Chapter 3

Configuring RADIUS Attributes

This chapter identifies the Remote Authentication Dial-In User Service (RADIUS) attributes that JUNOSe software supports and describes the RADIUS attributes you can configure with the command-line interface (CLI). RADIUS attributes are discussed in the following sections:

Overview

RADIUS is a distributed client/server that protects networks against unauthorized access. RADIUS clients running on a E-series router send authentication requests to a central RADIUS server.

You can access the RADIUS server through either a subscriber line or the CLI.

NOTE: For CLI/telnet users only—For CLI security, the router supports the RADIUS Access-Challenge message. The RADIUS server uses this message to send the user a challenge requiring a response. The router then displays the single reply message and attempts to authenticate the user with the new response as the password.

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.

The RADIUS server is configured and managed by a RADIUS administrator. See your RADIUS server documentation for information about configuring and managing a RADIUS server.

The E-series RADIUS client uses the IP address in the router ID unless you explicitly set an IP address by using the **radius update-source-addr** command. See *Configuring RADIUS Authentication and Accounting Servers* in *Chapter 1, Configuring Remote Access*.

To explicitly set the source address, perform the following tasks:

- Configure the RADIUS update-source address.
- Set this address on the RADIUS server if required.

NOTE: For additional RADIUS information about topics such as restricting user access, vty line authentication, or SSH, see *JUNOSe System Basics Configuration Guide, Chapter 9, Passwords and Security*.

RADIUS Services

RADIUS provides three distinct services:

- Authentication—Determines whether or not a user is allowed to access a specific service or resource.
- Authorization—Associates connection attributes or characteristics with a specific user.
- Accounting—Tracks service use by subscribers.

RADIUS Attributes

JUNOSe software supports the RADIUS attributes and vendor-specific attributes (VSAs) listed in this chapter. These attributes define specific authentication, authorization, and accounting elements in a user's profile. The profile is stored on the RADIUS server. RADIUS messages contain RADIUS attributes to communicate information between an E-series router and the RADIUS server.

Note these guidelines about RADIUS attribute numbers:

- The number, such as [1], that appears in brackets before each attribute is the attribute's standard number.
- Any attribute number beginning with 26, such as [26-1], identifies a vendor-specific attribute.

For a complete list of RADIUS attributes supported by JUNOSe software, see *Chapter 6, RADIUS Attribute Descriptions*.

Platform Considerations

RADIUS is supported on all E-series routers.

For information about the modules supported on E-series routers:

- See the *ERX Module Guide* for modules supported on ERX-7xx models, ERX-14xx models, and the ERX-310 router.
- See the *E120 and E320 Module Guide* for modules supported on the E120 router and the E320 router.

References

For more information about RADIUS, consult the following resources:

- 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 4679—DSL Forum Vendor-Specific RADIUS Attributes (September 2006)
- GSMP extensions for layer2 control (L2C) Topology Discovery and Line Configuration—draft-wadhwa-gsmp-l2control-configuration-00.txt (July 2006 expiration)

Subscriber AAA Access Messages

Authorization and authentication access messages 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 via the RADIUS protocol to the RADIUS server. In response, the RADIUS server grants or denies the request.

The router supports the following types of authentication and authorization messages:

- Access-Request—Requests client authentication. RADIUS responds to a client authentication request with either an Access-Accept, an Access-Reject, or an Access-Challenge message. An Access-Request message can contain a number of RADIUS attributes.
- Access-Accept—Grants the client's access request and can provide specific configuration information necessary to begin delivery of service to the user.

- Access-Reject—Sent if any value of the received attributes is not acceptable.
- Access-Challenge—Sent to the client, requesting additional authentication information.
- Change-of-Authorization-Request (CoA-Request)—Dynamically modifies session attributes, such as data filters.
- Disconnect-Request—Immediately terminates a user session.

Supported RADIUS IETF Attributes

Table 11 lists the Access-Request, Access-Accept, Access-Reject, Access-Challenge, CoA, and Disconnect-Request attributes supported by JUNOSe software. The following notes are referenced in Table 11:

1. Attribute is used by Access-Request messages when terminating a PPP connection at the LNS or the initiating LAC.
2. Attribute is used to support pass-through exchange of EAP messages.
3. Attribute is used by Access-Challenge messages to set the PPP retransmission timeout used for EAP request packets.

Table 11 lists the RADIUS IETF attributes supported for Access-Request, Access-Accept, Access-Reject, CoA-Request, and Disconnect-Request messages.

Table 11: AAA Access Message RADIUS IETF Attributes Supported

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	Access-Challenge	CoA-Request	Disconnect-Request
[1]	User-Name	a	a	–	–	a	a
[2]	User-Password	a	–	–	–	–	–
[3]	CHAP-Password	a	–	–	–	–	–
[4]	NAS-IP-Address	a	–	–	–	–	–
[5]	NAS-Port	a	–	–	–	–	–
[6]	Service-Type	a	a	–	–	–	–
[7]	Framed-Protocol	a	a	–	–	–	–
[8]	Framed-IP-Address	a	a	–	–	a	–
[9]	Framed-IP-Netmask	–	a	–	–	–	–
[11]	Filter-Id	–	a	–	–	–	–
[12]	Framed-MTU (See Note 2 on page 130.)	a	a	–	–	–	–
[18]	Reply-Message (See Note 2 on page 130.)	–	a	a	a	–	–
[22]	Framed-Route	–	a	–	–	–	–
[24]	State (See Note 2 on page 130.)	–	–	–	a	–	–

Table 11: AAA Access Message RADIUS IETF Attributes Supported (continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	Access-Challenge	CoA-Request	Disconnect-Request
[25]	Class	–	a	–	–	–	–
[27]	Session-Timeout (See Note 2 on page 130.) (See Note 3 on page 130.)	–	a	a	a	–	–
[28]	Idle-Timeout	–	a	–	–	–	–
[30]	Called-Station-Id	a	–	–	–	–	–
[31]	Calling-Station-Id	a	–	–	–	a	–
[32]	NAS-Identifier	a	–	–	–	–	–
[33]	Proxy-State	a	–	–	–	–	–
[44]	Acct-Session-Id	a	–	–	–	a	–
[50]	Acct-Multi-Session-Id	a	–	–	–	–	a
[60]	CHAP-Challenge	a	–	–	–	–	–
[61]	NAS-Port-Type	a	–	–	–	–	–
[62]	Port-Limit	–	a	–	–	–	–
[64]	Tunnel-Type (See Note 1 on page 130.)	a	a	–	–	–	–
[65]	Tunnel-Medium-Type (See Note 1 on page 130.)	a	a	–	–	–	–
[66]	Tunnel-Client-Endpoint (See Note 1 on page 130.)	a	a	–	–	–	–
[67]	Tunnel-Server-Endpoint (See Note 1 on page 130.)	a	a	–	–	–	–
[68]	Acct-Tunnel-Connection (See Note 1 on page 130.)	a	–	–	–	–	–
[69]	Tunnel-Password	–	a	–	–	–	–
[77]	Connect-Info	a	–	–	–	–	–
[79]	EAP-Message (See Note 2 on page 130.)	a	a	a	a	–	–
[80]	Message-Authenticator (See Note 2 on page 130.)	a	a	a	a	–	–
[82]	Tunnel-Assignment-Id	–	a	–	–	–	–
[83]	Tunnel-Preference	–	a	–	–	–	–
[85]	Acct-Interim-Interval	–	a	–	–	–	–
[87]	NAS-Port-Id	a	–	–	–	a	–
[88]	Framed-Pool	–	a	–	–	–	–
[90]	Tunnel-Client-Auth-Id (See Note 1 on page 130.)	a	a	–	–	–	–
[91]	Tunnel-Server-Auth-Id (See Note 1 on page 130.)	a	a	–	–	–	–

Table 11: AAA Access Message RADIUS IETF Attributes Supported (continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	Access-Challenge	CoA-Request	Disconnect-Request
[96]	Framed-Interface-Id	–	a	–	–	–	–
[97]	Framed-Ipv6-Prefix	–	a	–	–	–	–
[99]	Framed-Ipv6-Route	–	a	–	–	–	–
[101]	Error-Cause	–	–	–	–	a	a
[135]	Ascend-Primary-Dns	–	a	–	–	–	–
[136]	Ascend-Secondary-Dns	–	a	–	–	–	–
[188]	Ascend-Num-In-Multilink	a	–	–	–	–	–
[242]	Ascend-Data-Filter	–	a	–	–	–	–

Supported Juniper Networks VSAs

Table 12 lists the Juniper Networks (Vendor ID 4874) VSAs supported for Access-Request, Access-Accept, Access-Reject, CoA-Request, and Disconnect-Request messages.

Table 12: AAA Access Message Juniper Networks (Vendor ID 4874) VSAs Supported

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	CoA-Request	Disconnect-Request
[26-1]	Virtual-Router	–	a	–	a	–
[26-2]	Local-Address-Pool	–	a	–	–	–
[26-3]	Local-Loopback-Interface	–	a	–	–	–
[26-4]	Primary-DNS	–	a	–	–	–
[26-5]	Secondary-DNS	–	a	–	–	–
[26-6]	Primary-WINS (NBNS)	–	a	–	–	–
[26-7]	Secondary-WINS (NBNS)	–	a	–	–	–
[26-8]	Tunnel-Virtual-Router	–	a	–	–	–
[26-9]	Tunnel-Password	–	a	–	–	–
[26-10]	Ingress-Policy-Name	–	a	–	–	–
[26-11]	Egress-Policy-Name	–	a	–	–	–
[26-12]	Ingress-Statistics	–	a	–	–	–
[26-13]	Egress-Statistics	–	a	–	–	–
[26-14]	Service-Category	–	a	–	–	–
[26-15]	PCR	–	a	–	–	–
[26-16]	SCR	–	a	–	–	–
[26-17]	Mbs	–	a	–	–	–
[26-22]	Sa-Validate	–	a	–	–	–

Table 12: AAA Access Message Juniper Networks (Vendor ID 4874) VSAs Supported (continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	CoA-Request	Disconnect-Request
[26-23]	IGMP-Enable	–	a	–	–	–
[26-24]	Pppoe-Description	a	–	–	–	–
[26-25]	Redirect-Vrouter-Name	–	a	–	–	–
[26-26]	Qos-Profile-Name	–	a	–	–	–
[26-30]	Tunnel-Nas-Port-Method	–	a	–	–	–
[26-31]	SSC-Service-Bundle-Name	–	a	–	–	–
[26-33]	Tunnel-Max-Sessions	–	a	–	–	–
[26-34]	Framed-IP-Route-Tag	–	a	–	–	–
[26-44]	Tunnel-Interface-ID	a	–	–	–	–
[26-45]	Ipv6-Virtual-Router	–	a	–	–	–
[26-46]	Ipv6-Local-Interface	–	a	–	–	–
[26-47]	Ipv6-Primary-DNS	–	a	–	–	–
[26-48]	Ipv6-Secondary-DNS	–	a	–	–	–
[26-52]	RADIUS-Client-Address	a	–	–	–	–
[26-53]	Service-Description	a	–	–	–	–
[26-54]	L2tp-Recv-Window-Size	–	a	–	–	–
[26-55]	DHCP-Options	a	–	–	–	–
[26-56]	DHCP-MAC-Address	a	–	–	–	–
[26-57]	DHCP-GI-Address	a	–	–	–	–
[26-58]	LI-Action	–	a	–	a	–
[26-59]	Med-Dev-Handle	–	a	–	a	–
[26-60]	Med-Ip-Address	–	a	–	a	–
[26-61]	Med-Port-Number	–	a	–	a	–
[26-62]	MLPPP-Bundle-Name	a	–	–	–	–
[26-63]	Interface-Desc	a	–	–	–	–
[26-64]	Tunnel-Group	–	a	–	–	–
[26-65]	Activate-Service	–	a	–	a	–
[26-66]	Deactivate-Service	–	a	–	a	–
[26-67]	Service-Volume	–	a	–	a	–
[26-68]	Service-Timeout	–	a	–	a	–
[26-69]	Service-Statistics	–	a	–	a	–
[26-70]	Ignore-DF-Bit	–	a	–	–	–
[26-71]	IGMP-Access-Name	–	a	–	–	–
[26-72]	IGMP-Access-Src-Name	–	a	–	–	–

Table 12: AAA Access Message Juniper Networks (Vendor ID 4874) VSAs Supported (continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	CoA-Request	Disconnect-Request
[26-73]	IGMP-OIF-Map-Name	–	a	–	–	–
[26-74]	MLD-Access-Name	–	a	–	–	–
[26-75]	MLD-Access-Src-Name	–	a	–	–	–
[26-76]	MLD-OIF-Map-Name	–	a	–	–	–
[26-77]	MLD-Version	–	a	–	–	–
[26-78]	IGMP-Version	–	a	–	–	–
[26-79]	IP-Mcast-Adm-Bw-Limit	–	a	–	–	–
[26-80]	IPv6-Mcast-Adm-Bw-Limit	–	a	–	–	–
[26-81]	L2c-Information	a	–	–	–	–
[26-82]	QoS-Parameters	–	a	–	–	–
[26-84]	Mobile-IP-Algorithm	–	a	–	–	–
[26-85]	Mobile-IP-SPI	–	a	–	–	–
[26-86]	Mobile-IP-Key	–	a	–	–	–
[26-87]	Mobile-IP-Replay	–	a	–	–	–
[26-88]	Mobile-IP-Access-Control-List	–	a	–	–	–
[26-89]	Mobile-IP-Lifetime	–	a	–	–	–
[26-90]	L2TP-Resynch-Method	–	a	–	–	–
[26-91]	Tunnel-Switch-Profile	–	a	–	–	–
[26-92]	L2C-Up-Stream-Data	a	–	–	–	–
[26-93]	L2C-Down-Stream-Data	a	–	–	–	–
[26-94]	Tunnel-Tx-Speed-Method	–	a	–	–	–
[26-95]	IGMP-Query-Interval	–	a	–	–	–
[26-96]	IGMP-Max-Resp-Time	–	a	–	–	–
[26-97]	IGMP-Immediate-Leave	–	a	–	–	–
[26-98]	MLD-Query-Interval	–	a	–	–	–
[26-99]	MLD-Max-Resp-Time	–	a	–	–	–
[26-100]	MLD-Immediate-Leave	–	a	–	–	–
[26-110]	Acc-Loop-Cir-Id	a	–	–	–	–
[26-111]	Acc-Aggr-Cir-Id-Bin	a	–	–	–	–
[26-112]	Acc-Aggr-Cir-Id-Asc	a	–	–	–	–
[26-113]	Act-Data-Rate-Up	a	–	–	–	–
[26-114]	Act-Data-Rate-Dn	a	–	–	–	–
[26-115]	Min-Data-Rate-Up	a	–	–	–	–
[26-116]	Min-Data-Rate-Dn	a	–	–	–	–

Table 12: AAA Access Message Juniper Networks (Vendor ID 4874) VSAs Supported (continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	CoA-Request	Disconnect-Request
[26-117]	Att-Data-Rate-Up	a	–	–	–	–
[26-118]	Att-Data-Rate-Dn	a	–	–	–	–
[26-119]	Max-Data-Rate-Up	a	–	–	–	–
[26-120]	Max-Data-Rate-Dn	a	–	–	–	–
[26-121]	Min-LP-Data-Rate-Up	a	–	–	–	–
[26-122]	Min-LP-Data-Rate-Dn	a	–	–	–	–
[26-123]	Max-Interlv-Delay-Up	a	–	–	–	–
[26-124]	Act-Interlv-Delay-Up	a	–	–	–	–
[26-125]	Max-Interlv-Delay-Dn	a	–	–	–	–
[26-126]	Act-Interlv-Delay-Dn	a	–	–	–	–
[26-127]	DSL-Line-State	a	–	–	–	–
[26-128]	DSL-Type	a	–	–	–	–
[26-129]	Ipv6-NdRa-Prefix	–	a	–	–	–
[26-140]	Service-Interim-Acct-Interval	–	a	–	a	–

Subscriber AAA Accounting Messages

Accounting messages identify service provisions and use on a per-user or per-tunnel basis. These messages keep track of when a particular service is initiated and terminated for a specific user.

JUNOSe software supports the Acct-On message on startup or configuration of the first accounting server. Acct-Off messages are supported when the last RADIUS accounting server in a virtual router is removed, when the router is shut down, and when a virtual router that has configured RADIUS accounting servers is deleted.

The router supports the following types of accounting messages:

- Acct-Start
- Acct-Stop
- Interim-Acct
- Acct-On
- Acct-Off

Supported RADIUS IETF Attributes

Table 13 lists the RADIUS IETF attributes supported for Acct-Start, Acct-Stop, Interim-Acct, Acct-On, and Acct-Off messages.

The following notes are referred to in Table 13:

1. The attribute is used when terminating a PPP connection at the LNS or the initiating LAC.

2. For this attribute to be included, an IP address must be assigned to the subscriber.

3. The attribute is not included in Acct-Stop messages that are sent when a user session does not get established in one of the following situations.

   - The **aaa accounting acct-stop on-access-deny** command is enabled and the authentication server sends an Access-Reject (deny) message.

   - The **aaa accounting acct-stop on-aaa-failure** command is enabled and the authentication server issues an Access-Accept message (grant), but the AAA configuration denies access for the user. The **aaa accounting acct-stop on-aaa-failure** is enabled by default.

   - The **aaa accounting acct-stop on-aaa-failure** command is enabled and the user terminates before AAA receives the authentication response from the authentication server.

4. For this attribute to be included, an IPv6 interface ID must be assigned to the subscriber.

5. For this attribute to be included, at least one IPv6 prefix must be assigned to the subscriber.

Table 13: AAA Accounting Message RADIUS IETF Attributes Supported

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[1]	User-Name	a	a	a	–	–
[4]	NAS-IP-Address	a	a	a	a	a
[5]	NAS-Port	a	a	a	–	–
[6]	Service-Type	a	a	a	–	–
[7]	Framed-Protocol (See Note 3 on page 136.)	a	a	a	–	–
[8]	Framed-IP-Address (See Note 2 on page 136.)	a	a	a	–	–
[9]	Framed-IP-Netmask	a	a	a	–	–
[13]	Framed-Compression (See Note 3 on page 136.)	a	a	a	–	–
[25]	Class	a	a	a	–	–
[30]	Called-Station-Id	a	a	a	–	–

Table 13: AAA Accounting Message RADIUS IETF Attributes Supported (continued)

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[31]	Calling-Station-Id	a	a	a	–	–
[32]	NAS-Identifier	a	a	a	a	a
[40]	Acct-Status-Type	a	a	a	a	a
[41]	Acct-Delay-Time	a	a	a	a	a
[42]	Acct-Input-Octets	–	a	a	–	–
[43]	Acct-Output-Octets	–	a	a	–	–
[44]	Acct-Session-Id	a	a	a	a	a
[45]	Acct-Authentic	a	a	a	a	a
[46]	Acct-Session-Time	–	a	a	–	–
[47]	Acct-Input-Packets	–	a	a	–	–
[48]	Acct-Output-Packets	–	a	a	–	–
[49]	Acct-Terminate-Cause	–	a	–	–	a
[50]	Acct-Multi-Session-Id (See Note 3 on page 136.)	a	a	a	–	–
[51]	Acct-Link-Count (See Note 3 on page 136.)	a	a	a	–	–
[52]	Acct-Input-Gigawords	–	a	a	–	–
[53]	Acct-Output-Gigawords	–	a	a	–	–
[55]	Event-Timestamp	a	a	a	a	a
[61]	NAS-Port-Type	a	a	a	–	–
[64]	Tunnel-Type (See Note 1 on page 136.)	a	a	a	–	–
[65]	Tunnel-Medium-Type (See Note 1 on page 136.)	a	a	a	–	–
[66]	Tunnel-Client-Endpoint (See Note 1 on page 136.)	a	a	a	–	–
[67]	Tunnel-Server-Endpoint (See Note 1 on page 136.)	a	a	a	–	–
[68]	Acct-Tunnel-Connection (See Note 1 on page 136.)	a	a	a	–	–
[77]	Connect-Info	a	a	a	–	–
[82]	Tunnel-Assignment-Id (LAC only) (See Note 1 on page 136.)	a	a	a	–	–
[83]	Tunnel-Preference (LAC only)	a	a	a	–	–
[87]	NAS-Port-Id	a	a	a	–	–
[90]	Tunnel-Client-Auth-Id (See Note 1 on page 136.)	a	a	a	–	–
[91]	Tunnel-Server-Auth-Id (See Note 1 on page 136.)	a	a	a	–	–

Table 13: AAA Accounting Message RADIUS IETF Attributes Supported (continued)

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[96]	Framed-Interface-Id (See Note 4 on page 136.)	a	a	a	–	–
[97]	Framed-Ipv6-Prefix (See Note 5 on page 136.)	a	a	a	–	–
[188]	Ascend-Num-In-Multilink (See Note 3 on page 136.)	a	a	a	–	–

Supported Juniper Networks VSAs

Table 14 lists the Juniper Networks (Vendor ID 4874) VSAs supported for Acct-Start, Acct-Stop, Interim-Acct, Acct-On, and Acct-Off messages.

The following note is referred to in Table 14:

1. The attribute is not included in Acct-Stop messages that are sent when a user session does not get established in one of the following situations.

   - The **aaa accounting acct-stop on-access-deny** command is enabled and the authentication server sends an Access-Reject (deny) message.
   - The **aaa accounting acct-stop on-aaa-failure** command is enabled and the authentication server issues an Access-Accept message (grant), but the AAA configuration denies access for the user. The **aaa accounting acct-stop on-aaa-failure** is enabled by default.
   - The **aaa accounting acct-stop on-aaa-failure** command is enabled and the user terminates before AAA receives the authentication response from the authentication server.

Table 14: AAA Accounting Message Juniper Network (Vendor ID 4874) VSAs Supported

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[26-10]	Ingress-Policy-Name	a	a	a	–	–
[26-11]	Egress-Policy-Name	a	a	a	–	–
[26-24]	Pppoe-Description (See Note 1 on page 138.)	a	a	a	–	–
[26-42]	Acct-Input-Gigapackets	–	a	a	–	–
[26-43]	Acct-Output-Gigapackets	–	a	a	–	–
[26-44]	Tunnel-Interface-Id	a	a	a	–	–
[26-51]	Disconnect-Cause	–	a	–	–	–
[26-53]	Service-Description	a	a	a	–	–
[26-55]	DHCP-Options (See Note 1 on page 138.)	a	a	a	–	–
[26-56]	DHCP-MAC-Address (See Note 1 on page 138.)	a	a	a	–	–

Table 14: AAA Accounting Message Juniper Network (Vendor ID 4874) VSAs Supported (continued)

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[26-57]	DHCP-GI-Address (See Note 1 on page 138.)	a	a	a	–	–
[26-62]	MLPPP-Bundle-Name	a	a	a	–	–
[26-63]	Interface-Description	a	a	a	–	–
[26-92]	L2C-Up-Stream-Data	a	a	a	–	–
[26-93]	L2C-Down-Stream-Data	a	a	a	–	–
[26-110]	Acc-Loop-Cir-Id	a	a	a	–	–
[26-111]	Acc-Aggr-Cir-Id-Bin	a	a	a	–	–
[26-112]	Acc-Aggr-Cir-Id-Asc	a	a	a	–	–
[26-113]	Act-Data-Rate-Up	a	a	a	–	–
[26-114]	Act-Data-Rate-Dn	a	a	a	–	–
[26-115]	Min-Data-Rate-Up	a	a	a	–	–
[26-116]	Min-Data-Rate-Dn	a	a	a	–	–
[26-117]	Att-Data-Rate-Up	a	a	a	–	–
[26-118]	Att-Data-Rate-Dn	a	a	a	–	–
[26-119]	Max-Data-Rate-Up	a	a	a	–	–
[26-120]	Max-Data-Rate-Dn	a	a	a	–	–
[26-121]	Min-LP-Data-Rate-Up	a	a	a	–	–
[26-122]	Min-LP-Data-Rate-Dn	a	a	a	–	–
[26-123]	Max-Interlv-Delay-Up	a	a	a	–	–
[26-124]	Act-Interlv-Delay-Up	a	a	a	–	–
[26-125]	Max-Interlv-Delay-Dn	a	a	a	–	–
[26-126]	Act-Interlv-Delay-Dn	a	a	a	–	–
[26-127]	DSL-Line-State	a	a	a	–	–
[26-128]	DSL-Type	a	a	a	–	–

Tunnel Accounting Messages

Table 15 lists RADIUS attributes supported by the following tunnel-related accounting messages:

- Acct-Tunnel-Start
- Acct-Tunnel-Stop
- Acct-Tunnel-Reject

- Acct-Tunnel-Link-Start
- Acct-Tunnel-Link-Stop
- Acct-Tunnel-Link-Reject

Table 15: AAA Accounting Tunnel Message RADIUS Attributes Supported

Attribute Number	Attribute Name	Acct-Tunnel -Start	Acct-Tunnel -Stop	Acct-Tunnel -Reject	Acct-Tunnel -Link-Start	Acct-Tunnel-Link-Stop	Acct-Tunnel -Link-Reject
[1]	User-Name	–	–	–	a	a	–
[4]	NAS-IP-Address	a	a	a	a	a	a
[26-51]	Disconnect-Cause	–	–	–	–	a	–
[32]	NAS-Identifier	a	a	a	a	a	a
[40]	Acct-Status-Type	a	a	a	a	a	a
[41]	Acct-Delay-Time	a	a	a	a	a	a
[44]	Acct-Session-Id	a	a	a	a	a	a
[46]	Acct-Session-Time	–	a	–	–	a	–
[49]	Acct-Terminate-Cause	–	a	a	–	a	a
[55]	Event-Timestamp	a	a	a	a	a	a
[64]	Tunnel-Type	a	a	a	a	a	a
[65]	Tunnel-Medium-Type	a	a	a	a	a	a
[66]	Tunnel-Client-Endpoint	a	a	a	a	a	a
[67]	Tunnel-Server-Endpoint	a	a	a	a	a	a
[68]	Acct-Tunnel-Connection	a	a	a	a	a	a
[82]	Tunnel-Assignment-Id (LAC only)	a	a	a	a	a	a
[83]	Tunnel-Preference (LAC only)	–	–	–	a	a	a
[86]	Acct-Tunnel-Packets-Lost	–	–	–	–	a	a
[90]	Tunnel-Client-Auth-Id	a	a	a	a	a	a
[91]	Tunnel-Server-Auth-Id	a	a	a	a	a	a

DSL Forum VSAs in AAA Access and Accounting Messages

JUNOSe software supports the inclusion of a set of DSL Forum vendor-specific attributes (VSAs) in the following AAA access and accounting messages:

- Access-Request
- Acct-Start
- Acct-Stop
- Interim-Acct (if Acct-Stop messages are specified)

The DSL Forum VSAs convey information about the subscriber associated with the digital subscriber line (DSL) and the data rate of the DSL. When you use the **radius include dsl-forum-attributes** command to enable inclusion of the DSL Forum VSAs in these AAA messages, the router includes all of the attributes listed in Table 16 in the specified message, provided that the VSA is available in the information that the router receives from the digital subscriber line access multiplexer (DSLAM).

NOTE: JUNOSe software also supports several Juniper Networks VSAs that you can use to include DSL-related information. See *Juniper Networks VSAs* in *Chapter 6, RADIUS Attribute Descriptions*.

Table 16 lists the DSL Forum VSAs supported by JUNOSe software in Access-Request, Acct-Start, Acct-Stop, and (if Acct-Stop is specified) Interim-Acct messages. JUNOSe software uses the vendor ID assigned to the DSL Forum (3561, or DE9 in hexadecimal format) by the Internet Assigned Numbers Authority (IANA).

For information about configuring inclusion of the DSL Forum VSAs, see *DSL Forum Vendor-Specific Attributes* on page 176. For a detailed description of the DSL Forum VSAs supported by JUNOSe software, see *DSL Forum VSAs* in *Chapter 6, RADIUS Attribute Descriptions*.

Table 16: DSL Forum (Vendor ID 3561) VSAs Supported in AAA Access and Accounting Messages

Attribute Number	Attribute Name	Access-Request	Acct-Start	Acct-Stop	Interim-Acct
[26-1]	Agent-Circuit-Id	a	a	a	a
[26-2]	Agent-Remote-Id	a	a	a	a
[26-129]	Actual-Data-Rate-Upstream	a	a	a	a
[26-130]	Actual-Data-Rate-Downstream	a	a	a	a
[26-131]	Minimum-Data-Rate-Upstream	a	a	a	a
[26-132]	Minimum-Data-Rate-Downstream	a	a	a	a
[26-133]	Attainable-Data-Rate-Upstream	a	a	a	a
[26-134]	Attainable-Data-Rate-Downstream	a	a	a	a
[26-135]	Maximum-Data-Rate-Upstream	a	a	a	a

Table 16: DSL Forum (Vendor ID 3561) VSAs Supported in AAA Access and Accounting Messages (continued)

Attribute Number	Attribute Name	Access-Request	Acct-Start	Acct-Stop	Interim-Acct
[26-136]	Maximum-Data-Rate-Downstream	a	a	a	a
[26-137]	Minimum-Data-Rate-Upstream-Low-Power	a	a	a	a
[26-138]	Minimum-Data-Rate-Downstream-Low-Power	a	a	a	a
[26-139]	Maximum-Interleaving-Delay-Upstream	a	a	a	a
[26-140]	Actual-Interleaving-Delay-Upstream	a	a	a	a
[26-141]	Maximum-Interleaving-Delay-Downstream	a	a	a	a
[26-142]	Actual-Interleaving-Delay-Downstream	a	a	a	a
[26-144]	Access-Loop-Encapsulation	a	a	a	a
[26-254]	IWF-Session	a	a	a	a

CLI AAA Messages

There are four types of AAA messages used by CLI users to gain administrative access to the router. Access-Challenge attributes pertain only to CLI/telnet users.

- Access-Request
- Access-Accept
- Access-Challenge
- Access-Reject

Table 17 lists the RADIUS attributes supported for CLI AAA messages.

Table 17: CLI AAA Access Message RADIUS Attributes Supported

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Challenge	Access-Reject
[1]	User-Name	a	–	–	–
[2]	User Password	a	–	–	–
[4]	NAS-IP-Address	a	–	–	–
[6]	Service-Type	a	a	–	–
[18]	Reply-Message	–	–	a	a
[24]	State (Access-Request is only in response to an Access-Challenge)	a	–	a	–
[25]	Class	–	a	–	–
[26-1]	Virtual-Router	–	a	–	–
[26-18]	Init-CLI-Access-Level	–	a	–	–
[26-19]	Allow-All-VR-Access	–	a	–	–

Table 17: CLI AAA Access Message RADIUS Attributes Supported (continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Challenge	Access-Reject
[26-20]	Alt-CLI-Access-Level	–	a	–	–
[26-21]	Alt-CLI-Virtual-Router-Name	–	a	–	–
[26-25]	Redirect-Vrouter-Name	–	a	–	–

CLI Commands Used to Modify RADIUS Attributes

This section discusses the RADIUS Internet Engineering Task Force (IETF) attributes and the Juniper Networks vendor-specific attributes that you can configure using CLI commands.

For many attributes, you can configure the router to include the attribute in RADIUS messages. For more information, see *Including or Excluding Attributes in RADIUS Messages* on page 177.

You can also configure the router to ignore many attributes that it receives in Access-Accept messages. For more information, see *Ignoring Attributes When Receiving Access-Accept Messages* on page 178.

For a complete list of RADIUS attributes supported by JUNOSe software, see *Chapter 6, RADIUS Attribute Descriptions*.

RADIUS IETF Attributes

This section describes the RADIUS IETF attributes that you can configure using CLI commands. The attributes are listed numerically—each attribute is followed by a list of the commands that you can use to manage the attribute and descriptions of each command.

[4] NAS-IP-Address

Use the following commands to configure, manage, and display information for the NAS-IP-Address RADIUS attribute.

- **radius override nas-ip-addr tunnel-client-endpoint**
- **radius override nas-info**

radius override nas-ip-addr tunnel-client-endpoint

- Use to configure the RADIUS client (LNS) to use the tunnel-client-endpoint (LAC) IP address for the NAS-IP-Address attribute.
- Example

  host1(config)#**radius override nas-ip-addr tunnel-client-endpoint**

- Use the **no** version to restore the default address.

radius override nas-info

- Use in the correct virtual router context to override standard use of NAS-IP-Address and NAS-Identifier attributes for AAA broadcast accounting; specifies that the attributes for the authentication virtual router be included in accounting packets instead of the attributes for the virtual router that generates the accounting information.
- Example

  host1(config)#**virtual-router vrXyz1**
  host1:vrXyz1(config)#**radius override nas-info**

- Use the **no** version to restore standard use of the NAS-IP-Address and NAS-Identifier attributes.

Related Topics

- Monitoring Override Settings of RADIUS IETF Attributes on page 232

[5] NAS-Port

Use the following commands to manage and display information for the NAS-Port RADIUS attribute:

- **radius include nas-port**
- **radius nas-port-format**
- **radius nas-port-format extended**
- **radius pppoe nas-port-format unique**
- **radius vlan nas-port-format stacked**

radius include nas-port

- Use to include the NAS-Port attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include nas-port acct-start enable**

- Use the **no** version to restore the default, enable.

radius nas-port-format

- Use to set the NAS-Port format attribute for ATM and Ethernet only to either *0sssppp* or *ssss0ppp*.
- The format is a 4-octet integer. The remaining bits are not changed (8 bits VPI and 16 bits VCI; or 12 bits S-VLAN and 12 bits VLAN).
- The *s* indicates a bit used to represent the *slot;* the *p* indicates a bit used to represent the *port* from which the authentication request originates.

- Example: If the PPP user is received on a VC from the card in slot 7, port 2, then the bit pattern is either 00111010 (for *0ssssppp*) or 01110010 (for *ssss0ppp*).

  host1(config)#**radius nas-port-format 0sssppp**

- Use the **no** version to restore the default.

radius nas-port-format extended atm

radius nas-port-format extended ethernet

- Use to set the NAS-Port format attribute for ATM, Gigabit Ethernet, and 10-Gigabit Ethernet interfaces on the E120 and E320 routers only.
- The format attribute set using the **radius nas-port-format** command does not accommodate the number of bits required by the ATM interface specifier (*slot/adapter/port/vpi/vci*) or the Gigabit Ethernet and 10-Gigabit Ethernet interface specifier [*slot/adapter/port*] [*.vlanSubinterface*]. Issuing this command enables you to encode the interface information in the attribute by specifying the number of bits available for each field in the interface specifier.

NOTE: You must use this command with the **extended** keyword when you configure the NAS-Port format attribute on routers that have line modules that support more than seven physical ports.

- The default number of bits for each field in the interface specifier for ATM interfaces are:
  - Slot—5 bits
  - Adapter—0 bits
  - Port—3 bits
  - VPI—8 bits
  - VCI—16 bits
- The default number of bits for each field in the interface specifier for Gigabit Ethernet and 10-Gigabit Ethernet interfaces are:
  - Slot—5 bits
  - Adapter—0 bits
  - Port—3 bits
  - VLAN—12 bits
  - S-VLAN—12 bits
- To set valid S-VLAN widths on Gigabit Ethernet and 10-Gigabit Ethernet interfaces, you must include S-VLAN IDs in the NAS-Port attribute by issuing the **radius vlan nas-port-format stacked** command.
- The total number of bits for all fields cannot exceed 32. When the total number of bits is less than 32, the NAS-Port attribute is right-justified and the extra bits are set to 0. If you do not specify a value for a field, the number of bits is set to 0.

- Example 1—Sets the field widths for ATM interfaces

  host1(config)#**radius nas-port-format extended atm field-widths slot 4 adapter 1 vpi 7 vpi 17**

- Example 2—Sets the field widths for Gigabit Ethernet and 10-Gigabit Ethernet interfaces

  host1(config)#**radius nas-port-format extended ethernet field-widths slot 4 adapter 1 port 3 vlan 12**

- Use the **no** version to restore the default behavior of the **radius nas-port-format** command.

radius pppoe nas-port-format unique

- Use to set the NAS-Port attribute to a unique value for subscribers on PPPoE interface. This unique value is derived from the subscriber's profileHandle.
- Example

  host1(config)#**radius pppoe nas-port-format unique**

- Use the **no** version to return to the default, in which the value is determined by the interface.

radius vlan nas-port-format stacked

- Use to include the S-VLAN ID, in addition to the VLAN ID, in the NAS-Port attribute for subscribers on Ethernet interfaces.
- The VLAN ID is always included whether the S-VLAN ID inclusion feature is enabled or disabled.
- The **radius pppoe nas-port-format unique** command overrides this command.
- Example

  host1(config)#**radius vlan nas-port-format stacked**

- Use the **no** version to return to the default, in which the S-VLAN ID is not included.

Related Topics

- Monitoring the NAS-Port-Format RADIUS Attribute on page 233

[8] Framed-IP-Address

Use the following command to manage the Framed-IP-Address RADIUS attribute.

- **radius include framed-ip-addr**

radius include framed-ip-addr

- Use to include the Framed-IP-Address attribute in Acct-Start and Acct-Stop messages.

- You can control inclusion of the attribute by enabling or disabling this command.
- For RADIUS to include this attribute, an IP address must be assigned to the subscriber.
- Example

  host1(config)#**radius include framed-ip-addr acct-start enable**

- Use the **no** version to restore the default, enable.

[9] Framed-Ip-Netmask

Use the following commands to manage the Framed-IP-Netmask RADIUS attribute.

- **radius include framed-ip-netmask**
- **radius ignore framed-ip-netmask**

radius include framed-ip-netmask

- Use to include the Framed-Ip-Netmask attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include framed-ip-netmask acct-start enable**

- Use the **no** version to restore the default, enable.

radius ignore framed-ip-netmask

- Use to cause the Framed-Ip-Netmask attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- If the subnet mask is specified by the Frame-Ip-Netmask attribute in the RADIUS user profile, the router passes the mask and IP address to the CPE during IPCP negotiations. When this command is enabled, the default subnet mask 255.255.255.255 is provided by AAA and used for IPCP negotiations.
- Enabling the command guards against any breaks in the negotiation.
- Example

  host1(config)#**radius ignore framed-ip-netmask disable**

- Use the **no** version to restore the default, enable.

[13] Framed-Compression

Use the following command to manage the Framed-Compression RADIUS attribute.

- **radius include framed-compression**

radius include framed-compression

- Use to include the Framed-Compression attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include framed-compression acct-start disable**

- Use the **no** version to restore the default, enable.

[25] Class

Use the following command to manage the Class RADIUS attribute.

- **radius include class**

radius include class

- Use to include the Class attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include class acct-start disable**

- Use the **no** version to restore the default, enable.

[30] Called-Station-Id

Use the following command to manage the Called-Station-Id RADIUS attribute.

- **radius include called-station-id**

radius include called-station-id

- Use to include the Called-Station-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Called-Station-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include called-station-id acct-start enable**

- Use the **no** version to restore the default, enable.

[31] Calling-Station-Id

Use the following commands to manage information for the Calling-Station-Id RADIUS attribute.

- **radius calling-station-format**
- **radius calling-station-delimiter**
- **radius include calling-station-id**
- **radius override calling-station-id remote-circuit-id**

radius calling-station-format

- Use to specify the format of the Calling-Station-Id [31] attribute on a virtual router.
- For each field in angle brackets (< >) in the Calling-Station-Id formats, the virtual router supplies the actual value for your configuration, unless otherwise specified.
- To specify that the RADIUS client use the delimited format when the PPP user is terminated at the non-LNS E-series router, use the **delimited** keyword.
  - Format for ATM interfaces:
    < delimiter > < system name > < delimiter > < *interface* > < delimiter > < VPI > < delimiter > < VCI > < delimiter >
  - Format for Ethernet interfaces:
    < delimiter > < system name > < delimiter > < *interface* > < delimiter > < VLAN >

  Where < *interface* > is one of the following items:

  - < port name > —The default setting
  - < VP description > —Appears if you use the **atm vp-description** command to assign a text description to an individual VP on an ATM interface
  - < VC description > —Appears if you use the **atm atm1483 description** command to assign a text description to VCs on an ATM 1483 subinterface and you use the **atm1483 export-subinterface-description** command to enable sending of VC interface descriptors to AAA
- To specify that the RADIUS client use a fixed format of up to 15 characters consisting of all ASCII fields, use the **fixed-format** keyword. The maximum number of characters for each field is shown in square brackets ([ ]).
  - Format for ATM interfaces:
    < system name [4] > < slot [2] > < port [1] > < VPI [3] > < VCI [5] >
  - Format for Ethernet interfaces:
    < system name [4] > < slot [2] > < port [1] > < VLAN [8] >
  - Format for serial interfaces:
    < system name [4] > < slot [2] > < port [1] > < 0 [8] >

    Where the final 8-byte field is always 0 (zero).
  - In the case of PPP terminated at the LNS, the Calling-Station-Id attribute is based on the received L2TP calling number AVP.

- To specify that the RADIUS client use a fixed format of up to 15 characters consisting of all ASCII fields with a 1-byte slot field, 1-byte adapter field, and 1-byte port field, use the **fixed-format-adapter-embedded** keyword. The maximum number of characters for each field is shown in square brackets ([ ]).

  - Format for ATM interfaces:
    <system name [4]> <slot [1]> <adapter [1]> <port [1]>
    <VPI [3]> <VCI [5]>

  - Format for Ethernet interfaces:
    <system name [4]> <slot [1]> <adapter [1]> <port [1]>
    <VLAN [8]>

  - Format for serial interfaces:
    <system name [4]> <slot [1]> <adapter [1]> <port [1]> <0 [8]>

    Where the final 8-byte field is always 0 (zero).

  - For E120 and E320 routers, <adapter> is the number of the bay in which the I/O adapter (IOA) resides, either 0 (representing the right IOA bay on the E120 router or the upper IOA bay on the E320 router) or 1 (representing the left IOA bay on the E120 router or the lower IOA bay on the E320 router). For ERX-7xx models, ERX-14xx models, and ERX-310 routers, <adapter> is always shown as 0 (zero).

  - Slot numbers 0 through 16 are shown as ASCII characters in the 1-byte slot field according to the following translation:

Slot Number	ASCII Character	Slot Number	ASCII Character
0	0	9	9
1	1	10	A
2	2	11	B
3	3	12	C
4	4	13	D
5	5	14	E
6	6	15	F
7	7	16	G
8	8	–	–

    For example, slot 16 is shown as the ASCII character uppercase G.

- To specify that the RADIUS client use a fixed format of up to 17 characters consisting of all ASCII fields with a 2-byte slot field, 1-byte adapter field, and 2-byte port field, use the **fixed-format-adapter-new-field** keyword. The maximum number of characters for each field is shown in square brackets ([ ]).

NOTE: You must use this command with the **fixed-format-adapter-new-field** keyword when you configure the format of the Calling-Station-ID attribute on routers that have line modules that support more than seven physical ports.

- Format for ATM interfaces:
  <system name [4]> <slot [2]> <adapter [1]> <port [2]>
  <VPI [3]> <VCI [5]>
- Format for Ethernet interfaces:
  <system name [4]> <slot [2]> <adapter [1]> <port [2]>
  <VLAN [8]>
- Format for serial interfaces:
  <system name [4]> <slot [2]> <adapter [1]> <port [2]> <0 [8]>

  Where the final 8-byte field is always 0 (zero).

- For E120 and E320 routers, <adapter> is the number of the bay in which the I/O adapter (IOA) resides, either 0 or 1. For ERX-7xx models, ERX-14xx models, and ERX-310 routers, <adapter> is always shown as 0 (zero).
- Slot numbers 0 through 16 are shown as integers in the 2-byte slot field.

- Attribute 31, Calling-Station-Id, is used with Attribute 30, Called-Station-Id, in a standard way when the router is the LNS and the LAC is a dial-up LAC (not an E-series router). When the LNS receives the Calling-Station-Id and Called-Station-Id AVPs, the router includes the values as they are, with no format changes in the RADIUS messages.
- Example 1

  host1(config)#**radius calling-station-format fixed-format**

  For example, when you configure this Calling-Station-Id format on an E320 router for an ATM interface on slot 14, adapter 1, port 2, VCI 3, and VPI 4, the virtual router displays the format in ASCII as '14' '2' '003' '00004'. The adapter number does not appear in this format.

- Example 2

  host1(config)#**radius calling-station-format fixed-format-adapter-embedded**

  For example, when you configure this Calling-Station-Id format on an E320 router for an ATM interface on slot 14, adapter 1, port 2, VCI 3, and VPI 4, the virtual router displays the format in ASCII as 'E' '1' '2' '003' '00004'.

- Example 3

  host1(config)#**radius calling-station-format fixed-format-adapter-new-field**

  For example, when you configure this Calling-Station-Id format on an E320 router for an ATM interface on slot 14, adapter 1, port 2, VCI 3, and VPI 4, the virtual router displays the format in ASCII as '14' '1' '02' '003' '00004'.

- Use the **no** version to restore the default Calling-Station-Id format, **delimited**.

radius calling-station-delimiter

- Use to specify the Calling-Station-Id attribute's delimiter for DSL PPP users.
- The delimiter is one special character you select to set off items in the Calling-Station-Id's definition (for example, *#* or *%).*

- Example

  host1(config)#**radius calling-station-delimiter &**

- Use the **no** version to remove the delimiter.

radius include calling-station-id

- Use to include the Calling-Station-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include calling-station-id acct-start disable**

- Use the **no** version to restore the default, enable.

radius override calling-station-id remote-circuit-id

- Use to configure RADIUS to override the standard use of the Calling-Station-Id attribute and instead use the remote circuit ID transmitted from a DSLAM device.
- Example

  host1(config)#**radius override calling-station-id remote-circuit-id**

- Use the **no** version to restore the default Calling-Station-ID value, which is the telephone number from which the call originated.

Related Topics

- Monitoring Override Settings of RADIUS IETF Attributes on page 232
- Monitoring the Calling-Station-Id RADIUS Attribute on page 233

[32] NAS-Identifier

Use the following commands to manage and display information for the NAS-Identifier RADIUS attribute.

- **radius nas-identifier**
- **radius include nas-identifier**
- **radius override nas-info**
- **radius remote-circuit-id-format**
- **radius remote-circuit-id-delimiter**

radius nas-identifier

- Use to set a value for the NAS-Identifier attribute. This value is used in the NAS-Identifier attribute for authentication and accounting requests.
- Example

  host1(config)#**radius nas-identifier fox**

- Use the **no** version to delete the NAS-Identifier.

radius include nas-identifier

- Use to include the NAS-Identifier attribute in Access-Request, Acct-Start, Acct-Stop, Acct-On, and Acct-Off messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include nas-identifier acct-start disable**

- Use the **no** version to restore the default, enable.

radius override nas-info

- Use in the correct virtual router context to override the standard use of NAS-IP-Address and NAS-Identifier attributes for AAA broadcast accounting; specifies that the attributes for the authentication virtual router be included in accounting packets instead of the attributes for the virtual router that generates the accounting information.
- Example

  host1(config)#**virtual-router vrXyz1**
  host1:vrXyz1(config)#**radius override nas-info**

- Use the **no** version to restore the standard use of the NAS-IP-Address and NAS-Identification attributes.

radius remote-circuit-id-format

- Use to configure the format of the PPPoE remote circuit ID value captured from a DSLAM.
- You can format the PPPoE remote circuit ID value to include either or both of the agent-circuit-ID (suboption 1) and agent-remote-id (suboption 2) suboptions of the DHCP relay agent information option (option 82) or the PPPoE intermediate agent tags.
- By default, the router formats the PPPoE remote circuit ID to include only the agent-circuit-id suboption.

- You can use this command to configure the following nondefault formats for the PPPoE remote circuit ID value:
  - Include either or both of the agent-circuit-id and agent-remote-id suboptions, with or without the NAS-Identifier [32] RADIUS attribute
  - Append the agent-circuit-id suboption value to an interface specifier that is consistent with the recommended format in the DSL Forum Technical Report (TR)-101—Migration to Ethernet-Based DSL Aggregation (April 2006).
- For more information about how to use this command, see *Using the PPPoE Remote Circuit ID to Identify Subscribers* and *Configuring PPPoE Remote Circuit ID Capture* in *JUNOSe Link Layer Configuration Guide, Chapter 7, Configuring Point-to-Point Protocol over Ethernet*.
- Examples

  host1(config)#**radius remote-circuit-id-format nas-identifier agent-circuit-id agent-remote-id**

  host1(config)#**radius remote-circuit-id-format dsl-forum-1**

- Use the **no** version to restore the default format, agent-circuit-id.

radius remote-circuit-id-delimiter

- Use to configure the delimiter character that the router uses to set off multiple components in the format of the PPPoE remote circuit ID value captured from a DSLAM.
- For information about how to use this command, see *Configuring PPPoE Remote Circuit ID Capture* in *JUNOSe Link Layer Configuration Guide, Chapter 7, Configuring Point-to-Point Protocol over Ethernet*.
- Example

  host1(config)#**radius remote-circuit-id-delimiter !**

- Use the **no** version to restore the default delimiter character, #.

Related Topics

- Monitoring Override Settings of RADIUS IETF Attributes on page 232
- Monitoring the NAS-Identifier RADIUS Attribute on page 234
- Monitoring the Format of the Remote-Circuit-ID for RADIUS on page 234
- Monitoring the Delimiter Character in the Remote-Circuit-ID for RADIUS on page 234

[41] Acct-Delay-Time

Use the following commands to manage and display information for the Acct-Delay-Timer RADIUS attribute.

- **radius include acct-delay-time**

radius include acct-delay-time

- Use to include the Acct-Delay-Time attribute in Acct-On or Acct-Off messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-delay-time acct-on enable**

- Use the **no** version to restore the default, enable.

[44] Acct-Session-Id

Use the following commands to manage and display information for the Acct-Session-Id RADIUS attribute.

- **radius include acct-session-id**
- **radius acct-session-id-format**

radius include acct-session-id

- Use to include the Acct-Session-Id attribute in Access-Request, Acct-On, or Acct-Off messages.
- You can control inclusion of the Acct-Session-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-session-id access-request disable**

- Use the **no** version to restore the default, enable.

radius acct-session-id-format

- Use to set the Acct-Session-Id attribute format. Two formats are supported:
  - **description**—Configures RADIUS client to use the generic format: erx < interface identifier > : < hex number > . For example: **erx atm 12/1:0.3:0000ef1**
  - **decimal**—Configures the RADIUS client to use a decimal format. For example: **435264**
- Example

  host1(config)#**radius acct-session-id-format decimal**

- Use the **no** version to negate the Acct-Session-Id format.

[45] Acct-Authentic

Use the following command to manage the Acct-Authentic RADIUS attribute.

- **radius include acct-authentic**

radius include acct-authentic

- Use to include the Acct-Authentic attribute in Acct-On or Acct-Off messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-authentic acct-on enable**

- Use the **no** version to restore the default, enable.

[49] Acct-Terminate-Cause

Use the following command to manage the Acct-Terminate-Cause RADIUS attribute.

- **radius include acct-terminate-cause**

radius include acct-terminate-cause

- Use to include the Acct-Terminate-Cause attribute in Acct-Off messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-terminate-cause acct-off disable**

- Use the **no** version to restore the default, enable.

[50] Acct-Multi-Session-Id

Use the following command to manage the Acct-Multi-Session-Id RADIUS attribute.

- **radius include acct-multi-session-id**

radius include acct-multi-session-id

- Use to include the Acct-Multi-Session-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Acct-Multi-Session-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-multi-session-id acct-stop disable**

- Use the **no** version to restore the default, enable for accounting messages and disable for access requests.

[51] Acct-Link-Count

Use the following command to manage the Acct-Link-Count RADIUS attribute.

- **radius include acct-link-count**

radius include acct-link-count

- Use to include the Acct-Link-Count attribute in Acct-Start and Acct-Stop messages.
- You can control inclusion of the Acct-Input-Gigawords attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-link-count acct-stop disable**

- Use the **no** version to restore the default, enable.

[52] Acct-Input-Gigawords

Use the following command to manage the Acct-Input-Gigawords RADIUS attribute.

- **radius include input-gigawords**

radius include input-gigawords

- Use to include the Acct-Input-Gigawords attribute in Acct-Stop messages.
- You can control inclusion of the Acct-Input-Gigawords attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include input-gigawords acct-stop disable**

- Use the **no** version to restore the default, enable.

[53] Output-Gigawords

Use the following command to manage the Acct-Output-Gigawords RADIUS attribute.

- **radius include output-gigawords**

radius include output-gigawords

- Use to include the Acct-Output-Gigawords attribute in Acct-Stop messages.
- You can control inclusion of the Acct-Output-Gigawords attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include output-gigawords acct-stop enable**

- Use the **no** version to restore the default, enable.

[55] Event-Timestamp

Use the following command to manage the Acct-Output-Gigawords RADIUS attribute.

- **radius include event-timestamp**

radius include event-timestamp

- Use to include the Event-Timestamp attribute in Acct-Start, Acct-Stop, Acct-On, or Acct-Off messages.
- You can control inclusion of the Event-Timestamp attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include event-timestamp acct-on enable**

- Use the **no** version to restore the default, enable.

[61] NAS-Port-Type

Use the following commands to manage and display information for the NAS-Port-Type RADIUS attribute.

- **radius dsl-port-type**
- **radius ethernet-port-type**
- **radius include nas-port-type**

radius dsl-port-type

- Use to configure the NAS-Port-Type attribute for the DSL port type.
- This attribute can have several values. If the interface (port) is DSL, then the attribute can have any value listed in the command and uses the value configured. If the interface (port) is Ethernet, then it sets the attribute to Ethernet and disregards the parameter set with this command. Options include:
  - **adsl-cap**—Asymmetric DSL, carrierless amplitude phase (CAP) modulation
  - **adsl-dmt**—Asymmetric DSL, discrete multitone (DMT)
  - **idsl**—ISDN DSL
  - **sdsl**—Symmetric DSL
  - **virtual**—Virtual
  - **xdsl**—DSL of unknown type
- Example

  host1(config)#**radius dsl-port-type xdsl**

- Use the **no** version to restore the default, xdsl.

radius ethernet-port-type

- Use to set the NAS-Port-Type attribute for Ethernet interfaces to **ethernet** or **virtual**.
- Example

  host1(config)#**radius ethernet-port-type virtual**

- Use the **no** version to restore the default, ethernet.

radius include nas-port-type

- Use to include the NAS-Port-Type attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include nas-port-type acct-start enable**

- Use the **no** version to restore the default, enable.

Related Topics

- Monitoring the DSL-Port-Type RADIUS Attribute on page 235

[64] Tunnel-Type

Use the following command to manage the Tunnel-Type RADIUS attribute.

- **radius include tunnel-type**

radius include tunnel-type

- Use to include the Tunnel-Type attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the Tunnel-Type attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-type access-request enable**

- Use the **no** version to restore the default, enable.

[65] Tunnel-Medium-Type

Use the following command to manage the Tunnel-Type-Medium RADIUS attribute.

- **radius include tunnel-medium-type**

radius include tunnel-medium-type

- Use to include the Tunnel-Medium-Type attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the Tunnel-Medium-Type attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-medium-type acct-start enable**

- Use the **no** version to restore the default, enable.

[66] Tunnel-Client-Endpoint

Use the following command to manage the Tunnel-Client-Endpoint RADIUS attribute.

- **radius include tunnel-client-endpoint**

radius include tunnel-client-endpoint

- Use to include the Tunnel-Client-Endpoint attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the Tunnel-Client-Endpoint attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-client-endpoint acct-start enable**

- Use the **no** version to restore the default, enable.

[67] Tunnel-Server-Endpoint

Use the following command to manage the Tunnel-Server-Endpoint RADIUS attribute.

- **radius include tunnel-server-endpoint**

radius include tunnel-server-endpoint

- Use to include the Tunnel-Server-Endpoint attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the Tunnel-Server-Endpoint attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-server-endpoint acct-stop disable**

- Use the **no** version to restore the default, enable.

[68] Acct-Tunnel-Connection

Use the following command to manage the Acct-Tunnel-Connection RADIUS attribute.

- **radius include acct-tunnel-connection**

radius include acct-tunnel-connection

- Use to include the Acct-Tunnel-Connection attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Acct-Tunnel-Connection attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include acct-tunnel-connection acct-stop enable**

- Use the **no** version to restore the default, enable.

[77] Connect-Info

Use the following commands to manage and display information for the Connect-Info RADIUS attribute.

- **radius connect-info-format l2tp-connect-speed**
- **radius include connect-info**

radius connect-info-format

- Use on the LNS to enable the generation of the RADIUS Connect-Info attribute and to specify the attribute's format. The attribute is based on the L2TP connect-speed AVPs for received (RX) speed (AVP 38) and transmit (TX) speed (AVP 24). See *Configuring the RX Speed on the LAC* in *Chapter 12, Configuring an L2TP LAC* for information about generating the RX and TX speed AVPs.
- The Connect-Info attribute is a string in the following format; the attribute is generated whenever the TX speed is not zero.

  tx-speed [/rx-speed]

- The TX speed is always included in the attribute when the speed is not zero; however, inclusion of the RX speed depends on the keyword you use with the command.
  - Use the **l2tp-connect-speed** keyword to specify that the RX speed is only included when it is not zero and differs from the TX speed.
  - Example

    host1(config)#**radius connect-info-format l2tp-connect-speed**

- Use the **l2tp-connect-speed-rx-when-equal** keyword to specify that the RX speed is always included when it is not zero.
- Example

  host1(config)#**radius connect-info-format l2tp-connect-speed-rx-when-equal**

- Use the **no** version to disable the inclusion of the RX speed when it is the same as the TX speed.

radius include connect-info

- Use to include the Connect-Info attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Connect-Info attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include connect-info access-request disable**

- Use the **no** version to restore the default, enable.

Related Topics

- Monitoring the Connect-Info RADIUS Attribute on page 235

[82] Tunnel-Assignment-Id

Use the following command to manage the Tunnel-Assignment-Id RADIUS attribute.

- **radius include tunnel-assignment-id**

radius include tunnel-assignment-id

- Use to include the Tunnel-Assignment-Id attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the Tunnel-Assignment-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-assignment-id acct-stop enable**

- Use the **no** version to restore the default, enable.

[83] Tunnel-Preference

Use the following command to manage the Tunnel-Preference RADIUS attribute.

- **radius include tunnel-preference**

radius include tunnel-preference

- Use to include the Tunnel-Preference attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the Tunnel-Preference attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-preference acct-start enable**

- Use the **no** version to restore the default, enable.

[87] NAS-Port-Id

Use the following commands to manage and show information for the NAS-Port-Id RADIUS attribute.

- **aaa intf-desc-format include**
- **radius include nas-port-id**
- **radius override nas-port-id remote-circuit-id**

aaa intf-desc-format include

- Use to specify whether the router includes the subinterface number or adapter in the interface description it passes to RADIUS for inclusion in the NAS-Port-Id attribute. By default, the subinterface and adapter are sent (the commands are enabled).
- Examples

  host1#**aaa intf-desc-format include sub-intf disable**
  host1#**aaa intf-desc-format include adapter enable**

- Use the **no** version to remove the configuration.

radius include nas-port-id

- Use to include the NAS-Port-Id attribute in the Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the NAS-Port-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include nas-port-id access-request enable**

- Use the **no** version to restore the default, enable.

radius override nas-port-id remote-circuit-id

- Use to configure RADIUS to override the standard use of the NAS-Port-Id attribute and instead use the remote circuit ID transmitted from a DSLAM device.
- Example

  host1(config)#**radius override nas-port-id remote-circuit-id**

- Use the **no** version to restore the default NAS-Port-ID value, which is the physical interface of the NAS that is authenticating the user.

Related Topics

- Monitoring Override Settings of RADIUS IETF Attributes on page 232
- Monitoring the NAS-Port-ID RADIUS Attribute on page 236

[90] Tunnel-Client-Auth-Id

Use the following command to manage the Tunnel-Client-Auth-Id RADIUS attribute.

- **radius include tunnel-client-auth-id**

radius include tunnel-client-auth-id

- Use to include the Tunnel-Client-Auth-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Tunnel-Client-Auth-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-client-auth-id access-request disable**

- Use the **no** version to restore the default, enable.

[91] Tunnel-Server-Auth-Id

Use the following command to manage the Tunnel-Server-Auth-Id RADIUS attribute.

- **radius include tunnel-server-auth-id**

radius include tunnel-server-auth-id

- Use to include the Tunnel-Server-Auth-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Tunnel-Server-Auth-Id attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-server-auth-id acct-start enable**

- Use the **no** version to restore the default, enable.

[96] Framed-Interface-Id

Use the following command to manage the Framed-Interface-Id RADIUS attribute.

- **radius include framed-interface-id**

radius include framed-interface-id

- Use to include the Framed-Interface-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Framed-Interface-Id attribute by enabling or disabling this command.
- For RADIUS to include this attribute, an IPv6 interface ID must be assigned to the subscriber.
- Example

  host1(config)#**radius include framed-interface-id acct-start enable**

- Use the **no** version to restore the default, disable.

[97] Framed-Ipv6-Prefix

Use the following command to manage the Framed-Ipv6-Prefix RADIUS attribute.

- **radius include framed-ipv6-prefix**

radius include framed-ipv6-prefix

- Use to include the Framed-Ipv6-Prefix attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Framed-Ipv6-Prefix attribute by enabling or disabling this command.
- For RADIUS to include this attribute, at least one IPv6 prefix must be assigned to the subscriber.
- Example

  host1(config)#**radius include framed-ipv6-prefix acct-start enable**

- Use the **no** version to restore the default, disable.

[188] Ascend-Num-In-Multilink

Use the following command to manage the Ascend-Num-In-Multilink attribute.

- **radius include ascend-num-in-multilink**

radius include ascend-num-in-multilink

- Use to include the Ascend-Num-In-Multilink attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Ascend-Num-In-Multilink attribute by enabling or disabling this command.

- Example

  host1(config)#**radius include ascend-num-in-multilink acct-start enable**

- Use the **no** version to restore the default, disable.

All Tunnel Server Attributes

Use the following command to manage all tunnel server RADIUS attributes.

- **radius include tunnel-server-attributes**

radius include tunnel-server-attributes

- Use to include all supported tunnel server attributes in Access-Request, Acct-Start, or Acct-Stop messages.
- When the router functions as an LNS with a terminating PPP, then the LAC tunnel attributes are included.
- You can control inclusion of all tunnel server attributes by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-server-attributes access-request enable**

- Use the **no** version to restore the default, disable.

Juniper Networks Vendor-Specific Attributes

This section describes the Juniper Networks vendor-specific attributes (VSAs) that you can configure using CLI commands. The attributes are listed numerically and are followed by descriptions about the commands that you can use to manage the attribute.

[26-1] Virtual-Router

Use the following command to manage the Virtual-Router RADIUS attribute.

- **radius ignore virtual-router**

radius ignore virtual-router

- Use to cause the Virtual-Router attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- Example

  host1(config)#**radius ignore virtual-router enable**

- Use the **no** version to restore the default, disable.

[26-10] Ingress-Policy-Name

Use the following commands to manage the Ingress-Policy-Name RADIUS attribute.

- **radius include ingress-policy-name**
- **radius ignore ingress-policy-name**

radius include ingress-policy-name

- Use to include the Ingress-Policy-Name attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include ingress-policy-name acct-start enable**

- Use the **no** version to restore the default.

radius ignore ingress-policy-name

- Use to cause the Ingress-Policy-Name attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command. The default is **disable**.
- Example

  host1(config)#**radius ignore ingress-policy-name enable**

- Use the **no** version to restore the default, enable.

[26-11] Egress-Policy-Name

Use the following commands to manage the Egress-Policy-Name RADIUS attribute.

- **radius include egress-policy-name**
- **radius ignore egress-policy-name**

radius include egress-policy-name

- Use to include the Egress-Policy-Name attribute in Acct-Start or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include egress-policy-name acct-start enable**

- Use the **no** version to restore the default, enable.

radius ignore egress-policy-name

- Use to cause the Egress-Policy-Name attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- Example

  host1(config)#**radius ignore egress-policy-name enable**

- Use the **no** version to restore the default, disable.

[26-14] Service-Category

Use the following command to manage the Service-Category RADIUS attribute.

- **radius ignore atm-service-category**

radius ignore atm-service-category

- Use to cause the Service-Category attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- Example

  host1(config)#**radius ignore atm-service-category enable**

- Use the **no** version to restore the default, disable.

[26-15] PCR

Use the following command to manage the PCR RADIUS attribute.

- **radius ignore atm-pcr**

radius ignore atm-pcr

- Use to cause the PCR attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- Example

  host1(config)#**radius ignore atm-pcr enable**

- Use the **no** version to restore the default, disable.

[26-16] SCR

Use the following command to manage the SCR RADIUS attribute.

- **radius ignore atm-scr**

radius ignore atm-scr

- Use to cause the SCR attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- Example

  host1(config)#**radius ignore atm-scr enable**

- Use the **no** version to restore the default, disable.

[26-17] MBS

Use the following command to manage the MBS RADIUS attribute.

- **radius ignore atm-mbs**

radius ignore atm-mbs

- Use to cause the MBS attribute to be ignored in Access-Accept messages.
- You can control this behavior by enabling or disabling this command.
- Example

  host1(config)#**radius ignore atm-mbs enable**

- Use the **no** version to restore the default, disable.

[26-24] Pppoe-Description

Use the following command to manage the Pppoe-Description RADIUS attribute.

- **radius include pppoe-description**

radius include pppoe-description

- Use to include the Pppoe-Description attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the Pppoe-Description attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include pppoe-description acct-start enable**

- Use the **no** version to restore the default, enable.

[26-35] Acct-Input-Gigapackets

Use the following command to manage the Acct-Input-Gigapackets RADIUS attribute.

- **radius include input-gigapkts**

radius include input-gigapkts

- Use to include Acct-Input-Gigapackets in Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include input-gigapkts acct-stop disable**

- Use the **no** version to restore the default, enable.

[26-36] Acct-Output-Gigapackets

Use the following command to manage the Acct-Output-Gigapackets RADIUS attribute.

- **radius include output-gigapkts**

radius include output-gigapkts

- Use to include the Acct-Output-Gigapackets attribute in Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include output-gigapkts acct-stop disable**

- Use the **no** version to restore the default, enable.

[26-44] Tunnel-Interface-Id

Use the following command to manage the Tunnel-Interface-Id RADIUS attribute.

- **radius include tunnel-interface-id**

radius include tunnel-interface-id

- Use to include the Tunnel-Interface-Id attribute in Access-Request, Acct-Start, or Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include tunnel-interface-id enable**

- Use the **no** version to restore the default, disable.

[26-51] Disconnect-Cause

Use the following command to manage the Disconnect-Cause RADIUS attribute.

- **radius include l2tp-ppp-disconnect-cause**

radius include l2tp-ppp-disconnect-cause

- Use to include the Disconnect-Cause attribute in Acct-Stop and Acct-Tunnel-Link-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include l2tp-ppp-disconnect-cause acct-stop-enable**

- Use the **no** version to restore the default, disable.

[26-53] Service-Description

Use the following command to manage the Service-Description RADIUS attribute.

- **radius include profile-service-description**

radius include profile-service-description

- Use to include the Service-Description attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include profile-service-description acct-stop enable**

- Use the **no** version to restore the default, disable.

[26-55] DHCP-Options

Use the following command to manage the DHCP-Options RADIUS attribute.

- **radius include dhcp-options**

radius include dhcp-options

- Use to include the DHCP-Options attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include dhcp-options acct-stop enable**

- Use the **no** version to restore the default, disable.

[26-56] DHCP-MAC-Address

Use the following command to manage the DHCP-MAC-Address RADIUS attribute.

- **radius include dhcp-mac-address**

radius include dhcp-mac-address

- Use to include the DHCP-MAC-Address attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include dhcp-mac-address acct-stop enable**

- Use the **no** version to restore the default, disable.

[26-57] DHCP-GI-Address

Use the following command to manage the DHCP-GI-Address RADIUS attribute.

- **radius include dhcp-gi-address**

radius include dhcp-gi-address

- Use to include the DHCP-GI-Address attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the attribute by enabling or disabling this command.
- Example

  host1(config)#**radius include dhcp-gi-address acct-stop enable**

- Use the **no** version to restore the default, disable.

[26-62] MLPPP-Bundle-Name

Use the following command to manage the MLPPP-Bundle-Name RADIUS attribute.

- **radius include mlppp-bundle-name**

radius include mlppp-bundle-name

- Use to include the MLPPP-Bundle-Name attribute in Access-Request, Acct-Start, Interim-Acct, or Acct-Stop messages.
- You can control inclusion of the MLPPP-Bundle-Name attribute by enabling or disabling this command.
- There is no explicit command to include the MLPPP-Bundle-Name attribute in Interim-Acct messages; however, the attribute is automatically included in Interim-Acct messages when the attribute is enabled for Acct-Stop messages.

- Example

  host1(config)#**radius include mlppp-bundle-name acct-start enable**

- Use the **no** version to restore the default, disable.

[26-63] Interface-Desc

Use the following command to manage the Interface-Desc RADIUS attribute.

- **radius include interface-description**

radius include interface-description

- Use to include the Interface-Desc attribute, with the subscriber's access interface description, in Access-Request, Acct-Start, Interim-Acct, or Acct-Stop messages.
- You can control inclusion of the Interface-Desc attribute by enabling or disabling this command. Inclusion is disabled by default.
- There is no explicit command to include the Interface-Desc attribute in Interim-Acct messages; however, the attribute is automatically included in Interim-Acct messages when the attribute is enabled for Acct-Stop messages.
- Example

  host1(config)#**radius include interface-description acct-start enable**

- Use the **no** version to restore the default, disable.

[26-81] L2C-Information

Use the following command to manage the L2C-Information RADIUS attribute.

- **radius include access-loop-parameters**

radius include access-loop-parameters

- Use to include the L2C-Information attribute in Access-Request messages.
- You can control inclusion of the L2C-Information attribute by enabling or disabling this command. Inclusion is disabled by default.
- Example

  host1(config)#**radius include access-loop-parameters access-request enable**

- Use the **no** version to restore the default, disable.

[26-92] L2C-Up-Stream-Data

Use the following command to manage the L2C-Up-Stream-Data RADIUS attribute.

- **radius include l2c-upstream-data**

radius include l2c-upstream-data

- Use to include the L2C-Up-Stream-Data attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the L2C-Up-Stream-Data attribute by enabling or disabling this command. Inclusion is disabled by default.
- Example

  host1(config)#**radius include l2c-upstream-data access-request enable**

- Use the **no** version to restore the default, disable.

[26-93] L2C-Down-Stream-Data

Use the following command to manage the L2C-Down-Stream-Data RADIUS attribute.

- **radius include l2c-downstream-data**

radius include l2c-downstream-data

- Use to include the L2C-Down-Stream-Data attribute in Access-Request, Acct-Start, and Acct-Stop messages.
- You can control inclusion of the L2C-Down-Stream-Data attribute by enabling or disabling this command. Inclusion is disabled by default.
- Example

  host1(config)#**radius include l2c-downstream-data access-request enable**

- Use the **no** version to restore the default, disable.

ANCP-Related Juniper Networks VSAs

You use the **radius include** command to specify information about Access Node Control Protocol (ANCP), also known as Layer 2 Control (L2C), that you want to include in the RADIUS Access-Request, Acct-Start, and Acct-Stop messages. Also, if you specify Acct-Stop messages, the router includes ANCP information in Interim-Acct messages that the router sends to RADIUS. By default, the router does not include the ANCP-related information provided by the Juniper Networks VSAs in RADIUS messages.

These Juniper Networks ANCP-related VSAs are based on definitions in GSMP extensions for layer2 control (L2C) Topology Discovery and Line Configuration—draft-wadhwa-gsmp-l2control-configuration-00.txt (July 2006 expiration).

radius include l2cd-keyword

- Use to include ANCP-related Juniper Networks VSAs in Access-Request, Acct-Start, and Acct-Stop messages that the router sends to RADIUS. If you enable inclusion of the ANCP-related VSAs in Acct-Stop messages, the router also includes the VSAs in Interim-Acct messages. Inclusion is disabled by default.
- You must enable ANCP discovery with the **discovery-mode** command prior to configuring the **radius include** command with the ANCP-related VSAs. Configuring discovery mode enables the RADIUS authentication server to retrieve ANCP information.
- Table 18 lists the ANCP (L2C)-related keywords that you can use in the **radius include** command and the associated Juniper Networks VSAs. The table also indicates the mappings between ANCP parameters and the VSAs.

Table 18: ANCP (L2C)-Related Keywords for radius include Command

Command Keyword	Juniper Networks VSA Number	Juniper Networks VSA Name	ANCP Type	ANCP Subtype
l2cd-acc-loop-cir-id	[26-110]	Acc-Loop-Cir-Id	1	–
l2cd-acc-aggr-cir-id-bin	[26-111]	Acc-Aggr-Cir-Id-Bin	2	–
l2cd-acc-aggr-cir-id-asc	[26-112]	Acc-Aggr-Cir-Id-Asc	3	–
l2cd-act-data-rate-up	[26-113]	Act-Data-Rate-Up	4	129
l2cd-act-data-rate-dn	[26-114]	Act-Data-Rate-Dn	4	130
l2cd-min-data-rate-up	[26-115]	Min-Data-Rate-Up	4	131
l2cd-min-data-rate-dn	[26-116]	Min-Data-Rate-Dn	4	132
l2cd-att-data-rate-up	[26-117]	Att-Data-Rate-Up	4	133
l2cd-att-data-rate-dn	[26-118]	Att-Data-Rate-Dn	4	134
l2cd-max-data-rate-up	[26-119]	Max-Data-Rate-Up	4	135
l2cd-max-data-rate-dn	[26-120]	Max-Data-Rate-Dn	4	136
l2cd-min-lp-data-rate-up	[26-121]	Min-LP-Data-Rate-Up	4	137
l2cd-min-lp-data-rate-dn	[26-122]	Min-LP-Data-Rate-Dn	4	138
l2cd-max-interlv-delay-up	[26-123]	Max-Interlv-Delay-Up	4	139
l2cd-act-interlv-delay-up	[26-124]	Act-Interlv-Delay-Up	4	140
l2cd-max-interlv-delay-dn	[26-125]	Max-Interlv-Delay-Dn	4	141
l2cd-act-interlv-delay-dn	[26-126]	Act-Interlv-Delay-Dn	4	142
l2cd-dsl-line-state	[26-127]	DSL-Line-State	4	143
l2cd-dsl-type	[26-128]	DSL-Type	4	144

- Example

  host1(config)#**radius include l2cd-acc-loop-cir-id acct-start enable**

- Use the **no** version to restore the default behavior, disable.

NOTE: JUNOSe software continues to support DSL Forum VSAs (vendor ID 3561) that you can use to include DSL-related information in RADIUS messages. See *DSL Forum Vendor-Specific Attributes* on page 176.

Related Topics

- To display a list of attributes that are included in RADIUS messages, see *Monitoring Included RADIUS Attributes* on page 236

DSL Forum Vendor-Specific Attributes

You can use the **radius include dsl-forum-attributes** command to control the inclusion of a set of DSL Forum VSAs in Access-Request, Acct-Start, Acct-Stop, and (if Acct-Stop messages are specified) Interim-Acct messages that the router sends to RADIUS.

The DSL Forum VSAs, as defined in RFC 4679—DSL Forum Vendor-Specific RADIUS Attributes (September 2006), convey information about the associated subscriber for and data rate of the DSL. A service provider might find it useful to enable inclusion of the DSL Forum VSAs in RADIUS messages in order to bill subscribers for different classes of service based on the data rate of their DSL connection.

NOTE: JUNOSe software also supports several Juniper Networks VSAs that you can use to include DSL-related information. See *ANCP-Related Juniper Networks VSAs* on page 174 and *Juniper Networks VSAs* in *Chapter 6, RADIUS Attribute Descriptions*.

The router receives data containing one or more of the DSL Forum VSAs from a DSLAM connected to the router via a PPPoE interface. When you enable the inclusion of the DSL Forum VSAs in these RADIUS messages, the router includes all of the following attributes in the specified message type, provided that the VSA is available in the information that the router receives from the DSLAM.

NOTE: The router uses the vendor ID assigned to the DSL Forum (3561, or DE9 in hexadecimal format) by the Internet Assigned Numbers Authority (IANA) for the DSL Forum VSAs.

Agent-Circuit-Id [26-1]	Maximum-Data-Rate-Downstream [26-136]
Agent-Remote-Id [26-2]	Minimum-Data-Rate-Upstream-Low-Power [26-137]
Actual-Data-Rate-Upstream [26-129]	Minimum-Data-Rate-Downstream-Low-Power [26-138]
Actual-Data-Rate-Downstream [26-130]	Maximum-Interleaving-Delay-Upstream [26-139]
Minimum-Data-Rate-Upstream [26-131]	Actual-Interleaving-Delay-Upstream [26-140]

Minimum-Data-Rate-Downstream [26-132]	Maximum-Interleaving-Delay-Downstream [26-141]
Attainable-Data-Rate-Upstream [26-133]	Actual-Interleaving-Delay-Downstream [26-142]
Attainable-Data-Rate-Downstream [26-134]	Access-Loop-Encapsulation [26-144]
Maximum-Data-Rate-Upstream [26-135]	IWF-Session [26-254]

For information about enabling the QoS downstream rate application to obtain downstream rates from the Actual-Data-Rate-Downstream [26-130] DSL Forum VSA, see *JUNOSe Quality of Service Configuration Guide, Chapter 29, Configuring the Downstream Rate Using QoS Parameters*.

For a more detailed description of the DSL Forum VSAs, see *DSL Forum VSAs* in *Chapter 6, RADIUS Attribute Descriptions*.

radius include dsl-forum-attributes

- Use to include the set of DSL Forum VSAs in Access-Request, Acct-Start, and Acct-Stop messages that the router sends to RADIUS. If you enable inclusion of the DSL Forum VSAs in Acct-Stop messages, the router also includes the VSAs in Interim-Acct messages.
- You can control inclusion of the DSL Forum VSAs in the specified message type by enabling or disabling this command. Inclusion is disabled by default.
- When you enable inclusion of the DSL Forum VSAs for a specified message type, the router includes in that message all of the DSL Forum attributes that it receives from the DSLAM.
- Example

  host1(config)#**radius include dsl-forum-attributes access-request enable**

- Use the **no** version to restore the default behavior, disable.

Including or Excluding Attributes in RADIUS Messages

For many attributes, you can configure the router to include or exclude the attribute in RADIUS messages.

radius include

- Use to enable or disable the inclusion of RADIUS attributes in Acct-On, Acct-Off, Access-Request, Acct-Start, and Acct-Stop messages.
- Examples

  host1(config)#**radius include ingress-policy-name acct-start enable**

  host1(config)#**radius include tunnel-type access-request disable**

- Use the **no** version to restore the default, disable.

Related Topics

- To see a list of the attributes that you can include or exclude, see *Monitoring Included RADIUS Attributes* on page 236

Ignoring Attributes When Receiving Access-Accept Messages

You can configure the router to ignore or use many attributes that it receives in Access-Accept messages.

radius ignore

- Use to specify that a RADIUS attribute be ignored or be accepted from Access-Accept messages.
- Use the **enable** keyword to specify that the RADIUS client ignore the attribute from the RADIUS server or the **disable** keyword to use the attribute.
- Examples

  host1(config)#**radius ignore atm-scr enable**

  host1(config)#**radius ignore framed-ip-netmask disable**

- Use the **no** version to restore the default, enable.

Related Topics

- To see the list of attributes that the router uses or ignores, see *Monitoring Ignored RADIUS Attributes* on page 238