM polices traffic according to the color classification (loss priority) of each packet. Traffic policing is based on two rates: the committed information rate (CIR) and the peak information rate (PIR). Two-rate TCM is defined in RFC 2698, <i>A Two Rate Three Color Marker</i> . <i>See also</i> CIR, PIR.
<b>TX</b>	Communications abbreviation for transmit; the corresponding abbreviation for receive is TRX.
<b>TX Matrix platform</b>	Routing platform that provides the centralized switching fabric of the routing matrix.
<b>type of service</b>	ToS. Method of handling traffic using information extracted from the fields in the ToS byte to differentiate packet flows.
<b>type-length-value</b>	<p>TLV. An element inside a data communications protocol used to encode optional information. These fields are used as follows:</p> <ul style="list-style-type: none"> <li>• Type—A 1-4 byte numeric code that indicates the kind of field that this part of the message represents.</li> <li>• Length—A 1-4 byte field that denotes the size of the value field, typically in bytes.</li> <li>• Value—A variable-sized set of bytes that contains the data for this part of the message.</li> </ul>

## U

<b>U</b>	Unit. Standard of measurement for rack-mounted equipment (a U equals 1.75 in., or 4.44 cm).
<b>U interface</b>	User reference point interface. A single-pair connection between the local ISDN provider and the customer premises equipment.
<b>U-Boot</b>	universal boot loader. Open-source boot loader used in embedded devices to boot the device's OS kernel.
<b>UBR</b>	unspecified bit rate. ATM service category that does not specify traffic-related service guarantees. Specifically, UBR does not define a per-connection negotiated bandwidth.
<b>Ubuntu</b>	Linux-based operating system and distribution released as free and open-source software for personal computers, smartphones, and network servers.
<b>uCPE</b>	universal customer premises equipment. Customer premises equipment (CPE) with virtualized network functions that might be sourced from multiple vendors. <i>Also known as distributed CPE.</i>
<b>UDP</b>	User Datagram Protocol. In TCP/IP, a connectionless Transport Layer protocol that exchanges datagrams without acknowledgments or guaranteed delivery, requiring that error processing and retransmission be handled by other protocols.
<b>UDP flood</b>	Denial-of-service attack using multiple UDP packets, sent to slow the target system to the point that it can no longer handle valid connections. You can configure the security device with a threshold to invoke UDP flood attack protection. When UDP packet flow exceeds this threshold, the device records the UDP flood attack as a statistic.
<b>UDP scan</b>	Attack method that attempts to connect to every UDP port on a single machine, to provide attackers with information about your network configuration.
<b>UHP</b>	ultimate-hop popping. When the egress router advertises the explicit null label or a non-null label to its upstream neighbor. This advertisement, performed by the signaling protocol (either LDP or RSVP-TE), ensures that all MPLS packets traversing the LSP to the egress router include a label. <i>See also PHP.</i>
<b>UI</b>	user interface. Program that controls a display for the user (usually on a computer monitor) and that allows the user to interact with the system. <i>See also PHP.</i>
<b>ultimate-hop popping</b>	UHP. When the egress router advertises the explicit null label or a non-null label to its upstream neighbor. This advertisement, performed by the signaling protocol (either LDP or RSVP-TE) ensures that all MPLS packets traversing the LSP to the egress router include a label. <i>See also PHP.</i>
<b>UME</b>	UNI management entity. Code residing in the ATM devices at each end of a UNI (user-to-network interface) circuit that functions as an SNMP agent, maintaining network and connection information specified in a MIB.

<b>UMTS</b>	universal mobile telecommunications system. Provides third-generation (3G), packet-based transmission of text, digitized voice, video, and multimedia, at data rates up to 2 Mbps.
<b>UMTS Terrestrial Radio Access Network</b>	UTRAN. WCDMA radio network in UMTS.
<b>UNC</b>	Unified National Coarse. Standard used to specify the thread in screws and bolts.
<b>unchannelized interface</b>	Interface that is not fragmented into channels.
<b>UNI</b>	user-to-network interface. ATM Forum specification that defines an interoperability standard for the interface between a router or an ATM switch located in a private network and the ATM switches located within the public carrier networks. Also used to describe similar connections in Frame Relay networks.
<b>UNI management entity</b>	UME. Code residing in the ATM devices at each end of a UNI (user-to-network interface) circuit that functions as an SNMP agent, maintaining network and connection information specified in a MIB.
<b>unicast</b>	Operation of sending network traffic from one network node to another individual network node.
<b>unicast address</b>	IPv4 and IPv6 user-to-user addressing protocol used to send a datagram to a single recipient.
<b>unified in-service software upgrade</b>	unified ISSU. Software upgrade for routing platforms from one Junos OS release to another with no disruption of the control plane and with minimal disruption of traffic. Unified ISSU is supported only on platforms with dual Routing Engines. A routing architecture requires a unified approach to preserve routing tables and control plane information. <i>See also</i> ISSU, NSSU, and TISSU.
<b>unified ISSU</b>	unified in-service software upgrade. Software upgrade for routing platforms from one Junos OS release to another with no disruption of the control plane and with minimal disruption of traffic. Unified ISSU is supported only on platforms with dual Routing Engines. A routing architecture requires a unified approach to preserve routing tables and control plane information. <i>See also</i> ISSU, NSSU, and TISSU.
<b>Unified National Coarse</b>	UNC. Standard used to specify the thread in screws and bolts.
<b>uniform model</b>	Tunneling method that renders MPLS transparent to the differentiated services operation. From the diff-serv perspective, it is as if MPLS is not used. In the uniform model, if traffic conditioning is applied somewhere along the LSP, the EXP bits of the inner header must be changed at the egress when the inner header becomes the outer header (because of the pop of the outer label). <i>See also</i> pipe (and short-pipe) model.
<b>Uniform Object Locator</b>	UOL. An intuitive, general-purpose identifier that is hierarchical and readable. Details can be found in Internet draft draft-boynton-uol-00, <i>Uniform Object Locator—UOL</i> .
<b>Uniform Resource Identifier</b>	URI. Compact string of characters for identifying an abstract or physical resource. Details can be found in RFC 2396, <i>Uniform Resource Identifiers (URI): Generic Syntax</i> .

<b>Uniform Resource Locator</b>	URL. Standard method of specifying the location of an available electronic resource. Also known as a location or an address, a URL specifies the location of files on servers. A general URL has the syntax <b>protocol://address</b> . For example, <b>http://www.example.com/index.html</b> specifies that the protocol is <b>http</b> and the address is <b>www.example.com/index.html</b> . Most commonly used as a compact string representation for a resource available over the Internet, as defined in RFC 1738, <i>Uniform Resource Locators (URL)</i> . <i>See also</i> Uniform Resource Identifier.
<b>uninterruptible power supply</b>	UPS. Device that sits between a power supply and a router or other device and prevents power-source events, such as outages and surges, from affecting or damaging the device.
<b>Unit</b>	U. Standard of measurement for rack-mounted equipment (a U equals 1.75 in., or 4.44 cm).
<b>unit</b>	Junos OS syntax that represents the logical properties of an interface.
<b>universal boot loader</b>	U-Boot (shortened from Das U-Boot). Open-source boot loader used in embedded devices to boot the device's OS kernel.
<b>universal customer premises equipment</b>	uCPE. Customer premises equipment (CPE) with virtualized network functions that might be sourced from multiple vendors. <i>Also known as</i> distributed CPE.
<b>universal mobile telecommunications system</b>	UMTS. Provides third-generation (3G), packet-based transmission of text, digitized voice, video, and multimedia, at data rates up to 2 Mbps.
<b>Universal Unique Identifier</b>	UUID. 128-bit number assigned to any object within a distributed computing environment (DCE) cell which is guaranteed to be unique.
<b>unmanaged device</b>	Device manufactured by a vendor other than Juniper Networks and managed from Junos Space Network Management Platform.
<b>unnumbered interface</b>	Logical interface that is configured without an IP address.
<b>unspecified bit rate</b>	UBR. ATM service category that does not specify traffic-related service guarantees. Specifically, UBR does not define a per-connection negotiated bandwidth.
<b>untrust zone</b>	One of two predefined zones (trust, untrust) that enables packets to be seen by devices external to your current domain.
<b>untrusted network</b>	External network, such as the Internet. <i>See also</i> trusted network.
<b>UOL</b>	Uniform Object Locator. An intuitive, general-purpose identifier that is hierarchical and readable. Details can be found in Internet draft draft-boynton-uol-00, <i>Uniform Object Locator—UOL</i> .
<b>Update message</b>	BGP message that advertises path attributes and routing knowledge to an established neighbor.

<b>update timer</b>	Used in a distance-vector protocol to advertise routes to a neighbor on a regular basis.
<b>uplink port (Junos fusion)</b>	In a Junos fusion, the port on the satellite device that connects the satellite device to the aggregation device. <i>See also</i> aggregation device, satellite device.
<b>UPS</b>	uninterruptible power supply. Device that sits between a power supply and a router or other device and prevents power-source events, such as outages and surges, from affecting or damaging the device.
<b>upto</b>	Junos OS routing policy match type representing all routes that share the same most-significant bits and whose prefix length is smaller than the supplied subnet in the route filter.
<b>URI</b>	Uniform Resource Identifier. Compact string of characters for identifying an abstract or physical resource. Details can be found in RFC 2396, <i>Uniform Resource Identifiers (URI): Generic Syntax</i> .
<b>uri-prefix</b>	This namespace argument refines which requests Media Flow Controller accepts. In the URL <code>http://www.example.com:port/vod/path1/path2/filename.ext?</code> , the uri-prefix could be defined as <code>/vod/path1</code> (slash), <code>/vod/path1</code> , or <code>/vod/path1</code> . If <code>/</code> (slash) is used, all incoming requests to that domain are honored; if <code>/vod</code> is used, only requests containing <code>/vod</code> (and any subdirectory of it) are honored; if <code>/vod/path1</code> is used, requests must include that prefix and that sub-directory. Sub-sub-directories of <code>path1</code> need not be specified.
<b>URL</b>	Uniform Resource Locator. Standard method of specifying the location of an available electronic resource. Also known as a location or an address, a URL specifies the location of files on servers. A general URL has the syntax <code>protocol://address</code> . For example, <code>http://www.example.com/index.html</code> specifies that the protocol is <code>http</code> and the address is <code>www.example.com/index.html</code> . Most commonly used as a compact string representation for a resource available over the Internet, as defined in RFC 1738, <i>Uniform Resource Locators (URL)</i> . <i>See also</i> Uniform Resource Identifier.
<b>user</b>	Person using the network that your security devices are protecting. NSM supports two types of users: local users and external users.
<b>User Datagram Protocol</b>	UDP. In TCP/IP, a connectionless Transport Layer protocol that exchanges datagrams without acknowledgments or guaranteed delivery, requiring that error processing and retransmission be handled by other protocols.
<b>User Exec mode</b>	CLI mode you are in after you log in to the system. By default, the commands you can execute from User Exec mode provide only user-level access. The User Exec commands allow you to perform such functions as changing terminal settings on a temporary basis, performing ping and trace commands, displaying system information, and accessing Global Configuration mode. <i>See also</i> Global Configuration mode, Privileged Exec mode, privileged level.
<b>user interface</b>	UI. Program that controls a display for the user (usually on a computer monitor) and that allows the user to interact with the system. <i>See also</i> PHP.

<b>user level</b>	Access level in the CLI of E Series routers that enables you to view router status. This level restricts you to User Exec mode.
<b>user object</b>	User objects represent the users of your managed devices. You can include user objects or groups in security policies or VPNs to permit or deny access to individuals or groups.
<b>user realm</b>	Associated with a specific authentication server, you can enforce Host Checker rules at the realm level to perform security checks before the user authenticates by assigning Host Checker policies to a realm.
<b>user role</b>	Specifies which resources the user can access. You can enforce Host Checker rules at the role level to perform security checks after the user is authenticated by assigning Host Checker policies to a role.
<b>user-based security model</b>	USM. Method for providing SNMP message-level security using authentication protocols and privacy protocols.
<b>user-to-network interface</b>	UNI. ATM Forum specification that defines an interoperability standard for the interface between a router or an ATM switch located in a private network and the ATM switches located within the public carrier networks. Also used to describe similar connections in Frame Relay networks.
<b>USM</b>	user-based security model. Method for providing SNMP message-level security using authentication protocols and privacy protocols.
<b>UTC</b>	Coordinated Universal Time. Historically referred to as Greenwich mean time (GMT), a high-precision atomic time standard that tracks Universal Time (UT) and is the basis for legal civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC.
<b>UTRAN</b>	UMTS Terrestrial Radio Access Network. WCDMA radio network in UMTS.
<b>UUID</b>	Universal Unique Identifier. 128-bit number assigned to any object within a distributed computing environment (DCE) cell which is guaranteed to be unique.
<b>V</b>	
<b>V.35 interface</b>	Provides synchronous operation between data communication equipment (DCE) and data terminal equipment (DTE) for data communication over the telephone network.
<b>vapor corrosion inhibitor</b>	VCI. Small cylinder packed with the router that prevents corrosion of the chassis and components during shipment.
<b>variable bit rate</b>	VBR. ATM service category that supports variable bit rate data traffic with average and peak traffic parameters. VBR traffic adds the ability to statistically oversubscribe user traffic. The VBR service category has two subcategories: VBR-NRT and VBR-RT.
<b>variable bit rate, non-real time</b>	VBR-NRT. Subcategory of the VBR service category that is used for bursty or other non-time-sensitive transmissions. VBR-NRT guarantees minimum delay and cell loss.

<b>variable bit rate, real time</b>	VBR-RT. Subcategory of the VBR service category that is used for time-sensitive connections such as video or voice. VBR-RT guarantees minimum delay and cell loss.
<b>VBR</b>	variable bit rate. ATM service category that supports variable bit rate data traffic with average and peak traffic parameters. VBR traffic adds the ability to statistically oversubscribe user traffic. The VBR service category has two subcategories: VBR-NRT and VBR-RT.
<b>VBR-NRT</b>	variable bit rate, non-real time. Subcategory of the VBR service category that is used for bursty or other non-time-sensitive transmissions. VBR-NRT guarantees minimum delay and cell loss.
<b>VBR-RT</b>	variable bit rate, real time. Subcategory of the VBR service category that is used for time-sensitive connections such as video or voice. VBR-RT guarantees minimum delay and cell loss.
<b>VC</b>	virtual circuit, virtual connection. <ul style="list-style-type: none"> <li>• Software-defined logical connection between two network devices that is not a dedicated connection but acts as though it is. It can be either permanent (PVC) or switched (SVC). VCs are used in ATM, Frame Relay, and X.25. <i>See also</i> VPI, VCI, PVC, SVC.</li> <li>• In IDP Series, corresponds with a physical interface.</li> </ul>
<b>VCC</b>	virtual channel connection. Uses all the addressing bits of a cell header to move traffic from one link to another. The VCC is formed by joining a series of virtual channels, which are logical circuits uniquely identified for each link of the network.
<b>VCC cell relay encapsulation</b>	Method for the router to emulate ATM switch behavior by forwarding individual ATM cells over an MPLS pseudowire (also referred to as an MPLS tunnel) created between two ATM VCCs, or as part of a local ATM passthrough connection between two ATM 1483 subinterfaces on the same router.
<b>VCCV</b>	Virtual Circuit Connectivity Verification. A protocol used to provide a control channel between the ingress and egress devices of a pseudowire. This control channel can be used to manage the operation of a pseudowire by forwarding and receiving VCCV messages indicating the current status of the pseudowire.
<b>VCD</b>	virtual circuit descriptor. Unique number that identifies a virtual circuit.
<b>vCenter</b>	The VMware <sup>®</sup> vCenter server, formerly known as VMware VirtualCenter, that centrally manages VMware vSphere environments, allowing administrators control over the virtual environment. The vCenter provides centralized control and visibility at every level of the virtual infrastructure. It manages clusters of ESX/ESXi hosts, including their VMs, hypervisors, and other parts of the virtualized environment. The vGW Virtual Gateway connects to the vCenter for visibility into all VMs.
<b>VCI</b>	<ul style="list-style-type: none"> <li>• vapor corrosion inhibitor. Small cylinder packed with the router that prevents corrosion of the chassis and components during shipment.</li> <li>• virtual circuit (channel) identifier. 16-bit field in the header of an ATM cell that indicates the particular virtual circuit the cell takes through a virtual path. <i>See also</i> VPI.</li> </ul>



<b>vCPU</b>	virtual central processing unit, virtual CPU. The virtual form of a physical central processing unit, it helps in the execution of instructions, processing of data, and calculations.
<b>VDSL</b>	very-high-bit-rate digital subscriber line. DSL technology providing faster data transmission over short distances, usually between 1000 and 4500 feet (300 and 1500 meters), of twisted pair copper wire. The shorter the distance, the faster the connection rate.
<b>VDSL2</b>	Enhancement to ITU-T G.993.1 standard VDSL that permits the transmission of asymmetric and symmetric (full duplex) aggregate data at a faster rate.
<b>VE router</b>	VPLS edge device. Router that is analogous to a provider edge (PE) router in a BGP/MPLS VPN configuration, and performs similar functions.
<b>vector</b>	The means or vehicle by which a denial-of-service or distributed-denial-of-service attack is made.
<b>very-high-bit-rate digital subscriber line</b>	VDSL. DSL technology providing faster data transmission over short distances, usually between 1000 and 4500 feet (300 and 1500 meters), of twisted pair copper wire. The shorter the distance, the faster the connection rate.
<b>vGW Series</b>	A fault-tolerant service provider and enterprise grade security solution purpose-built for the virtualized environment. vGW Series delivers complete virtualization security for multitenant public and private clouds, and clouds that are a hybrid of the two. It maintains the highest levels of VM host capacity and performance while protecting virtualized environments.
<b>VHO</b>	Video Head Office. In IPTV network architectures, the VHO is an aggregation point for a complex of video servers. Logically, it lies on the content delivery path between the Super Head Office (SHE) and Video Switching Office (VSO). <i>Also known as</i> Video Hub Office, Video Headend Office.
<b>Video Head Office</b>	VHO. In IPTV network architectures, the VHO is an aggregation point for a complex of video servers. Logically, it lies on the content delivery path between the Super Head Office (SHE) and Video Switching Office (VSO). <i>Also known as</i> Video Hub Office, Video Headend Office.
<b>video on demand</b>	VOD. Unicast streaming video offering by service providers that enables the reception of an isolated video session per user with rewind, pause, and similar VCR-like capabilities.
<b>video services router</b>	VSR. Router used in a video services network to route video streams between an access network and a metro or core network. The VSR is any M Series or MX Series router that supports the video routing package provided with Junos OS Release 8.3 or later.
<b>Video Switching Office</b>	VSO. In IPTV network architectures, VSOs are where a collection of aggregation routers aggregate the so-called last-mile connections to the digital home for content delivery, localization of services, and account management. Logically, the VSO lies on the content delivery path between the Video Head Office (VHO) and digital home (end consumer).

<b>VIM resource profile</b>	virtualized infrastructure manager resource profile. Used to manage a repository of Network Functions Virtualization Infrastructure (NFV Infrastructure) hardware resources (compute, storage, and networking) and software resources (hypervisors). The profile is also used to determine capabilities and features for optimizing the hardware and software resources.
<b>virsh</b>	CLI for a common set of Linux tools to manage virtual machines (VMs). <i>See also</i> VM.
<b>virtio</b>	Virtualization standard in which network device drivers and disk drivers in a virtual machine (VM) interact with the hypervisor. This standard is a form of paravirtualization that optimizes network and disk operations for the VM. <i>See also</i> hypervisor, paravirtualization, PCI pass-through.
<b>virtual appliances</b>	Pre-built software solutions designed to run in virtual machines. Virtual appliances are comprised of one or more virtual machines that are packaged, maintained, updated, and managed as a unit. Virtual appliances are more secure and reliable than traditional software. The vGW Security Design VM and the vGW Security VM components are integrated with the VMware <sup>®</sup> infrastructure as virtual appliances.
<b>virtual central processing unit</b>	vCPU, virtual CPU. The virtual form of a physical central processing unit, it helps in the execution of instructions, processing of data, and calculations.
<b>virtual channel</b>	Enables queuing, packet scheduling, and accounting rules to be applied to one or more logical interfaces. <i>See also</i> virtual channel group.
<b>virtual channel connection</b>	VCC. Uses all the addressing bits of a cell header to move traffic from one link to another. The VCC is formed by joining a series of virtual channels, which are logical circuits uniquely identified for each link of the network.
<b>virtual channel group</b>	Combines virtual channels into a group and then applies the group to one or more logical interfaces. <i>See also</i> virtual channel.
<b>virtual channel identifier, virtual circuit identifier</b>	VCI. 16-bit field in the header of an ATM cell that indicates the particular virtual circuit the cell takes through a virtual path. <i>Also known as</i> logical interface. <i>See also</i> VPI.
<b>Virtual Chassis</b>	Interconnected devices functioning as one logical device. Similar to a Virtual Switching System or a stack.
<b>Virtual Circuit Connectivity Verification</b>	VCCV. A protocol used to provide a control channel between the ingress and egress devices of a pseudowire. This control channel can be used to manage the operation of a pseudowire by forwarding and receiving VCCV messages indicating the current status of the pseudowire.
<b>virtual circuit descriptor</b>	VCD. Unique number that identifies a virtual circuit.

<b>virtual circuit, virtual connection</b>	<p>VC.</p> <ul style="list-style-type: none"> <li>• Software-defined logical connection between two network devices that is not a dedicated connection but acts as though it is. It can be either permanent (PVC) or switched (SVC). VCs are used in ATM, Frame Relay, and X.25. <i>See also</i> VPI, VCI, PVC, SVC.</li> <li>• In IDP Series, corresponds with a physical interface.</li> </ul>
<b>virtual CPU</b>	virtual central processing unit, vCPU. The virtual form of a physical central processing unit, it helps in the execution of instructions, processing of data, and calculations.
<b>Virtual Extensible LAN</b>	VXLAN. Network virtualization protocol defined in RFC 7348 for running an overlay network on a Layer 3 infrastructure to connect multiple Layer 2 networks across Layer 3 connections. VXLANs address the scalability issues in large cloud computing deployments caused by the limited number of traditional VLANs. VXLANs use a larger identification field than VLANs. This field theoretically allows the creation of more than 16 million unique VXLANs.
<b>virtual host</b>	Capability of some computers to respond to different IP addresses and offer different services, each appearing to be a distinct host on a distinct machine. A single machine can supply several virtual hosts.
<b>virtual IP address</b>	VIP address maps traffic received at one IP address to another address based on the destination port number in the packet header.
<b>virtual link</b>	In OSPF, link created between two routers that are part of the backbone but are not physically contiguous.
<b>virtual local area network</b>	VLAN. Logical group of network devices that appear to be on the same LAN, regardless of their physical location. VLANs are configured as unique Layer 2 broadcast domains consisting of logical, rather than physical, connections, making them extremely flexible. VLANs allow network administrators to resegment their networks without physically rearranging the devices or network connections. VLANs span one or more ports on multiple devices. By default, each VLAN maintains its own Layer 2 forwarding database containing MAC addresses learned from packets received on ports belonging to the VLAN. <i>See also</i> bridge domain.
<b>virtual loopback tunnel interface</b>	VT. Virtual interface that loops packets back to the Packet Forwarding Engine for further processing, such as looking up a route in a VRF routing table or looking up an Ethernet MAC address. A virtual loopback tunnel interface can be associated with a variety of MPLS- and VPN-related applications, including VRF routing instances, VPLS routing instances, and point-to-multipoint LSPs.
<b>virtual machine</b>	VM. Simulation of a physical machine such as a workstation or a server that runs on a host that supports virtualization. Many VMs can run on the same host, sharing its resources. A VM has its own operating system that can be different from that of other VMs running on the same host. <i>Also known as</i> guest machine.

<b>Virtual Machine Introspection</b>	VMI. The vGW Virtual Gateway feature that gives a user a full view into all applications flowing between VMs and how they are used. VMI carries a complete VM and VM group inventory, including virtual network settings, and provides deep knowledge of each VM state, including installed applications, operating systems, patch levels, and registry values. The vGW Virtual Gateway incorporates VMI as part of its security policy definition and enforcement mechanism.
<b>virtual network</b>	Network that does not consist of physical hardware connections between computing devices; the connections are implemented using methods of network virtualization.
<b>virtual network function</b>	VNF. Network Functions Virtualization (NFV) software component that has well-defined interfaces and provides one or more component networking functions. Each VNF is deployed in its own virtual machine (VM). VNFs can operate on standard x86 servers and can own or share management ports and network interface card (NIC) ports on the physical network device. <i>See also</i> guest network function (GNF).
<b>virtual output queue</b>	VOQ. Collection of input queues (buffers) that receive and store traffic destined for one output queue on one egress port. Each output queue on each egress port has a dedicated VOQ, which consists of all of the input queues that are sending traffic to that output queue.
<b>virtual path</b>	VP. Combination of multiple virtual circuits between two devices in an ATM network.
<b>virtual path connection</b>	VPC. A concatenation of VPIs between Virtual Path Terminators (VPTs). VPCs are unidirectional.
<b>virtual path identifier</b>	VPI. 8-bit field in the header of an ATM cell that indicates the virtual path the cell takes. <i>See also</i> VCI.
<b>Virtual Player</b>	Server-side player provided by Media Flow Controller to assist in media viewing.
<b>virtual private cloud</b>	VPC. On-demand configurable pool of shared computing resources allocated within a public cloud, allowing for isolation between different organizations using the same resources.
<b>virtual private LAN service</b>	VPLS. Ethernet-based multipoint-to-multipoint Layer 2 VPN service used for interconnecting multiple Ethernet LANs across an MPLS backbone. VPLS is specified in the IETF draft <i>Virtual Private LAN Service</i> .
<b>virtual private network</b>	VPN. Uses a public TCP/IP network, typically the Internet, while maintaining privacy with a tunneling protocol, encryption, and security procedures. <i>See also</i> tunneling protocol.
<b>virtual private wire service</b>	VPWS. VPWS Layer 2 VPNs employ Layer 2 services over MPLS to build a topology of point-to-point connections that connect end customer sites in a VPN. Traditional VPNs over Layer 2 circuits require the provisioning and maintenance of separate networks for IP and for VPN services. In contrast, VPWS enables the sharing of a provider's core network infrastructure between IP and Layer 2 VPN services. <i>Also known as</i> Ethernet over MPLS.

<b>virtual router</b>	<p>VR.</p> <ul style="list-style-type: none"> <li>• Multiple distinct logical routers within a single router, which enables service providers to configure multiple, separate, secure routers within a single chassis. Each virtual router has its own separate set of IP interfaces, forwarding table, and instances of routing protocols. Applications for this function include the creation of individual routers dedicated to wholesale customers, corporate virtual private network (VPN) users, or a specific traffic type.</li> <li>• In IDP Series, a pair of virtual circuits, providing a physical path into and out of the appliance.</li> </ul>
<b>virtual router identifier</b>	VRID. Number in the range 1–255 that identifies a VRRP instance.
<b>Virtual Router Redundancy Protocol</b>	VRRP. On Fast Ethernet and Gigabit Ethernet interfaces, enables you to configure virtual default routers.
<b>virtual routing and forwarding instance</b>	VRF instance. In the context of Junos OS, a VRF routing instance is also known as a Layer 3 VPN routing instance. VRF instances are used to provide a Layer 3 routing service to customer sites. A customer's traffic is separated from other traffic by creating a unique routing table for each VRF instance. All customer-edge routers share the same VRF table, allowing them to access the routes to all sites within the customer's network.
<b>virtual security device</b>	VSD. Single logical device comprised of a set of physical security devices.
<b>virtual security interface</b>	VSI. Logical entity at Layer 3 that is linked to multiple Layer 2 physical interfaces in a VSD group. The VSI binds to the physical interface of the device acting as the primary device in the VSD group. The VSI shifts to the physical interface of another device in the VSD group if there is a failover and it becomes the new primary.
<b>virtual server</b>	An interface between the Junos App Balancer and the Internet. A virtual server manages one of your services. It receives a request from the Internet and, possibly after SSL-decrypting it and applying rules, assigns it to a pool.
<b>virtual switch</b>	Routing instance that can contain one or more bridge domains.
<b>virtual tunnel endpoint</b>	VTEP. Device in a physical network that supports Virtual Extensible LAN (VXLAN). VTEPs encapsulate VLAN traffic into VXLAN packets and de-encapsulate that traffic when it leaves the VXLAN tunnel.
<b>virtualization</b>	Technology that abstracts the physical characteristics of a machine, creating a logical version of it, including creating logical versions of entities such as operating systems and various network resources.
<b>virtualized infrastructure manager resource profile</b>	VIM resource profile. Used to manage a repository of Network Functions Virtualization Infrastructure (NFV Infrastructure) hardware resources (compute, storage, and networking) and software resources (hypervisors). The profile is also used to determine capabilities and features for optimizing the hardware and software resources.

<b>VLAN</b>	virtual local area network. Logical group of network devices that appear to be on the same LAN, regardless of their physical location. VLANs are configured as unique Layer 2 broadcast domains consisting of logical, rather than physical, connections, making them extremely flexible. VLANs allow network administrators to resegment their networks without physically rearranging the devices or network connections. VLANs span one or more ports on multiple devices. By default, each VLAN maintains its own Layer 2 forwarding database containing MAC addresses learned from packets received on ports belonging to the VLAN. <i>See also</i> bridge domain.
<b>VLAN ID</b>	Numerical identifier that is inserted into a packet header to identify which VLAN the packet belongs to. The VLAN ID is the VLAN number on interconnecting links between routers, switches, and servers. It follows the 802.1Q standard.
<b>VLAN-tagged frame</b>	Tagged frame whose tag header carries both VLAN identification and priority information.
<b>VM</b>	virtual machine. Simulation of a physical machine such as a workstation or a server that runs on a host that supports virtualization. Many VMs can run on the same host, sharing its resources. A VM has its own operating system that can be different from that of other VMs running on the same host. <i>Also known as</i> guest machine.
<b>VMI</b>	Virtual Machine Introspection. The vGW Virtual Gateway feature that gives a user a full view into all applications flowing between VMs and how they are used. VMI carries a complete VM and VM group inventory, including virtual network settings, and provides deep knowledge of each VM state, including installed applications, operating systems, patch levels, and registry values. The vGW Virtual Gateway incorporates VMI as part of its security policy definition and enforcement mechanism.
<b>vMotion</b>	VMware <sup>®</sup> technology that allows for transition of active, or live, virtual machines from one physical server to another, undetectable to the user, it allows VMware to migrate a "live" VM (that is, a VM that is still running with no downtime), from one ESXi host to another host on a different physical server. vMotion allows for system maintenance on hosts and offers improved performance if greater capacity is available on another host.
<b>VMSafe Firewall</b>	The vGW Virtual Gateway installation mode, formally referred to as VMSafe Firewall + Monitoring, that provides both firewall configuration support and virtual machine monitoring. In this mode, the vGW Virtual Gateway loads a kernel module into the VMware hypervisor on the ESX/ESXi host to be secured and manages it.
<b>VMSafe Firewall + Monitoring</b>	The vGW Virtual Gateway installation mode that provides both firewall configuration support and virtual machine monitoring. In this mode, the vGW Virtual Gateway loads a kernel module into the VMware <sup>®</sup> hypervisor on the ESX/ESXi host to be secured and manages it. This is the default and recommended installation mode. This mode is also referred to as VMSafe Firewall mode.
<b>VMSafe Monitoring</b>	The vGW Virtual Gateway installation mode that is used for monitoring only. This mode is similar to the VMSafe Firewall + Monitoring mode except that no firewall policy is loaded on a VM. This mode allows you to deploy the vGW Virtual Gateway with the assurance that security policies do not block traffic.

<b>VMware vSphere</b>	A VMware cloud operating system that can manage large pools of virtualized computing infrastructure, including software and hardware.
<b>VMware vSphere client</b>	An application or software that administers VMware vSphere.
<b>VNF</b>	virtual network function. Network Functions Virtualization (NFV) software component that has well-defined interfaces and provides one or more component networking functions. Each VNF is deployed in its own virtual machine (VM). VNFs can operate on standard x86 servers and can own or share management ports and network interface card (NIC) ports on the physical network device. <i>See also</i> guest network function (GNF).
<b>vNIC</b>	A virtualized network interface card that connects a VM to a vSwitch. A VM can have multiple vNICs. A vNIC presents the same media access control (MAC) interface that a physical interface provides.
<b>VOD</b>	video on demand. Unicast streaming video offering by service providers that enables the reception of an isolated video session per user with rewind, pause, and similar VCR-like capabilities.
<b>Voice over Internet Protocol</b>	VoIP. Enables people to use the Internet as the transmission medium for telephone calls by sending voice data in packets using the Internet Protocol instead of over traditional telephony circuits.
<b>VoIP</b>	Voice over Internet Protocol. Enables people to use the Internet as the transmission medium for telephone calls by sending voice data in packets using the Internet Protocol instead of over traditional telephony circuits.
<b>VOQ</b>	virtual output queue. Collection of input queues (buffers) that receive and store traffic destined for one output queue on one egress port. Each output queue on each egress port has a dedicated VOQ, which consists of all of the input queues that are sending traffic to that output queue.
<b>VP</b>	virtual path. Combination of multiple virtual circuits between two devices in an ATM network.
<b>VPC</b>	<ul style="list-style-type: none"> <li>virtual path connection. A concatenation of VPIs between Virtual Path Terminators (VPTs). VPCs are unidirectional.</li> <li>virtual private cloud. On-demand configurable pool of shared computing resources allocated within a public cloud, allowing for isolation between different organizations using the same resources.</li> </ul>
<b>VPI</b>	virtual path identifier. 8-bit field in the header of an ATM cell that indicates the virtual path the cell takes. <i>See also</i> VCI.
<b>VPLS</b>	virtual private LAN service. Ethernet-based multipoint-to-multipoint Layer 2 VPN service used for interconnecting multiple Ethernet LANs across an MPLS backbone. VPLS is specified in the IETF draft <i>Virtual Private LAN Service</i> .

<b>VPLS domain</b>	Set of VPLS edge routers running VPLS instances that participate in that domain. Typically associated with customers who want to use Ethernet-based Layer 2 VPNs to connect geographically dispersed sites in their organization across an MPLS-based service provider core, also known as an MPLS backbone. To provide signaling for VPLS, BGP builds a full mesh of label-switched paths (LSPs) among all of the VPLS instances on each of the VPLS edge routers participating in a particular VPLS domain.
<b>VPLS edge device</b>	VE router. Router that is analogous to a provider edge (PE) router in a BGP/MPLS VPN configuration, and performs similar functions.
<b>VPLS instance</b>	New or existing bridge group that has additional VPLS attributes configured. A single VPLS instance is analogous to a distributed learning bridge (also known as a bridge group) used for transparent bridging, and performs similar functions. A bridge group is a collection of bridge interfaces stacked on Ethernet Layer 2 interfaces to form a broadcast domain. Similarly, a VPLS instance is a collection of network interfaces stacked on Ethernet Layer 2 interfaces that transmits packets between the router, or VE device, and the CE device located at the edge of the customer's network. In addition, the VPLS virtual core interface enables a VPLS instance to forward traffic not only between bridge interfaces, like a bridge group, but also between a bridge (network) interface and the service provider core.
<b>VPN</b>	virtual private network. Uses a public TCP/IP network, typically the Internet, while maintaining privacy with a tunneling protocol, encryption, and security procedures. <i>See also</i> tunneling protocol.
<b>VPWS</b>	virtual private wire service. VPWS Layer 2 VPNs employ Layer 2 services over MPLS to build a topology of point-to-point connections that connect end customer sites in a VPN. Traditional VPNs over Layer 2 circuits require the provisioning and maintenance of separate networks for IP and for VPN services. In contrast, VPWS enables the sharing of a provider's core network infrastructure between IP and Layer 2 VPN services. <i>Also known as</i> Ethernet over MPLS.
<b>VR</b>	virtual router. <ul style="list-style-type: none"> <li>• Multiple distinct logical routers within a single router, which enables service providers to configure multiple, separate, secure routers within a single chassis. Each virtual router has its own separate set of IP interfaces, forwarding table, and instances of routing protocols. Applications for this function include the creation of individual routers dedicated to wholesale customers, corporate virtual private network (VPN) users, or a specific traffic type.</li> <li>• In IDP Series, a pair of virtual circuits, providing a physical path into and out of the appliance.</li> </ul>
<b>VRF instance</b>	Virtual routing and forwarding instance. In the context of Junos OS, a VRF routing instance is also known as a Layer 3 VPN routing instance. VRF instances are used to provide a Layer 3 routing service to customer sites. A customer's traffic is separated from other traffic by creating a unique routing table for each VRF instance. All customer-edge routers share the same VRF table, allowing them to access the routes to all sites within the customer's network.
<b>VRF table</b>	Routing instance table that stores VRF routing information. <i>See also</i> VRF instance.



<b>VRID</b>	virtual router identifier. Number in the range 1–255 that identifies a VRRP instance.
<b>VRRP</b>	Virtual Router Redundancy Protocol. On Fast Ethernet and Gigabit Ethernet interfaces, enables you to configure virtual default routers.
<b>VRRP router</b>	Router that is running VRRP. It might participate in one or more virtual router IDs (VRIDs).
<b>VSD</b>	virtual security device. Single logical device comprised of a set of physical security devices.
<b>VSI</b>	virtual security interface. Logical entity at Layer 3 that is linked to multiple Layer 2 physical interfaces in a VSD group. The VSI binds to the physical interface of the device acting as the primary device in the VSD group. The VSI shifts to the physical interface of another device in the VSD group if there is a failover and it becomes the new primary.
<b>VSO</b>	Video Switching Office. In IPTV network architectures, VSOs are where a collection of aggregation routers aggregate the so-called last-mile connections to the digital home for content delivery, localization of services, and account management. Logically, the VSO lies on the content delivery path between the Video Head Office (VHO) and digital home (end consumer).
<b>VSR</b>	video services router. Router used in a video services network to rout video streams between an access network and a metro or core network. The VSR is any M Series or MX Series router that supports the video routing package provided with Junos OS Release 8.3 or later.
<b>vSRX</b>	Virtual security appliance that provides security and networking services in virtualized private or public cloud environments. vSRX runs as a virtual machine (VM) on x86 servers that support virtualization, and it enables advanced security and routing at the network edge in multitenant virtualized environments. Junos OS Release 12.1X47-D20 for vSRX was originally called Firefly Perimeter. <i>See also</i> Firefly Perimeter.
<b>vSwitch</b>	A virtualized switch that resides on a physical server and directs traffic among VMs and their virtualized applications. Network activity between co-located VMs transits it.
<b>VT</b>	virtual loopback tunnel interface. VT interface that loops packets back to the Packet Forwarding Engine for further processing, such as looking up a route in a VRF routing table or looking up an Ethernet MAC address. A virtual loopback tunnel interface can be associated with a variety of MPLS and VPN-related applications, including VRF routing instances, VPLS routing instances, and point-to-multipoint LSPs.
<b>VTEP</b>	virtual tunnel endpoint. Device in a physical network that supports Virtual Extensible LAN (VXLAN). VTEPs encapsulate VLAN traffic into VXLAN packets and de-encapsulate that traffic when it leaves the VXLAN tunnel.

**VXLAN** Virtual Extensible LAN. Network virtualization protocol defined in RFC 7348 for running an overlay network on a Layer 3 infrastructure to connect multiple Layer 2 networks across Layer 3 connections. VXLANs address the scalability issues in large cloud computing deployments caused by the limited number of traditional VLANs. VXLANs use a larger identification field than VLANs. This field theoretically allows the creation of more than 16 million unique VXLANs.

## W

**WAN** wide area network. Computer network that connects LANs and other types of networks together, so that users and computers in one location can communicate with users and computers in other locations, spanning regions, countries, or even the world. *See also* LAN, MAN.

**WAN PHY** Wide Area Network Physical Layer Device. Allows 10-Gigabit Ethernet wide area links to use fiber-optic cables and other devices intended for SONET/SDH. *See also* LAN PHY and PHY.

**WANDL** Software that provides traffic engineering, multilayer optimization, and path computation technology to track the efficiency of the network. *Also known as* IP/MPLSView.

**WAP** Wireless Application Protocol. Enables mobile users to access the Internet in a limited fashion if WAP is supported and enabled on the mobile device, server, and wireless network. WAP users can send and receive e-mail and access websites in text format only (WAP does not support graphics).

**warm restart** Result of a redundant, standby SRP module becoming active when high availability (HA) is configured. The line modules remain enabled, forwarding remains active, and the newly active SRP module recovers dynamic state information from mirrored storage. To avoid route flapping during an SRP warm restart, BGP and other routing protocols typically use graceful restart. *See also* cold restart, graceful restart.

**warm standby** Method that enables one backup Adaptive Services (AS) PIC to support multiple active AS PICs, without providing guaranteed recovery times.

**wavelength-division multiplexing** WDM. Technique for transmitting a mix of voice, data, and video over various wavelengths (colors) of light.

**WCDMA** Wideband Code Division Multiple Access. Radio interface technology used in most third-generation (3G) systems.

**WDM** wavelength-division multiplexing. Technique for transmitting a mix of voice, data, and video over various wavelengths (colors) of light.

**Web filtering** Core part of network security that prevents access to unauthorized websites. Protects the network from malware and other related threats.

**Web Services Description Language** WSDL. XML-based language that defines a Web service by describing the functionality that the service offers.

<b>WebApp Secure</b>	Application that protects websites from would-be attackers, fraud, and theft. It uses deception to detect, track, profile, and block attackers in real time by inserting detection points into a webserver's output to identify attackers before they do damage. It then tracks detected attackers, profiles their behavior, and deploys countermeasures.
<b>weight</b>	<ul style="list-style-type: none"> <li>• In BGP, a preference for a particular route over other routes to a destination. The higher the assigned weight, the more preferred the route. By default, the route weight on E Series routers is 32768 for paths originated by the router, and 0 for other paths.</li> <li>• In QoS, a data unit that specifies the relative weight for queues in the traffic class.</li> </ul>
<b>weighted random early detection</b>	WRED. Congestion avoidance technique that signals end-to-end protocols such as TCP that the router is becoming congested along a particular egress path. The intent is to trigger TCP congestion avoidance in a random set of TCP flows before congestion becomes severe and causes tail dropping on a large number of flows.
<b>weighted round-robin</b>	WRR. Scheme used to decide the queue from which the next packet should be transmitted.
<b>WEP</b>	Wired Equivalent Privacy. Protocol for encrypting data exchanged on wireless networks. Defined in the original IEEE 802.11 standard.
<b>whitelist</b>	See allowlist.
<b>Wi-Fi</b>	Technology that enables electronic devices to transmit and receive data over a wireless network generally in the 2.4 GHz and 5.0 GHz radio bands according to the IEEE 802.11 standard. <i>See also</i> WLAN.
<b>Wi-Fi Protected Access</b>	WPA/WPA2. Successor to WEP, defined in the IEEE 802.11i standard. <i>See also</i> WEP.
<b>wide area network</b>	WAN. Computer network that connects LANs and other types of networks together, so that users and computers in one location can communicate with users and computers in other locations, spanning regions, countries, or even the world. <i>See also</i> LAN, MAN.
<b>Wide Area Network Physical Layer Device</b>	WAN PHY. Allows 10-Gigabit Ethernet wide area links to use fiber-optic cables and other devices intended for SONET/SDH. <i>See also</i> LAN PHY and PHY.
<b>Wideband Code Division Multiple Access</b>	WCDMA. Radio interface technology used in most third-generation (3G) systems.
<b>Windows Internet Name Service</b>	WINS. Windows name resolution service for network basic input/output system (NetBIOS) names. WINS is used by hosts running NetBIOS over TCP/IP (NetBT) to register NetBIOS names and resolve NetBIOS names to Internet Protocol (IP) addresses.
<b>WINS</b>	Windows Internet Name Service. Windows name resolution service for network basic input/output system (NetBIOS) names. WINS is used by hosts running NetBIOS over TCP/IP (NetBT) to register NetBIOS names and resolve NetBIOS names to Internet Protocol (IP) addresses.

<b>Wired Equivalent Privacy (Protocol)</b>	WEP. Encrypts data exchanged on wireless networks. Defined in the original IEEE 802.11 standard.
<b>Wireless Application Protocol</b>	WAP. Enables mobile users to access the Internet in a limited fashion if WAP is supported and enabled on the mobile device, server, and wireless network. WAP users can send and receive e-mail and access websites in text format only (WAP does not support graphics).
<b>wireless local area network</b>	WLAN. Type of LAN in which mobile users can connect to the network through a wireless (radio) connection. The IEEE 802.11 standard specifies the technologies for wireless LANs, including the Wired Equivalent Privacy (WEP) encryption algorithm.
<b>WLAN</b>	wireless local area network. Type of LAN in which mobile users can connect to the network through a wireless (radio) connection. The IEEE 802.11 standard specifies the technologies for wireless LANs, including the Wired Equivalent Privacy (WEP) encryption algorithm.
<b>working interface</b>	Provides the primary connection on modules that have APS/MSP or that otherwise enable redundancy.
<b>worldwide name</b>	64-bit identifier that is similar to a MAC address except that it is not used for forwarding. It uniquely identifies a Fibre Channel device worldwide. It is derived from the IEEE organizationally unique identifier (OUI) and vendor-supplied information.
<b>WPA/WPA2</b>	Wi-Fi Protected Access. Successor to WEP, defined in the IEEE 802.11i standard. <i>See also</i> WEP.
<b>WRED</b>	weighted random early detection. Congestion avoidance technique that signals end-to-end protocols such as TCP that the router is becoming congested along a particular egress path. The intent is to trigger TCP congestion avoidance in a random set of TCP flows before congestion becomes severe and causes tail dropping on a large number of flows.
<b>WRR</b>	weighted round-robin. Scheme used to decide the queue from which the next packet should be transmitted.
<b>WSDL</b>	Web Services Description Language. XML-based language that defines a Web service by describing the functionality that the service offers.
<b>X</b>	
<b>X.21 interface</b>	ITU serial line protocol standard, used primarily in the USA and Japan, for differential communications. Provides synchronous operation between data communication equipment (DCE) and data terminal equipment (DTE) on public data networks (PDNs).

<b>X2 Application Protocol</b>	<p>X2AP. Protocol used by the X2 interface. It is used for handling the user equipment mobility within the Evolved Universal Terrestrial Radio Access Networks (E-UTRAN) and provides the following functions:</p> <ul style="list-style-type: none"> <li>• Manages mobility and load</li> <li>• Reports general error situations</li> <li>• Sets and resets the X2 interface</li> <li>• Updates the eNodeB configuration</li> </ul> <p><i>See also</i> eNodeB.</p>
<b>X2 interface</b>	<p>Point-to-point logical interface between two Evolved Node Bs (eNodeBs) with the Evolved Universal Terrestrial Radio Access Network (E-UTRAN). It supports the exchange of signaling information between two eNodeBs and also supports the forwarding of protocol data units (PDUs) to the respective tunnel endpoints. <i>See also</i> eNodeB.</p>
<b>X2AP</b>	<p>X2 Application Protocol. Protocol used by the X2 interface. It is used for handling the user equipment mobility within the Evolved Universal Terrestrial Radio Access Networks (E-UTRAN) and provides the following functions:</p> <ul style="list-style-type: none"> <li>• Manages mobility and load</li> <li>• Reports general error situations</li> <li>• Sets and resets the X2 interface</li> <li>• Updates the eNodeB configuration</li> </ul> <p><i>See also</i> eNodeB.</p>
<b>XDR</b>	<p>External Data Representation Standard. Standard for the description and encoding of data. XDR can be used to transfer data between computers.</p>
<b>xDSL</b>	<p>Combined term used to refer to ADSL, HDSL, SDSL, and VDSL.</p>
<b>XENPAK Multisource Agreement</b>	<p>Standard that defines a type of pluggable fiber-optic transceiver module that is compatible with the 10-Gigabit Ethernet (10 GbE) standard MSA. <i>See also</i> MSA.</p>
<b>XENPAK, XENPAK module</b>	<p>A pluggable fiber-optic transceiver module that is compatible with the 10-Gigabit Ethernet (10 GbE) standard MSA. XENPAK modules are hot-insertable and hot-removable. <i>See also</i> MSA.</p>
<b>XENPAK-SR 10BASE-SR XENPAK</b>	<p>Media type that supports a link length of 26 meters on standard Fiber Distributed Data Interface (FDDI) grade multimode fiber (MMF). Up to 300-meter link lengths are possible with 2000 MHz/km MMF (OM3).</p>
<b>XENPAK-ZR 10GBASE-ZR XENPAK</b>	<p>Media type used for long-reach, single-mode (80–120 km) 10-Gigabit Ethernet metro applications.</p>

<b>XFP transceiver</b>	10-gigabit small form-factor pluggable (SFP) transceiver that provides support for fiber-optic cables. XFPs are hot-insertable and hot-removable. <i>See also</i> SFP transceiver.
<b>XML</b>	Extensible Markup Language. Used for defining a set of markers, called tags, that define the function and hierarchical relationships of the parts of a document or data set.
<b>XML Path Language</b>	Standard used in XSLT to specify and locate elements in the input document's XML hierarchy. XPath is fully described in the W3C specification at <a href="http://w3c.org/TR/xpath">http://w3c.org/TR/xpath</a> . <i>Also known as</i> XPath.
<b>XML schema</b>	Definition of the elements and structure of one or more Extensible Markup Language (XML) documents. Similar to a document type definition (DTD), but with additional information and written in XML.
<b>XOR</b>	exclusive or. Logical operator (exclusive disjunction) in which the operation yields the result of true when one, and only one, of its operands is true.
<b>XPath</b>	Extensible Markup Language Path. Standard used in XSLT to specify and locate elements in the input document's XML hierarchy. XPath is fully described in the W3C specification at <a href="http://w3c.org/TR/xpath">http://w3c.org/TR/xpath</a> . <i>Also known as</i> XML Path Language.
<b>XPIM</b>	SRX mid-range services gateway network interface card (NIC) that can only be installed in the 20-gigabit GPIM slots (slots 2 and 6 on the front panel). <ul style="list-style-type: none"> <li>• The 24-port GigE XPIM (standard or Power over Ethernet versions) is a double-high, double-wide LAN switch Gigabit-Backplane Physical Interface Module (GPIM) that uses two standard slots vertically and two standard slots horizontally and installs in slots 1, 2, 3, and 4 (connecting in the 20G connector in slot 2) or slots 5, 6, 7, and 8 (connecting in the 20G connector in slot 6).</li> <li>• The 16-port GigE XPIM (standard or Power over Ethernet versions) is a double-high LAN switch GPIM that uses two standard slots vertically and installs in slots 2 and 4 (connecting in the 20G connector in slot 2) or slots 6 and 8 (connecting in the 20G connector in slot 6).</li> </ul>
<b>XSLT</b>	Extensible Stylesheet Language for Transformations. Standard for processing XML data developed by the World Wide Web Consortium (W3C). XSLT performs XML-to-XML transformations, turning an input XML hierarchy into an output XML hierarchy. The XSLT specification is on the W3C website at <a href="http://www.w3c.org/TR/xslt">http://www.w3c.org/TR/xslt</a> .

## Y

<b>YANG</b>	Yet Another Next Generation. Data modeling language used to model configuration and state data, remote procedure calls, and notifications for network management protocols.
<b>Yet Another Next Generation</b>	YANG. Data modeling language used to model configuration and state data, remote procedure calls, and notifications for network management protocols.

## Z

<b>zero-touch provisioning</b>	ZTP. Method of automatically provisioning new Juniper Networks switches in your network. When you physically connect a switch to the network and boot it with the factory-default configuration, ZTP attempts to automatically upgrade Junos OS and install a configuration file from the network.
<b>Zeroconf networking</b>	Zero-Configuration networking. Initially proposed by Apple Inc., technology that automatically configures a network to enable service discovery, address allocations, and IP address resolutions without manual operator intervention or special configuration servers. For example, users can connect to a network to share files, printers, and Internet connections without having to manually configure subnet masks or DNS servers to set up the network. Zeroconf deployment provides such users a simple and reliable way to configure and browse for services over IP networks without their having to know the service name or IP address.
<b>zeroize</b>	Process of removing all sensitive information, such as cryptographic keys and user passwords, from a router running Junos-FIPS.
<b>ZEUSHOME</b>	The location in which you install the Junos App Balancer. The default is <code>/usr/local/zeus</code> for Junos App Balancer, and <code>/opt/zeus</code> for JAB virtual appliances/cloud instances.
<b>zone set</b>	Grouping of two or more zones in a network to regulate and secure the traffic through the security platform running Junos OS.
<b>ZooKeeper</b>	Open-source coordination service for distributed applicants. It allows distributed processes to coordinate with each other through a shared hierarchical namespace.
<b>ZTP</b>	zero-touch provisioning. Method of automatically provisioning new Juniper Networks switches in your network. When you physically connect a switch to the network and boot it with the factory-default configuration, ZTP attempts to automatically upgrade Junos OS and install a configuration file from the network.