

Chapter 6

RADIUS Attribute Descriptions

This chapter lists the RADIUS attributes that are supported by JUNOS software. Table 46 describes the supported RADIUS IETF attributes. Table 47 describes the supported Juniper Networks vendor-specific attributes (VSAs). Table 48 describes the DSL Forum VSA formats supported by JUNOS software. Table 49 describes RADIUS attributes that are simply passed to their destination by the router.

RADIUS attributes are discussed in the following sections:

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- Juniper Networks VSAs on page 217
- DSL Forum VSAs on page 225
- Pass Through RADIUS Attributes on page 226
- References on page 226

RADIUS IETF Attributes

Table 46 describes the RADIUS IETF attributes supported by JUNOS software. The attributes are sorted by standard number.

Table 46: RADIUS IETF Attributes Supported by JUNOS Software

Attribute Number	Attribute Name	Description
[1]	User-Name	<ul style="list-style-type: none"> ■ Name of user to be authenticated ■ Configurable username override
[2]	User-Password	<ul style="list-style-type: none"> ■ Password of user to be authenticated ■ Configurable password override ■ Password Authentication Protocol (PAP)
[3]	CHAP-Password	Response value provided by a Point-to-Point Protocol (PPP) Challenge Handshake Authorization Protocol (CHAP) user in the response to an access challenge
[4]	NAS-IP-Address	<ul style="list-style-type: none"> ■ IP address of the network access server (NAS) that is requesting authentication of the user ■ You can use the radius update-source-addr command to override this behavior; see <i>Chapter 1, Configuring Remote Access</i>.
[5]	NAS-Port	<ul style="list-style-type: none"> ■ Physical port number of the NAS that is authenticating the user ■ See the radius nas-port-format, radius pppoe nas-port-format unique, and radius vlan nas-port-format stacked commands in <i>Chapter 3, Configuring RADIUS Attributes</i>.
[6]	Service-Type	<ul style="list-style-type: none"> ■ Type of service the user has requested or the type of service to be provided ■ Admin, Login, NAS Prompt, or Framed only
[7]	Framed-Protocol	<ul style="list-style-type: none"> ■ Framing protocol used for framed access ■ Standard value of 1 set for PPP ■ Nonstandard value of 1008 set for dynamic ATM
[8]	Framed-IP-Address	<ul style="list-style-type: none"> ■ IP address to be configured for the user ■ 0.0.0.0 or absence is interpreted as 255.255.255.254 ■ See the radius include framed-ip-add acct-start command in <i>Chapter 3, Configuring RADIUS Attributes</i>.
[9]	Framed-IP-Netmask	<ul style="list-style-type: none"> ■ IP network to be configured for the user when the user is a router to a network ■ Absence implies 255.255.255.255
[11]	Filter-Id	<ul style="list-style-type: none"> ■ Name of the filter list for the user ■ Interpreted as input policy name
[12]	Framed-MTU	<ul style="list-style-type: none"> ■ The maximum transmission unit to be configured for the user, when it is not negotiated by some other means (such as PPP). ■ When sent in an Access-Request with an EAP-Message, indicates the maximum size of the EAP-Message string that the external server supports.
[13]	Framed-Compression	Always set to none.
[18]	Reply-Message	<ul style="list-style-type: none"> ■ Text that may be displayed to the user ■ Only the first instance of this attribute is used

Table 46: RADIUS IETF Attributes Supported by JUNOS Software (continued)

Attribute Number	Attribute Name	Description
[22]	Framed-Route	String that provides routing information to be configured for the user on the NAS; in the format: < addr > [/ < maskLen >] [< nexthop > [< cost >]] [tag < tagValue >] [distance < distValue >]
[24]	State	<ul style="list-style-type: none"> ■ An arbitrary value that the router includes in new Access-Request packets from the previous Accept-Challenge ■ Applicable for CLI, telnet, or EAP message exchange
[25]	Class	An arbitrary value that the NAS includes in all accounting packets for the user if supplied by the RADIUS server
[26]	Vendor-Specific	Juniper Networks Enterprise number 0x0000130A
[27]	Session-Timeout	Maximum number of consecutive seconds of service to be provided to the user before termination of the session
[28]	Idle-Timeout	Maximum number of consecutive seconds of idle connection provided to the user before termination of the session
[30]	Called-Station-Id	<ul style="list-style-type: none"> ■ Allows the NAS to send the phone number that the user called ■ Not supported for nontunneled or LAC session side ■ For the LNS, the format is the string passed in the Called Number AVP ■ For RADIUS relay server, indicates the subscriber's wireless access point
[31]	Calling-Station-Id	<ul style="list-style-type: none"> ■ Allows the NAS to send the phone number from which the call originated ■ See the radius calling-station-format and the radius calling-station-delimiter commands in <i>Chapter 3, Configuring RADIUS Attributes</i>. ■ For RADIUS relay server, indicates the subscriber's MAC address
[32]	NAS-Identifier	<ul style="list-style-type: none"> ■ Identifies the NAS originating the request ■ System-wide configurable hostname or VR-sensitive configurable NAS-identifier name
[33]	Proxy-State	E-series router's port ID and IP address
[40]	Acct-Status-Type	Indicates whether this Accounting-Request marks the beginning of the user service (Start), the end (Stop), or the interim (Interim-Update)
[41]	Acct-Delay-Time	Indicates how many seconds the client has been trying to send a particular record
[42]	Acct-Input-Octets	<ul style="list-style-type: none"> ■ Indicates how many octets have been received from the port during the time this service has been provided ■ IP subscriber manager—Statistics are reported ■ PPP—Statistics are counted according to the rules of the generic interface MIB
[43]	Acct-Output-Octets	<ul style="list-style-type: none"> ■ Indicates how many octets have been sent to the port during the time this service has been provided ■ IP subscriber manager—Statistics are reported ■ PPP—Statistics are counted according to the rules of the generic interface MIB

Table 46: RADIUS IETF Attributes Supported by JUNOS Software (continued)

Attribute Number	Attribute Name	Description
[44]	Acct-Session-Id	<ul style="list-style-type: none"> ■ Unique accounting identifier that makes it easy to match start and stop records in a log file ■ See the radius acct-session-id-format and the radius include acct-session-id access-request commands in <i>Chapter 3, Configuring RADIUS Attributes</i>.
[45]	Acct-Authentic	<ul style="list-style-type: none"> ■ Indicates how the user was authenticated: whether by RADIUS, the NAS itself, or another remote authentication protocol ■ Always 1
[46]	Acct-Session-Time	Indicates how long in seconds that the user has received service
[47]	Acct-Input-Packets	<ul style="list-style-type: none"> ■ Indicates how many packets have been received from the port during the time this service has been provided to a framed user ■ IP subscriber manager—Statistics are reported ■ PPP—Statistics are counted according to the rules of the generic interface MIB
[48]	Acct-Output-Packets	<ul style="list-style-type: none"> ■ Indicates how many packets have been sent to the port in the course of delivering this service to a framed user ■ IP subscriber manager—Statistics are reported ■ PPP—Statistics are counted according to the rules of the generic interface MIB
[49]	Acct-Terminate-Cause	<p>Contains the reason the service (a PPP session) was terminated. The service can be terminated for the following reasons:</p> <ul style="list-style-type: none"> ■ User Request (1)—User initiated the disconnect (log out) ■ Idle Timeout (4)—Idle timer has expired ■ Session Timeout (5)—Client reached the maximum continuous time allowed on the service or session ■ Admin Reset (6)—System administrator terminated the session ■ Port Error (8)—PVC failed; no hardware or no interface ■ NAS Error (9)—Negotiation failures, connection failures, or address lease expiration ■ NAS Request (10)—PPP challenge timeout, PPP request timeout, tunnel establishment failure, PPP bundle failure, IP address lease expiration, PPP keep-alive failure, Tunnel disconnect, or an unaccounted-for error
[50]	Acct-Multi-Session-Id	<ul style="list-style-type: none"> ■ String constructed from the Acct-Session-ID of the first PPP link established for the Multilink PPP bundle and the internal Multilink PPP bundle ID. ■ This string is the hexadecimal ASCII characters for two 4-octet unsigned integers. Example: 0a34331200001249.
[51]	Acct-Link-Count	A value that increments with each link that joins the MLPPP bundle. This attribute does not indicate the number of active links. For more details, see <i>RFC 2866—RADIUS Accounting (June 2000)</i> .
[52]	Acct-Input-Gigawords	<ul style="list-style-type: none"> ■ Indicates how many times the Acct-Input-Octets counter has wrapped around 2³² during the time this service has been provided, and can be present in Accounting-Request records only where the Acct-Status-Type is set to Stop or Interim-Update ■ IP subscriber manager—Statistics are reported ■ PPP—Statistics are counted according to the rules of the generic interface MIB

Table 46: RADIUS IETF Attributes Supported by JUNOS Software (continued)

Attribute Number	Attribute Name	Description
[53]	Acct-Output-Gigawords	<ul style="list-style-type: none"> ■ Indicates how many times the Acct-Output-Octets counter has wrapped around 2³² in the course of delivering this service, and can be present in Accounting-Request records only where the Acct-Status-Type is set to Stop or Interim-Update ■ IP subscriber manager—Statistics are reported ■ PPP—Statistics are counted according to the rules of the generic interface MIB
[55]	Event-Timestamp	Records the time that this event occurred on the NAS, in seconds, since January 1, 1970 00:00 UTC
[60]	CHAP-Challenge	Contains the CHAP challenge sent by the NAS to a PPP CHAP user
[61]	NAS-Port-Type	<ul style="list-style-type: none"> ■ Indicates the type of physical port the NAS is using to authenticate the user ■ See the radius dsl-port-type and the radius ethernet-port-type commands in <i>Chapter 3, Configuring RADIUS Attributes</i>.
[62]	Port-Limit	Specifies the maximum number of MLPPP member links allowed for the subscriber
[64]	Tunnel-Type	<ul style="list-style-type: none"> ■ Which tunneling protocol to use (in the case of a tunnel initiator) or the tunneling protocol in use (in the case of a tunnel terminator) ■ Only L2TP tunnels supported at this time
[65]	Tunnel-Medium-Type	<ul style="list-style-type: none"> ■ Transport medium to use when creating a tunnel for those protocols (such as L2TP) that can operate over multiple transports ■ Only IPv4 supported at this time
[66]	Tunnel-Client-Endpoint	Address of the initiator end of the tunnel
[67]	Tunnel-Server-Endpoint	Address of the server end of the tunnel
[68]	Acct-Tunnel-Connection	<ul style="list-style-type: none"> ■ Indicates the identifier assigned to the tunnel session ■ Value is L2TP call-serial number
[69]	Tunnel-Password	Password to be used to authenticate to a remote server
[77]	Connect-Info	Sent from the NAS to indicate the nature of the user's connection
[79]	EAP-Message	Encapsulates EAP packets, which allows the NAS to authenticate users through EAP without having to understand the EAP protocol
[80]	Message-Authenticator	Must be used in any Access-Request, Access-Accept, Access-Reject or Access-Challenge messages that include EAP-Message attributes
[82]	Tunnel-Assignment-Id	Indicates to the tunnel initiator the particular tunnel to which a session is to be assigned
[83]	Tunnel-Preference	<ul style="list-style-type: none"> ■ If more than one set of tunneling attributes is returned by the RADIUS server to the tunnel initiator, this attribute is included in each set to indicate the relative preference assigned to each tunnel. ■ Included in the Tunnel-Link-Start, the Tunnel-Link-Reject, and the Tunnel-Link-Stop packets (LAC only)
[85]	Acct-Interim-Interval	Number of seconds between each interim accounting update for this session
[86]	Acct-Tunnel-Packets-Lost	Number of packets lost on a given link

Table 46: RADIUS IETF Attributes Supported by JUNOS Software (continued)

Attribute Number	Attribute Name	Description
[87]	NAS-Port-Id	<ul style="list-style-type: none"> ■ Text string that identifies the physical interface of the NAS that is authenticating the user ■ If the PPP user connects via ATM slot 12, port 2, subinterface 3, vpi 100, vci 101, then the NAS-Port-Id value in the RADIUS packets will be atm 12/2.3:100.101 ■ If the user is a PPP user that started as a result of the E-series LNS feature (that is, no physical port), then the NAS-Port-Id value is as follows: <i>media:local address:peer address:local tunnel id:peer tunnel id:local session id:peer session id:call serial number</i> <ul style="list-style-type: none"> ■ For example: ip:172.81.1.98:172.81.1.99:18d:cb8:ce6:9f4:6 ■ In this case, the local information refers to the LNS, and the peer information refers to the LAC ■ NAS-Port-Id usually contains one of the following: <ul style="list-style-type: none"> ■ atm < slot > / < port > < .subinterface > : < vpi > . < vci > ■ FastEthernet < slot > / < port > < .subinterface > [: < vlan >] ■ GigabitEthernet < slot > / < port > < .subinterface > [< vlan >] ■ serial < slot > / < port > [: < sonetPath > [/ < sonetTributary (x/x/x) > [/ < fractionalInterface >]]] ■ from LNS—ip:local ip:peer ip:local tid:peer tid:local sid:peer sid:call serial number tid—tunnel id sid—session id <p>NOTE: Releases before 4.0.0 did not pass the subinterface number to RADIUS for inclusion in the NAS-Port-Id. If you do not want the subinterface number to be included, you must enter the aaa intf-desc-format include sub-intf disable command to omit the subinterface.</p>
[88]	Framed-Pool	Name of an assigned address pool that should be used to assign an address for the user
[90]	Tunnel-Client-Auth-Id	Name used by the tunnel initiator during the authentication phase of tunnel establishment
[91]	Tunnel-Server-Auth-Id	Name used by the tunnel terminator during the authentication phase of tunnel establishment
[96]	Framed-Interface-Id	IPv6 interface identifier configured by the user
[97]	Framed-Ipv6-Prefix	Provides the IPv6 prefix that is delegated to a downstream CPE
[99]	Framed-Ipv6-Route	Provides routing information to be configured for the user on the NAS
[101]	Error-Cause	4-octet field that contains an integer that specifies the cause of the error
[135]	Ascend-Primary-DNS	<ul style="list-style-type: none"> ■ Indicates the IP address of the primary DNS ■ The format is 1 byte of type (135), 1 byte of length (length = 6), 4 bytes of value (IPv4 address)
[136]	Ascend-Secondary-DNS	<ul style="list-style-type: none"> ■ Indicates the IP address of the secondary DNS ■ The format is 1 byte of type (136), 1 byte of length (length = 6), 4 bytes of value (IPv4 address)
[188]	Ascend-Num-In-Multilink	Current number of links in a multilink bundle
[242]	Ascend-Data-Filter	RADIUS policy definitions used to configure a policy to classify packet flows and perform filter, forward, packet marking, rate-limit profile, and traffic class actions

Juniper Networks VSAs

Table 47 lists Juniper Networks VSA formats for RADIUS. JUNOS software uses the vendor ID assigned to Juniper Networks (vendor ID 4874) by the Internet Assigned Numbers Authority (IANA).

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-1]	Virtual-Router	<ul style="list-style-type: none"> Virtual router name for the Broadband Remote Access Server (B-RAS) user's IP interface. Allowed only from RADIUS server in default virtual router context. For restricted users, specifies the only virtual router that the user can access. For nonrestricted users, specifies the initial virtual router that the user accesses. See the enable command in <i>JUNOS System Basics Configuration Guide, Chapter 9, Passwords and Security</i>. 	len	sublen	string: virtual-router-name
[26-2]	Local-Address-Pool	<ul style="list-style-type: none"> Name of an assigned address pool that should be used to assign an address for the user Same as RADIUS attribute 88, Framed-Pool 	len	sublen	string: address-pool-name
[26-3]	Local-Interface	Interface to apply to the E-series side of the connection	len	sublen	string: local-interface
[26-4]	Primary-DNS	<ul style="list-style-type: none"> B-RAS user's DNS address negotiated during IPCP 4-octet IP address 	12	6	integer: 4-byte primary-dns-address
[26-5]	Secondary-DNS	<ul style="list-style-type: none"> B-RAS user's DNS address negotiated during IPCP 4-octet IP address 	12	6	integer: 4-byte secondary-dns-addresses
[26-6]	Primary-WINS (NBNS)	<ul style="list-style-type: none"> B-RAS user's WINS (NBNS) address negotiated during IPCP 4-octet IP address 	12	6	integer: 4-byte primary-wins-address
[26-7]	Secondary-WINS (NBNS)	<ul style="list-style-type: none"> B-RAS user's WINS (NBNS) address negotiated during IPCP 4-octet IP address 	12	6	integer: 4-byte secondary-wins-address
[26-8]	Tunnel-Virtual-Router	Virtual router name for tunnel connection	len	sublen	string: tunnel-virtual-router
[26-9]	Tunnel-Password	Tunnel password in cleartext	len	sublen	string: tunnel-password
[26-10]	Ingress-Policy-Name	Input policy name to apply to B-RAS user's interface	len	sublen	string: input-policy-name
[26-11]	Egress-Policy-Name	Output policy name to apply to B-RAS user's interface	len	sublen	string: output-policy-name

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-12]	Ingress-Statistics	Enable or disable input statistics on B-RAS user's interface	12	6	integer: 0 = disable, 1 = enable
[26-13]	Egress-Statistics	Enable or disable output statistics on B-RAS user's interface	12	6	integer: 0 = disable, 1 = enable
[26-14]	Service-Category	ATM service category to apply to B-RAS user's interface	12	6	integer: 1 = UBR, 2 = UBR PCR, 3 = NRT VBR, 4 = CBR, 5 = RT VBR,
[26-15]	PCR	<ul style="list-style-type: none"> ■ Peak cell rate ■ 4-octet integer 	12	6	integer: 4-octet
[26-16]	SCR	<ul style="list-style-type: none"> ■ Sustained cell rate ■ 4-octet integer 	12	6	integer: 4-octet
[26-17]	Mbs	<ul style="list-style-type: none"> ■ Maximum burst rate ■ 4-octet integer 	12	6	integer: 4-octet
[26-18]	Init-CLI-Access-Level	<ul style="list-style-type: none"> ■ Specifies the initial level of access to CLI commands ■ See the enable command in <i>JUNOS System Basics Configuration Guide, Chapter 9, Passwords and Security</i>. 	len	sublen	single attribute: enter 0, 1, 5, 10, or 15
[26-19]	Allow-All-VR-Access	<ul style="list-style-type: none"> ■ Specifies user access to all virtual routers ■ See the enable command in <i>JUNOS System Basics Configuration Guide, Chapter 9, Passwords and Security</i>. 	len	sublen	integer: 0 = disable, 1 = enable
[26-20]	Alt-CLI-Access-Level	<ul style="list-style-type: none"> ■ Specifies other levels of access to CLI commands ■ See the enable command in <i>JUNOS System Basics Configuration Guide, Chapter 9, Passwords and Security</i>. 	len	sublen	single attribute; enter 0, 1, 5, 10, or 15
[26-21]	Alt-CLI-Vrouter-Name	<ul style="list-style-type: none"> ■ For restricted users, specifies other VRs that the user may access. ■ See the enable command in <i>JUNOS System Basics Configuration Guide, Chapter 9, Passwords and Security</i>. 	len	sublen	string: virtual-router-name
[26-22]	Sa-Validate	<ul style="list-style-type: none"> ■ Enable or disable source address validation on a user's interface ■ 4-octet integer 	len	sublen	integer: 0 = disable, 1 = enable
[26-23]	Igmp-Enable	<ul style="list-style-type: none"> ■ Enable or disable IGMP on a user's interface ■ Allows the end user to register for the reception of multicast services ■ 4-octet integer 	len	sublen	integer: 0 = disable, 1 = enable
[26-24]	Pppoe-Description	The string <i>pppoe <mac addr></i> sent to the RADIUS server supplied by PPPoE	len	sublen	string: pppoe <mac addr>

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-25]	Redirect-Vrouter-Name	<ul style="list-style-type: none"> Virtual router name indicating the VR context in which to authenticate the user Behavior is similar to that of a remote domain-map lookup. 	len	sublen	authentication-redirection
[26-26]	QoS-Profile-Name	Name of the QoS profile to attach to the user's interface	len	sublen	string: qos-profile-name
[26-28]	Pppoe-Url	PPPoE URL that is passed to PPPoE subscribers	len	sublen	string:URL
[26-30]	Tunnel-Nas-Port-Method	Conveys nasPort and nasPort type in tunnel	12	6	4-octet integer: 0 = none, 1 = Cisco CLID
[26-31]	Service-Bundle	Specifies the SRC service bundle	len	sublen	string
[26-33]	Tunnel-Max-Sessions	Maximum number of sessions allowed in a tunnel	12	6	integer: 4-octet
[26-34]	Framed-Ip-Route-Tag	Route tag to apply to returned framed-ip-address	12	6	integer: 4-octet
[26-35]	Tunnel-Dialout-Number	Dial number in L2TP dial-out	len	sublen	string:dial-out-number
[26-36]	PPP-Username	Username used in PPP L2TP dial-out sessions at the LNS for L2TP dial-out	len	sublen	string: ppp-username
[26-37]	PPP-Password	Password used in PPP L2TP dial-out sessions at the LNS for L2TP dial-out	len	sublen	string: ppp-password
[26-38]	PPP-Protocol	PPP authentication protocol used for L2TP dial-out sessions at the LNS	12	6	integer: 0 = none; 1 = PAP; 2 = CHAP; 3 = PAP-CHAP; 4 = CHAP-PAP
[26-39]	Tunnel-Min-Bps	Minimum line speed for L2TP dial-out	12	6	integer
[26-40]	Tunnel-Max-Bps	Maximum line speed for L2TP dial-out	12	6	integer
[26-41]	Tunnel-Bearer-Type	Bearer capability required for L2TP dial-out	12	6	integer: 0 = none; 1 = analog; 2 = digital
[26-42]	Input-GigaPkts	Number of times input-packets attribute rolls over its 4-octet field	12	6	integer
[26-43]	Output-GigaPkts	Number of times output-packets attribute rolls over its 4-octet field	12	6	integer
[26-44]	Tunnel-Interface-Id	Tunnel interface selector that AAA caches as part of the tunnel-session profile and the user's profile. This attribute is available to the RADIUS authentication and accounting servers.	len	sublen	string: tunnel selector
[26-45]	Ipv6-Virtual-Router	Virtual router name for B-RAS user's IPv6 interface	len	sublen	string: virtual-router-name
[26-46]	Ipv6-Local-Interface	Local IPv6 interface to apply to the E-series side of the connection	len	sublen	string: ipv6-local-interface
[26-47]	Ipv6-Primary-DNS	B-RAS user's primary IPv6 DNS address negotiated by DHCP	len	sublen	hexadecimal string: ipv6-primary-dns-address

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-48]	Ipv6-Secondary-DNS	B-RAS user's secondary IPv6 DNS address negotiated by DHCP	len	sublen	hexadecimal string: ipv6-primary-dns-address
[26-51]	Disconnect-Cause	L2TP PPP disconnect cause information received by the LAC	len	sublen	string:l2tp-ppp-disconnect-cause
[26-52]	Radius-Client-Address	RADIUS relay server's IP address	12	6	integer:4-octet
[26-53]	Service-Description	AAA profile service description string	len	sublen	string:profile-service-description
[26-54]	L2tp-Recv-Window-Size	<ul style="list-style-type: none"> ■ L2TP receive window size (RWS) for a tunnel on the LAC ■ Number of packets that the peer can transmit without receiving an acknowledgment from the router ■ 4-octet integer 	12	6	integer:4-octet
[26-55]	DHCP-Options	Client's DHCP options	len	sublen	string:dhcp-options
[26-56]	DHCP-MAC-Address	Client's MAC address	len	sublen	string:mac-address
[26-57]	DHCP-GI-Address	DHCP relay agent's IP address	12	6	integer:4-octet
[26-58]	LI-Action	Packet mirroring action	len	sublen	Salt encrypted integer: 0 = stop monitoring; 1 = start monitoring; 2 = no action
[26-59]	Med-Dev-Handle	Link to which packet mirroring is applied	len	sublen	Salt encrypted string; contains an ASCII-encoded unsigned integer
[26-60]	Med-Ip-Address	IP address of analyzer device to which mirrored packets are forwarded	len	sublen	Salt encrypted IP address
[26-61]	Med-Port-Number	UDP port in the analyzer device to which mirrored packets are forwarded	len	sublen	Salt encrypted integer
[26-62]	MLPPP-Bundle-Name	Text string that identifies the Multilink PPP bundle name	len	sublen	string:mlppp-bundle-name
[26-63]	Interface-Desc	Text string that identifies the subscriber's access interface	len	sublen	string:interface-description
[26-64]	Tunnel-Group	Name of the tunnel group assigned to a domain map	len	sublen	string:tunnel-group-name
[26-65]	Activate-Service	Service to activate for the subscriber	len	sublen	string:service-name
[26-66]	Deactivate-Service	Service to deactivate for the subscriber	len	sublen	string:service-name
[26-67]	Service-Volume-tagX	Amount of traffic, in MB, that can use the service; service is deactivated when the volume is exceeded	12	6	integer: volume in MB; 0 = infinite volume
[26-68]	Service-Timeout-tagX	Number of seconds that the service can be active; service is deactivated when the timeout expires	12	6	integer: time in seconds; 0 = no timeout

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-69]	Service-Statistics-tagX	Enable or disable statistics for the service	12	6	integer: 0 = disable; 1 = enable time statistics; 2 = enable time and volume statistics
[26-70]	Ignore-DF-Bit	Enable or disable the ignore don't fragment (DF) bit feature on a B-RAS user's interface	12	6	integer: 0 = disable; 1 = enable
[26-71]	IGMP-Access-Name	Access List to use for the group (G) filter	len	sublen	string:32-octet
[26-72]	IGMP-Access-Src-Name	Access List to use for the source-group (S,G) filter	len	sublen	string:32-octet
[26-73]	IGMP-OIF-Map-Name	Multicast OIF (outgoing interface) mapping	len	sublen	string:32-octet
[26-74]	MLD-Access-Name	Access List to use for the group (G) filter	len	sublen	string:32-octet
[26-75]	MLD-Access-Src-Name	Access List to use for the source-group (S,G) filter	len	sublen	string:32-octet
[26-76]	MLD-OIF-Map-Name	Multicast OIF (outgoing interface) mapping	len	sublen	string:32-octet
[26-77]	MLD-Version	MLD Protocol Version (MLD Version 1 = 1; MLD Version 2 = 2)	12	6	integer:1-octet
[26-78]	IGMP-Version	IGMP Protocol Version (IGMP Version 1 = 1; IGMP Version 2 = 2; IGMP Version 3 = 3)	12	6	integer:1-octet
[26-79]	IP-Mcast-Adm-Bw-Limit	The maximum multicast bandwidth that will be admitted on an IP interface, in Kbps	12	6	integer:4-octet
[26-80]	IPv6-Mcast-Adm-Bw-Limit	The maximum multicast bandwidth that will be admitted on an IPv6 interface, in Kbps	12	6	integer:4-octet
[26-81]	L2c-Information	Series of type length value (tlv) fields (binary) representing the access loop parameters as defined in GSMP extensions for layer2 control (L2C) Topology Discovery and Line Configuration—draft-wadhwa-gsmp-l2control-configuration-00.txt (July 2006 expiration)	len	sublen	string: format is a series of type length value (tlv) fields (binary) representing the access loop parameters
[26-82]	Qos-Parameters	Name of the QoS parameter instance to create on the user's interface, followed by the value of the parameter. For example, the max-bandwidth 4000000 parameter instance represents the parameter name that was defined using the qos-parameter-define command (max-bandwidth) and the value to assign to the parameter (4000000). Multiple instances of this VSA can be returned from RADIUS using this format.	len	sublen	string: format is <i>parameter name parameter value</i> , where <i>parameter name</i> is ASCII name of a parameter name found in the QoS parameter definition and <i>parameter value</i> is the ASCII representation of 0–21474836470; multiple instances of this VSA can be returned from RADIUS using this format

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-83]	Service-Session	Name of the service (including parameter values) that is associated with service manager statistics	len	sublen	string;service-name
[26-84]	Mobile-IP-Algorithm	Authentication algorithm used for Mobile IP registration	12	6	integer: 4-octet
[26-85]	Mobile-IP-SPI	Security parameter index for Mobile IP registration	12	6	integer: 4-octet
[26-86]	Mobile-IP-Key	Security association MD-5 key for Mobile IP registration	len	sublen	string: 32-octet
[26-87]	Mobile-IP-Replay	Replay time stamp for Mobile IP registration	12	6	integer: 4-octet
[26-88]	Mobile-IP-Access-Control-List	Access control list to filter on basis of care-of address	len	sublen	string: 32-octet
[26-89]	Mobile-IP-Lifetime	Registration lifetime for Mobile IP registration	12	6	integer: 4-octet
[26-90]	L2TP-Resynch-Method	L2TP peer resynchronization method	12	6	integer: 0 = disabled; 1 = failover protocol; 2 = silent failover; 3 = failover protocol with silent failover as backup
[26-91]	Tunnel-Switch-Profile	<ul style="list-style-type: none"> ■ Name of the L2TP tunnel switch profile ■ The L2TP tunnel switch profile defines the L2TP tunnel switching behavior for the interfaces to which this profile is assigned 	len	sublen	string; tunnel-switch-profile
[26-92]	L2C-Up-Stream-Data	Actual upstream rate access loop parameter (ASCII encoded) as defined in GSMP extensions for layer2 control (L2C) Topology Discovery and Line Configuration—draft-wadhwa-gsmp-l2control-configuration-00.txt (July 2006 expiration).	len	sublen	string; actual upstream rate access loop parameter (ASCII encoded)
[26-93]	L2C-Down-Stream-Data	Actual downstream rate access loop parameter (ASCII encoded) as defined in GSMP extensions for layer2 control (L2C) Topology Discovery and Line Configuration—draft-wadhwa-gsmp-l2control-configuration-00.txt (July 2006 expiration).	len	sublen	string; actual downstream rate access loop parameter (ASCII encoded)

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-94]	Tunnel-Tx-Speed-Method	The method that the router uses to calculate the transmit connect speed of the subscriber's access interface. This speed is reported in L2TP Transmit (TX) Speed AVP 24. During the establishment of an L2TP tunnel session, the LAC sends AVP 24 to the LNS to convey the transmit speed of the subscriber's access interface.	12	6	integer: 1 = static-layer2, TX speed based on static layer 2 settings; 2 = dynamic-layer2, TX speed based on dynamic layer 2 settings; 3 = qos, TX speed based on QoS settings; 4 = actual, TX speed that is the lesser of the dynamic-layer2 value or the qos value
[26-95]	IGMP-Query-Interval	IGMP Query Interval	12	6	integer: 4-octet
[26-96]	IGMP-Max-Resp-Time	IGMP Maximum Response Time	12	6	integer: 4-octet
[26-97]	IGMP-Immediate-Leave	IGMP Immediate Leave	12	6	4-octet integer: 0 = disabled 1 = enabled
[26-98]	MLD-Query-Interval	MLD Query Interval	12	6	integer: 4-octet
[26-99]	MLD-Max-Resp-Time	MLD Maximum Response Time	12	6	integer: 4-octet
[26-100]	MLD-Immediate-Leave	MLD Immediate Leave	12	6	4-octet integer: 0 = disabled 1 = enabled
[26-110]	Acc-Loop-Cir-Id	Identification of the subscriber node connection to the access node	len	sublen	string: up to 63 ASCII characters
[26-111]	Acc-Aggr-Cir-Id-Bin	Unique identification of the DSL line	len	sublen	integer: 8-octet
[26-112]	Acc-Aggr-Cir-Id-Asc	Identification of the uplink on the access node. For example: ■ For Ethernet access aggregation: <i>ethernet slot/port [:inner-vlan-id] [:outer-vlan-id]</i> ■ For ATM aggregation: <i>atm slot/port:vpi.vci</i>	len	sublen	string: up to 63 ASCII characters
[26-113]	Act-Data-Rate-Up	Actual upstream data rate of the subscriber's synchronized DSL link	12	6	integer: 4-octet
[26-114]	Act-Data-Rate-Dn	Actual downstream data rate of the subscriber's synchronized DSL link	12	6	integer: 4-octet
[26-115]	Min-Data-Rate-Up	Minimum upstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-116]	Min-Data-Rate-Dn	Minimum downstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-117]	Att-Data-Rate-Up	Upstream data rate that the subscriber can attain	12	6	integer: 4-octet
[26-118]	Att-Data-Rate-Dn	Downstream data rate that the subscriber can attain	12	6	integer: 4-octet
[26-119]	Max-Data-Rate-Up	Maximum upstream data rate configured for the subscriber	12	6	integer: 4-octet

Table 47: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-120]	Max-Data-Rate-Dn	Maximum downstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-121]	Min-LP-Data-Rate-Up	Minimum upstream data rate in low power state configured for the subscriber	12	6	integer: 4-octet
[26-122]	Min-LP-Data-Rate-Dn	Minimum downstream data rate in low power state configured for the subscriber	12	6	integer: 4-octet
[26-123]	Max-Interlv-Delay-Up	Maximum one-way upstream interleaving delay configured for the subscriber	12	6	integer: 4-octet
[26-124]	Act-Interlv-Delay-Up	Subscriber's actual one-way upstream interleaving delay	12	6	integer: 4-octet
[26-125]	Max-Interlv-Delay-Dn	Maximum one-way downstream interleaving delay configured for the subscriber	12	6	integer: 4-octet
[26-126]	Act-Interlv-Delay-Dn	Subscriber's actual one-way downstream interleaving delay	12	6	integer: 4-octet
[26-127]	DSL-Line-State	State of the DSL line	12	6	4-octet integer 1 = Show uptime 2 = Idle 3 = Silent
[26-128]	DSL-Type	Encapsulation used by the subscriber associated with the DSLAM interface from which requests are initiated	11	5	string: 3-byte
[26-129]	Ipv6-NdRa-Prefix	Prefix value in IPv6 Neighbor Discovery route advertisements	len	sublen	hexadecimal string
[26-140]	Service-Interim-Acct-Interval	Amount of time between interim accounting updates for this service.	12	6	integer: time in the range 600–86400 seconds; 0 = disabled
[26-141]	Downstream-Calculated-Qos-Rate	Calculated downstream QoS rate in Kbps as set by the ANCP configuration	12	6	integer: 4-octet
[26-142]	Upstream-Calculated-Qos-Rate	Calculated downstream QoS rate in Kbps as set by the ANCP configuration	12	6	integer: 4-octet

DSL Forum VSAs

Table 48 describes the DSL Forum VSAs supported by JUNOS software for RADIUS. JUNOS software uses the vendor ID assigned to the DSL Forum (3561, or DE9 in hexadecimal format) by the Internet Assigned Numbers Authority (IANA).

Table 48: JUNOS Software DSL Forum (Vendor ID 3561) VSA Formats

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-1]	Agent-Circuit-Id	Identifier for the subscriber agent circuit ID that corresponds to the DSLAM interface from which subscriber requests are initiated	len	sublen	string: agent-circuit-id
[26-2]	Agent-Remote-Id	Unique identifier for the subscriber associated with the DSLAM interface from which requests are initiated	len	sublen	string: agent-remote-id
[26-129]	Actual-Data-Rate-Upstream	Actual upstream data rate of the subscriber's synchronized DSL link	12	6	integer: 4-octet
[26-130]	Actual-Data-Rate-Downstream	Actual downstream data rate of the subscriber's synchronized DSL link	12	6	integer: 4-octet
[26-131]	Minimum-Data-Rate-Upstream	Minimum upstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-132]	Minimum-Data-Rate-Downstream	Minimum downstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-133]	Attainable-Data-Rate-Upstream	Upstream data rate that the subscriber can attain	12	6	integer: 4-octet
[26-134]	Attainable-Data-Rate-Downstream	Downstream data rate that the subscriber can attain	12	6	integer: 4-octet
[26-135]	Maximum-Data-Rate-Upstream	Maximum upstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-136]	Maximum-Data-Rate-Downstream	Maximum downstream data rate configured for the subscriber	12	6	integer: 4-octet
[26-137]	Minimum-Data-Rate-Upstream-Low-Power	Minimum upstream data rate in low power state configured for the subscriber	12	6	integer: 4-octet
[26-138]	Minimum-Data-Rate-Downstream-Low-Power	Minimum downstream data rate in low power state configured for the subscriber	12	6	integer: 4-octet
[26-139]	Maximum-Interleaving-Delay-Upstream	Maximum one-way upstream interleaving delay configured for the subscriber	12	6	integer: 4-octet
[26-140]	Actual-Interleaving-Delay-Upstream	Subscriber's actual one-way upstream interleaving delay	12	6	integer: 4-octet
[26-141]	Maximum-Interleaving-Delay-Downstream	Maximum one-way downstream interleaving delay configured for the subscriber	12	6	integer: 4-octet
[26-142]	Actual-Interleaving-Delay-Downstream	Subscriber's actual one-way downstream interleaving delay	12	6	integer: 4-octet

Table 48: JUNOS Software DSL Forum (Vendor ID 3561) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-144]	Access-Loop-Encapsulation	Encapsulation used by the subscriber associated with the DSLAM interface from which requests are initiated	11	5	string: 3-byte
[26-254]	IWF-Session	Indication that the interworking function (IWF) has been performed for the subscriber's session to enable the transport of PPP over ATM traffic on a PPPoE interface	8	2	No data field required

Pass Through RADIUS Attributes

Table 49 describes the RADIUS attribute that is not processed by JUNOS software. The router simply passes this attribute to its destination.

Table 49: RADIUS Attribute Passed Through by JUNOS Software

Standard Number	Attribute Name	Description
[79]	EAP-Message	<ul style="list-style-type: none"> ■ Used by RADIUS relay servers ■ Passed through to the RADIUS server

References

For more information about RADIUS attributes, see the following RFCs:

- RFC 2661—Layer Two Tunneling Protocol “L2TP” (August 1999)
- RFC 2865—Remote Authentication Dial In User Service (RADIUS) (June 2000)
- RFC 2866—RADIUS Accounting (June 2000)
- RFC 2867—RADIUS Accounting Modifications for Tunnel Protocol Support (June 2000)
- RFC 2868—RADIUS Attributes for Tunnel Protocol Support (June 2000)
- RFC 2869—RADIUS Extensions (June 2000)
- RFC 3748—Extensible Authentication Protocol (EAP) (June 2004)
- RFC 4679—DSL Forum Vendor-Specific RADIUS Attributes (September 2006)



NOTE: IETF drafts are valid for only 6 months from the date of issuance. They must be considered as works in progress. Please refer to the IETF Web site at <http://www.ietf.org> for the latest drafts.