

Appendix A

Abbreviations and Acronyms

Abbreviation or Acronym	Term
A	
AAA	authentication, authorization, and accounting
AAAA	authentication, authorization, accounting, and address assignment
AAL	ATM Adaptation Layer
ABR	area border router
AC	alternating current; access concentrator
ACCM	Async Control Character Map
ADSL	asymmetric digital subscriber line
AESA	ATM end system address
AF	assured forwarding
AFI	authority and format identifier
AH	authentication header
AIS	alarm indication signal
AIS-L	alarm indication signal – line
AIS-P	alarm indication signal – path
ALG	application-level gateway
ANSI	American National Standards Institute
API	application programming interface
APS	Automatic Protection Switching
ARP	Address Resolution Protocol
AS	autonomous system; Australia (re standards compliance)
AS boundary router	autonomous system boundary router
ASCII	American Standard Code for Information Interchange
ASIC	application-specific integrated circuit
AS number	autonomous system number
ATM	Asynchronous Transfer Mode
AVP	attribute-value pair

Abbreviation or Acronym	Term
B	
backup DR	backup designated router
BECN	backward explicit congestion notification
BER	bit error rate
BERT	bit error rate test
BFD	Bidirectional Forwarding Detection (protocol)
BGP	Border Gateway Protocol
BMA	broadcast multiaccess
BOOTP	bootstrap protocol
B-RAS	Broadband Remote Access Server
BSD	Berkeley Software Distribution
C	
CA	certificate authority
CAC	call admission control (MPLS); connection admission control (ATM)
CAM	content-addressable memory
CAP	carrierless amplitude phase
CAR	committed access rate
CARS	committed access rate service
CBC	cipher block chaining
CBR	constant bit rate
CC	continuity check
CCITT	International Telegraph and Telephone Consultative Committee
CCP	Compression Control Protocol
CDV	cell delay variation
CDVT	cell delay variation tolerance
CE	customer edge device
CHAP	Challenge Handshake Authentication Protocol
CIDR	classless interdomain routing
CISPR	International Special Committee on Radio Interference
CLACL	classifier control list
CLEC	competitive local exchange carrier
CLI	command-line interface
CLNP	Connectionless Network Protocol
CLNS	Connectionless Network Service
CLP	cell loss priority
CMDA	code division multiple access
CMTS	cable modem termination system
CoA	change of authorization

Abbreviation or Acronym	Term
cOC	channelized optical carrier
COPS	Common Open Policy Service (protocol)
CORBA	Common Object Request Broker Architecture
CoS	class of service
CPE	customer premises equipment
CPU	central processing unit
CRC	cyclic redundancy check
CR-LDP	Constraint-Based Routed Label Distribution Protocol
CR-LSP	constraint-based routed label-switched path
CSNP	complete sequence number PDU (protocol data unit)
CSU	channel service unit
CT1, CT3	channelized T1, T3
CTI	computer telephony integration
CTS	clear to send
CTT	connection traffic table
CUL	agreement between Underwriter Laboratories and Canadian Standards Association for joint product safety approval
D	
DC	direct current
DCC	Data Country Code
DCD	data carrier detect
DCE	data communication equipment
DCM	dynamic configuration manager
DE	discard eligibility
DES; 3DES	Data Encryption Standard; triple DES
DF	don't fragment (bit)
DHCP	Dynamic Host Configuration Protocol
DIS	designated intermediate system
DLCI	data-link connection identifier
DLCMI	data-link connection management interface
DMZ	demilitarized zone
DNIS	dialed number identification service
DNS	Domain Name System
DNS-ALG	Domain Name System – Application Level Gateway
DOCSIS	Data over Cable System Interface Specifications
DoS	denial of service
DPD	dead peer detection
DR	designated router
DS	digital signal; DiffServ

Abbreviation or Acronym	Term
DS-BGP	dual-stack Border Gateway Protocol
DSI	dynamic subscriber interface
DSL	digital subscriber line
DSLAM	digital subscriber line access multiplexer
DSP	domain-specific part
DSR	data set ready
DSS	Digital Signature Standard
DST	Daylight Saving Time
DSU	data service unit
DTE	data terminal equipment
DTR	data terminal ready
DU	downstream unsolicited
DVMRP	Distance Vector Multicast Routing Protocol
DXI	data exchange interface (abbreviation pronounced “dixie”)
E	
EAP	Extensible Authentication Protocol
EBGP	external Border Gateway Protocol
ECC	error checking and correction; error-checking code
ECMP	equal-cost multipath
ECP	Encryption Control Protocol
EEPROM	electrically erasable programmable read-only memory
EF	expedited forwarding
EFA	egress forwarding ASIC
EGP	exterior gateway protocol
E-LSP	EXP-inferred-PSC LSP
EN	European Norm
EPD	early packet discard
ES	end system
ESD	electrostatic discharge
ESF	extended superframe
ESI	end system identifier
ESP	Encapsulating Security Payload
EXP	experimental (refers to bits in MPLS shim header)
F	
FAT	file allocation table
FCC	Federal Communications Commission
FCS	frame check sequence
FDL	facilities data link

Abbreviation or Acronym	Term
FE	Fast Ethernet
FE-2	dual-port Fast Ethernet
FEC	forwarding equivalence class (abbreviation pronounced “feck”)
FECN	forward explicit congestion notification
FERF	far-end receive failure
FFA	frame forwarding ASIC
FIB	forwarding information base
FIFO	first-in, first-out
FIN	finish (bit)
FPGA	field programmable gate array
FQDN	fully qualified domain name
FRU	field-replaceable unit
FSM	finite state machine
FTE	forwarding table entry
FTP	File Transfer Protocol
G	
Gbps	gigabits per second
GE	Gigabit Ethernet
giaddr	gateway IP address
GRE	Generic Routing Encapsulation
GRxx	(refers to Bellcore standards)
GUI	graphical user interface
H	
HAR	hierarchical assured rate
HDLC	High-Level Data Link Control; High-Speed Data Link Control
HMAC	Hashed Message Authentication Code
HO-DSP	high-order domain-specific part
HRR	hierarchical round-robin
HSSI	high-speed serial interface (abbreviation pronounced “hissy”)
I	
I/O	input/output
IANA	Internet Assigned Numbers Authority
IAPP	Inter Access Point Protocol
IBGP	internal Border Gateway Protocol
IC CS	Industry Canada Communications Section
ICD	International Code Designator
ICMP	Internet Control Message Protocol
ICRQ	incoming-call request

Abbreviation or Acronym	Term
ID	identification; identifying; identifier
I-DAS	integrated DHCP access server
IDI	initial domain identifier
IDP	initial domain part
ISDL	ISDN digital subscriber line
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
IGMP	Internet Group Management Protocol
IGP	interior gateway protocol
IIF	incoming interface
IKE	Internet Key Exchange
ILEC	incumbent local exchange carrier
ILMI	Integrated Local Management Interface
InARP	Inverse Address Resolution Protocol
IOA	input/output adapter
IP	Internet Protocol
IPCP	Internet Protocol Control Protocol
IPoA	Internet Protocol over Asynchronous Transfer Mode
IPSec	Internet Protocol Security
IRDP	ICMP Router Discovery Protocol
ISAKMP	Internet Security Association and Key Management Protocol
ISDN	Integrated Services Digital Network
IS-IS	Intermediate System-to-Intermediate System
ISM	IPSec Service module
ISO	International Organization for Standardization
ISP	Internet service provider
IS Voice	Intelligent Service Voice application
ITU-T	International Telecommunication Union – Telecommunication Standardization
J	
JATE	Japan Approvals Institute for Telecommunications Terminal Equipment
JDBC	Java Database Connectivity
K	
KB	kilobyte(s)
Kbps	kilobits per second
L	
L2TP	Layer 2 Tunneling Protocol
LAC	L2TP access concentrator

Abbreviation or Acronym	Term
LAG	link aggregation group
LAN	local area network
LCP	Link Control Protocol
LDAP	Lightweight Directory Access Protocol
LDP	Label Distribution Protocol
LED	light-emitting diode
LER	label edge router
LIB	label information base
LIP	Link Integrity Protocol
LLC	logical link control
L-LSP	label-only-inferred-PSC LSP
LMI	local management interface; link management interface
LNS	L2TP network server
LOF	loss of frame
LOP	loss of pointer
LOS	loss of signal
LSA	link-state advertisement
LSDB	link-state database
LSP	label-switched path; link-state PDU; link-state protocol
LSR	label-switching router
M	
MAC	media access control; Message Authentication Code
MAU	medium attachment unit
MB	megabyte(s)
MBGP	multicast Border Gateway Protocol
MBone	multicast backbone
Mbps	megabits per second
MBS	maximum burst size
MD5	Message Digest 5
MDL	maintenance data link
MDx	Message Digest x (hash algorithm)
MED	multiple exit discriminator
MGTM	multicast group table manager
MIB	Management Information Base
MLFR	Multilink Frame Relay
MLPPP	Multilink Point-to-Point Protocol
motd	message of the day
MOTM	message of the minute

Abbreviation or Acronym	Term
MP-BGP	Border Gateway Protocol multiprotocol extensions (sometimes referred to as multiprotocol Border Gateway Protocol)
MPLS	Multiprotocol Label Switching
mrinfo	multicast router information
MRRU	multilink maximum received reconstructed unit
MRU	maximum receive unit
MSDP	Multicast Source Discovery Protocol
MSO	multiple service operator
MSP	Multiplex Section Protection
MSS	maximum segment size
MTU	maximum transmission unit; multitenant unit
N	
NAK	negative acknowledgment
NAPT	Network Address Port Translation
NAS	network access server
NAT	Network Address Translation
NBMA	nonbroadcast multiaccess
NCP	Network Control Protocol
ND	Neighbor Discovery
NEBS	Network Equipment Building System
NET	network entity title
NLRI	network layer reachability information
NMC	Network Management Center
NMS	network management system
NNI	network-to-network interface
NRZ	nonreturn to zero
NRZI	nonreturn to zero inverted
NSAP	network service access point
NSF	nonstop forwarding
NSSA	not-so-stubby area (refers to OSPF routing)
NTP	Network Time Protocol
NVRAM	nonvolatile random-access memory
NVS	nonvolatile storage
O	
OAM	operations, administration, and management
OC	optical carrier
ODBC	Open Database Connectivity
OID	object identifier
OIF	outgoing interface

Abbreviation or Acronym	Term
ORF	outbound route filter; outbound route filtering
OSI	Open Systems Interconnection
OSINLCP	OSI Internet Link Control Protocol; OSI Network Layer Control Protocol
OSPF	Open Shortest Path First
OSS	operations support system
P	
P	provider core router
PADI	PPPoE Active Discovery Initiation
PADM	PPPoE Active Discovery Message
PADN	PPPoE Active Discovery Network
PADO	PPPoE Active Discovery Offer
PADR	PPPoE Active Discovery Request
PADS	PPPoE Active Discovery Session
PADT	PPPoE Active Discovery Termination
PAP	Password Authentication Protocol
PBX	private branch exchange
PCMCIA	Personal Computer Memory Card International Association
PCR	peak cell rate
PDU	protocol data unit
PE	provider edge router
PFC	Protocol Field Compression
PFS	perfect forward secrecy
PHB	per-hop behavior
PHP	penultimate hop pop
PIB	Policy Information Base
PIM	Protocol Independent Multicast; power input module
PIM DM	Protocol Independent Multicast dense mode
PIM S-DM	Protocol Independent Multicast sparse-dense mode
PIM SM	Protocol Independent Multicast sparse mode
PIM SSM	Protocol Independent Multicast source-specific multicast
PKI	public key infrastructure
PLCP	physical layer convergence procedure
PM	policy manager
PNNI	private network-to-network interface
POP	point of presence
POS	packet over SONET
POST	power-on self-test
PPP	Point-to-Point Protocol

Abbreviation or Acronym	Term
PPPoE	Point-to-Point Protocol over Ethernet
pps	packets per second
PROM	programmable read-only memory
PSC	per-hop scheduling class
PSNP	partial sequence number PDU (protocol data unit)
PVC	permanent virtual circuit (or connection)
Q	
QoS	quality of service
R	
RADIUS	Remote Authentication Dial-In User Service
RD	route distinguisher
RDBS	relational database system
RDI	remote defect indication
RED	random early detection
REI	remote error indication
RESV	reservation
RFC	Request for Comments
RIB	routing information base
RIP	Routing Information Protocol
RISC	reduced instruction set computing
RMI	Remote Method Invocation (Java)
RP	rendezvous point (router)
RPF	reverse-path forwarding
RSA	Rivest-Shamir-Adleman (encryption algorithm)
RSVP	Resource Reservation Protocol
RSVP-TE	Resource Reservation Protocol with traffic engineering extensions
RTM	resource threshold monitor
RTR	Response Time Reporter
RTSP	Real-Time Streaming Protocol
RWS	receive window size
RX	receive
S	
SA	security association
SAFI	subsequent address family identifier
SAR	segmentation and reassembly
SC	system controller
SCCRQ	Start-Control-Connection-Request
SCEP	Simple Certificate Enrollment Protocol

Abbreviation or Acronym	Term
SCR	sustained cell rate
SCSI	small computer system interface (abbreviation pronounced “scuzzy”)
SDH	Synchronous Digital Hierarchy
SDRAM	synchronous dynamic random access memory
SDSL	symmetric digital subscriber line
SDU	service data unit
SDX	Service Deployment System (formerly SSC)
SEF	severely errored framing
SES	severely errored second
SFP	small form-factor pluggable transceiver
(S,G)	source (S) of the multicast packet and the destination multicast group address (G)
SHA	Secure Hash Algorithm
SIP	SMDS Interface Protocol
SLA	service level agreement
SLARP	Serial Line Address Resolution Protocol
SM	Service line module
SMF	single-mode fiber
SMM	switch management module
SNAP	Subnetwork Access Protocol; subnetwork attachment point
SNI	SMDS network interface
SNMP	Simple Network Management Protocol
SNPA	subnet point of attachment
SNTP	Simple Network Time Protocol
SODIMM	small outline dual inline memory module
SONET	Synchronous Optical Network
SPD	security policy database
SPF	shortest path first
SPI	security parameter index
SPQ	strict-priority queues
SPVC	soft permanent virtual circuit
SQL	Structured Query Language
SRP	switch route processor
SRT	source-rooted tree
SSC	Service Selection Center (no longer used; <i>see</i> SDX)
SSH	Secure Shell
SSN	short sequence number
STM	Synchronous Transport module
SVC	switched virtual circuit

Abbreviation or Acronym	Term
S-VLAN	stacked virtual local area network
SYN	synchronize (bit)
T	
TAC	Technical Assistance Center
TACACS	Terminal Access Controller Access Control System
TC	transmission convergence
TCP	Transmission Control Protocol
TE	traffic engineering
TFTP	Trivial File Transfer Protocol
TIP	terminal interface processor
TLV	type-length-value
ToS	type of service
TPID	Tag Protocol Identifier
TSM	Tunnel Service line module
TTL	time-to-live
TU	tributary unit
TUG	tributary unit group
TX	transmit
U	
U	unit of measurement for rack-mounted equipment (a U is 1.75 in., or 4.44 cm)
UBR	unspecified bit rate
UDP	User Datagram Protocol
UI	user interface
UL	Underwriter Laboratories
UMTS	universal mobile telecommunications system
UNI	user-network interface (ATM usage); user-to-network interface
UPC	user parameter control
URL	Uniform Resource Locator
USM	user-based security model
UTC	Coordinated Universal Time
V	
VAC	volts alternating current
VBR	variable bit rate
VBR-NRT	variable bit rate, non-real time
VBR-RT	variable bit rate, real time
VC	virtual circuit (or connection)
VCC	virtual channel connection
VCCI	Voluntary Control Council for Interference

Abbreviation or Acronym	Term
VCD	virtual circuit descriptor
VCI	virtual channel identifier
VDC	volts direct current
VDSL	very-high-bit-rate digital subscriber line
VLAN	virtual local area network
VoIP	voice over Internet Protocol
VOQL	virtual output queue length
VP	virtual path
VPC	virtual path connection
VPI	virtual path identifier
VPN	virtual private network
VR	virtual router
VRF	VPN routing and forwarding instance
VRID	virtual router identifier
VRRP	Virtual Router Redundancy Protocol
VSA	vendor-specific attribute (RADIUS)
VT	virtual tributary
VTs	VPN Tunnel Server
vty	virtual terminal
W	
WAN	wide area network
WAP	wireless access point
WEP	Wired Equivalent Privacy
WFQ	weighted fair queuing
WINS	Windows Internet Name Service (Microsoft)
WLAN	wireless local area network
WLL	wireless local loop
WRED	weighted random early detection
WRR	weighted round-robin
X	
xDSL	combined term used to refer to ADSL, HDSL, SDSL, and VDSL
XFP	10-gigabit small form-factor pluggable transceiver

