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# JunosE™ Software for E Series™ Broadband Services Routers

## RADIUS Server and Attributes

Release

13.3.x



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Published: 2012-09-24

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*JunosE™ Software for E Series™ Broadband Services Routers RADIUS Server and Attributes*  
Release 13.3.x  
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Revision History  
October 2012—FRS JunosE 13.3.x

The information in this document is current as of the date on the title page.

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- Audience on page ix
- E Series and JunosE Text and Syntax Conventions on page ix
- Obtaining Documentation on page xi
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## E Series and JunosE Documentation and Release Notes

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For a list of related JunosE documentation, see  
<http://www.juniper.net/techpubs/software/index.html> .

If the information in the latest release notes differs from the information in the documentation, follow the *JunosE Release Notes*.

To obtain the most current version of all Juniper Networks<sup>®</sup> technical documentation, see the product documentation page on the Juniper Networks website at  
<http://www.juniper.net/techpubs/> .

## Audience

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This guide is intended for experienced system and network specialists working with Juniper Networks E Series Broadband Services Routers in an Internet access environment.

## E Series and JunosE Text and Syntax Conventions

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Table 1 on page x defines notice icons used in this documentation.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2 on page x defines text and syntax conventions that we use throughout the E Series and JunosE documentation.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
<b>Bold text like this</b>	Represents commands and keywords in text.	<ul style="list-style-type: none"> <li>Issue the <b>clock source</b> command.</li> <li>Specify the keyword <b>exp-msg</b>.</li> </ul>
<b>Bold text like this</b>	Represents text that the user must type.	<b>host1(config)#traffic class low-loss1</b>
Fixed-width text like this	Represents information as displayed on your terminal's screen.	<b>host1#show ip ospf 2</b>  Routing Process OSPF 2 with Router ID 5.5.0.250  Router is an Area Border Router (ABR)
<i>Italic text like this</i>	<ul style="list-style-type: none"> <li>Emphasizes words.</li> <li>Identifies variables.</li> <li>Identifies chapter, appendix, and book names.</li> </ul>	<ul style="list-style-type: none"> <li>There are two levels of access: <i>user</i> and <i>privileged</i>.</li> <li><i>clusterId</i>, <i>ipAddress</i>.</li> <li><i>Appendix A, System Specifications</i></li> </ul>
Plus sign (+) linking key names	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
<b>Syntax Conventions in the Command Reference Guide</b>		
Plain text like this	Represents keywords.	terminal length
<i>Italic text like this</i>	Represents variables.	<i>mask</i> , <i>accessListName</i>

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
(pipe symbol)	Represents a choice to select one keyword or variable to the left or to the right of this symbol. (The keyword or variable can be either optional or required.)	diagnostic   line
[ ] (brackets)	Represent optional keywords or variables.	[ internal   external ]
[ ]* (brackets and asterisk)	Represent optional keywords or variables that can be entered more than once.	[ level1   level2   l1 ]*
{ } (braces)	Represent required keywords or variables.	{ permit   deny } { in   out }  { clusterId   ipAddress }

## Obtaining Documentation

To obtain the most current version of all Juniper Networks technical documentation, see the Technical Documentation page on the Juniper Networks Web site at <http://www.juniper.net/>.

To download complete sets of technical documentation to create your own documentation CD-ROMs or DVD-ROMs, see the Portable Libraries page at

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Copies of the Management Information Bases (MIBs) for a particular software release are available for download in the software image bundle from the Juniper Networks Web site at <http://www.juniper.net/>.

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- Document or topic name
- URL or page number
- Software release version

## Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract,

or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf> .
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/> .
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/> .
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html> .

## PART 1

# Overview

- [Understanding the RADIUS Features on page 3](#)
- [RADIUS IETF Attributes and VSAs in Access Messages on page 7](#)
- [RADIUS IETF Attributes and VSAs in Accounting Messages on page 17](#)
- [DSL Forum VSAs in RADIUS Access and Accounting Messages on page 27](#)
- [RADIUS IETF Attributes and VSAs in Access Messages on page 31](#)
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- [RADIUS Attributes for Dynamic and LAG Interfaces on page 57](#)



## CHAPTER 1

# Understanding the RADIUS Features

- [RADIUS Overview on page 3](#)
- [RADIUS Overview on page 4](#)
- [RADIUS References on page 6](#)

## RADIUS Overview

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RADIUS is a distributed client/server that protects networks against unauthorized access. RADIUS clients running on a Juniper Networks E Series Broadband Services 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.

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 the *Passwords and Security* chapter in *JunosE System Basics Configuration Guide*.

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## 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 Broadband Services 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.

### Related Documentation

- RADIUS Authentication and Accounting Servers Configuration Overview
- RADIUS Platform Considerations
- [RADIUS IETF Attributes on page 33](#)

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**Related  
Documentation**

- RADIUS Authentication and Accounting Servers Configuration Overview
- RADIUS Platform Considerations
- [RADIUS IETF Attributes on page 33](#)

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## RADIUS 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)

**Related  
Documentation**

- [RADIUS Overview on page 3](#)
- [Subscriber AAA Access Messages Overview on page 7](#)
- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [DSL Forum VSAs in AAA Access and Accounting Messages Overview on page 27](#)

## CHAPTER 2

# RADIUS IETF Attributes and VSAs in Access Messages

- [Subscriber AAA Access Messages Overview on page 7](#)
- [RADIUS IETF Attributes Supported for Subscriber AAA Access Messages on page 8](#)
- [Juniper Networks VSAs Supported for Subscriber AAA Access Messages on page 11](#)

### Subscriber AAA Access Messages Overview

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.

#### **Related Documentation**

- [RADIUS IETF Attributes Supported for Subscriber AAA Access Messages on page 8](#)
- [Juniper Networks VSAs Supported for Subscriber AAA Access Messages on page 11](#)

## RADIUS IETF Attributes Supported for Subscriber AAA Access Messages

Table 3 on page 8 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 3 on page 8:

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 3 on page 8 lists the RADIUS IETF attributes supported for Access-Request, Access-Accept, Access-Reject, CoA-Request, and Disconnect-Request messages.

**Table 3: 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	✓	✓	–	–	✓	✓
[2]	User-Password	✓	–	–	–	–	–
[3]	CHAP-Password	✓	–	–	–	–	–
[4]	NAS-IP-Address	✓	–	–	–	–	–
[5]	NAS-Port	✓	–	–	–	–	–
[6]	Service-Type	✓	✓	–	–	–	–
[7]	Framed-Protocol	✓	✓	–	–	–	–
[8]	Framed-IP-Address	✓	✓	–	–	✓	–
[9]	Framed-IP-Netmask	–	✓	–	–	–	–
[11]	Filter-Id	–	✓	–	–	–	–
[12]	Framed-MTU (See Note 2.)	✓	✓	–	–	–	–
[18]	Reply-Message (See Note 2.)	–	✓	✓	✓	–	–
[22]	Framed-Route	–	✓	–	–	–	–
[24]	State (See Note 2.)	–	–	✓	✓	–	–

**Table 3: 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	–	✓	–	–	–	–
[27]	Session-Timeout (See Note 2.)  (See Note 3.)	–	✓	✓	✓	–	–
[28]	Idle-Timeout	–	✓	–	–	–	–
[30]	Called-Station-Id	✓	–	–	–	–	–
[31]	Calling-Station-Id	✓	–	–	–	✓	–
[32]	NAS-Identifier	✓	–	–	–	–	–
[33]	Proxy-State	✓	–	–	–	–	–
[44]	Acct-Session-Id	✓	–	–	–	✓	✓
[50]	Acct-Multi-Session-Id	✓	–	–	–	–	✓
[60]	CHAP-Challenge	✓	–	–	–	–	–
[61]	NAS-Port-Type	✓	–	–	–	–	–
[62]	Port-Limit	–	✓	–	–	–	–
[64]	Tunnel-Type (See Note 1.)	✓	✓	–	–	–	–
[65]	Tunnel-Medium-Type (See Note 1.)	✓	✓	–	–	–	–
[66]	Tunnel-Client-Endpoint (See Note 1.)	✓	✓	–	–	–	–
[67]	Tunnel-Server-Endpoint (See Note 1.)	✓	✓	–	–	–	–
[68]	Acct-Tunnel-Connection (See Note 1.)	✓	–	–	–	–	–
[69]	Tunnel-Password	–	✓	–	–	–	–
[77]	Connect-Info	✓	–	–	–	–	–

**Table 3: AAA Access Message RADIUS IETF Attributes Supported**  
(continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Reject	Access-Challenge	CoA-Request	Disconnect-Request
[79]	EAP-Message (See Note 2.)	✓	✓	✓	✓	–	–
[80]	Message-Authenticator (See Note 2.)	✓	✓	✓	✓	–	–
[82]	Tunnel-Assignment-Id	–	✓	–	–	–	–
[83]	Tunnel-Preference	–	✓	–	–	–	–
[85]	Acct-Interim-Interval	–	✓	–	–	–	–
[87]	NAS-Port-Id	✓	–	–	–	✓	–
[88]	Framed-Pool	–	✓	–	–	–	–
[90]	Tunnel-Client-Auth-Id (See Note 1.)	✓	✓	–	–	–	–
[91]	Tunnel-Server-Auth-Id (See Note 1.)	✓	✓	–	–	–	–
[96]	Framed-Interface-Id	–	✓	–	–	–	–
[97]	Framed-Ipv6-Prefix	–	✓	–	–	–	–
[99]	Framed-Ipv6-Route	–	✓	–	–	–	–
[100]	Framed-IPv6-Pool	–	✓	–	–	–	–
[101]	Error-Cause	–	–	–	–	✓	✓
[123]	Delegated-IPv6-Prefix	–	✓	–	–	–	–
[135]	Ascend-Primary-Dns	–	✓	–	–	–	–
[136]	Ascend-Secondary-Dns	–	✓	–	–	–	–
[144]	DS-Lite-Tunnel-Name	–	✓	–	–	–	–
[188]	Ascend-Num-In-Multilink	✓	–	–	–	–	–
[242]	Ascend-Data-Filter	–	✓	–	–	–	–

- Related Documentation**
- [Subscriber AAA Access Messages Overview on page 7](#)
  - [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)
  - [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
  - [CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages on page 79](#)
  - [RADIUS IETF Attributes on page 33](#)

## Juniper Networks VSAs Supported for Subscriber AAA Access Messages

Table 4 on page 11 lists the Juniper Networks (Vendor ID 4874) VSAs supported for Access-Request, Access-Accept, Access-Reject, CoA-Request, and Disconnect-Request messages.

**Table 4: 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	–	✓	–	✓	–
[26-2]	Local-Address-Pool	–	✓	–	–	–
[26-3]	Local-Loopback-Interface	–	✓	–	–	–
[26-4]	Primary-DNS	–	✓	–	–	–
[26-5]	Secondary-DNS	–	✓	–	–	–
[26-6]	Primary-WINS (NBNS)	–	✓	–	–	–
[26-7]	Secondary-WINS (NBNS)	–	✓	–	–	–
[26-8]	Tunnel-Virtual-Router	–	✓	–	–	–
[26-9]	Tunnel-Password	–	✓	–	–	–
[26-10]	Ingress-Policy-Name	–	✓	–	–	–
[26-11]	Egress-Policy-Name	–	✓	–	–	–
[26-12]	Ingress-Statistics	–	✓	–	–	–
[26-13]	Egress-Statistics	–	✓	–	–	–
[26-14]	Service-Category	–	✓	–	–	–
[26-15]	PCR	–	✓	–	–	–

Table 4: 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
[26-16]	SCR	–	✓	–	–	–
[26-17]	Mbs	–	✓	–	–	–
[26-22]	Sa-Validate	–	✓	–	–	–
[26-23]	IGMP-Enable	–	✓	–	–	–
[26-24]	Pppoe-Description	✓	–	–	–	–
[26-25]	Redirect-Vrouter-Name	–	✓	–	–	–
[26-26]	Qos-Profile-Name	–	✓	–	–	–
[26-30]	Tunnel-Nas-Port-Method	–	✓	–	–	–
[26-31]	SSC-Service-Bundle-Name	–	✓	–	–	–
[26-33]	Tunnel-Max-Sessions	–	✓	–	–	–
[26-34]	Framed-IP-Route-Tag	–	✓	–	–	–
[26-44]	Tunnel-Interface-ID	✓	–	–	–	–
[26-45]	Ipv6-Virtual-Router	–	✓	–	–	–
[26-46]	Ipv6-Local-Interface	–	✓	–	–	–
[26-47]	Ipv6-Primary-DNS	–	✓	–	–	–
[26-48]	Ipv6-Secondary-DNS	–	✓	–	–	–
[26-52]	RADIUS-Client-Address	✓	–	–	–	–
[26-53]	Service-Description	✓	–	–	–	–
[26-54]	L2tp-Recv-Window-Size	–	✓	–	–	–
[26-55]	DHCP-Options	✓	–	–	–	–
[26-56]	DHCP-MAC-Address	✓	–	–	–	–
[26-57]	DHCP-GI-Address	✓	–	–	–	–
[26-58]	LI-Action	–	✓	–	✓	–



Table 4: 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
[26-59]	Med-Dev-Handle	–	✓	–	✓	–
[26-60]	Med-Ip-Address	–	✓	–	✓	–
[26-61]	Med-Port-Number	–	✓	–	✓	–
[26-62]	MLPPP-Bundle-Name	✓	–	–	–	–
[26-63]	Interface-Desc	✓	–	–	–	–
[26-64]	Tunnel-Group	–	✓	–	–	–
[26-65]	Activate-Service	–	✓	–	✓	–
[26-66]	Deactivate-Service	–	✓	–	✓	–
[26-67]	Service-Volume	–	✓	–	✓	–
[26-68]	Service-Timeout	–	✓	–	✓	–
[26-69]	Service-Statistics	–	✓	–	✓	–
[26-70]	Ignore-DF-Bit	–	✓	–	–	–
[26-71]	IGMP-Access-Name	–	✓	–	–	–
[26-72]	IGMP-Access-Src-Name	–	✓	–	–	–
[26-73]	IGMP-OIF-Map-Name	–	✓	–	–	–
[26-74]	MLD-Access-Name	–	✓	–	–	–
[26-75]	MLD-Access-Src-Name	–	✓	–	–	–
[26-76]	MLD-OIF-Map-Name	–	✓	–	–	–
[26-77]	MLD-Version	–	✓	–	–	–
[26-78]	IGMP-Version	–	✓	–	–	–
[26-79]	IP-Mcast-Adm-Bw-Limit	–	✓	–	–	–
[26-80]	IPv6-Mcast-Adm-Bw-Limit	–	✓	–	–	–
[26-81]	L2c-Information	✓	–	–	–	–

Table 4: 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
[26-82]	QoS-Parameters	–	✓	–	–	–
[26-84]	Mobile-IP-Algorithm	–	✓	–	–	–
[26-85]	Mobile-IP-SPI	–	✓	–	–	–
[26-86]	Mobile-IP-Key	–	✓	–	–	–
[26-87]	Mobile-IP-Replay	–	✓	–	–	–
[26-88]	Mobile-IP-Access-Control-List	–	✓	–	–	–
[26-89]	Mobile-IP-Lifetime	–	✓	–	–	–
[26-90]	L2TP-Resynch-Method	–	✓	–	–	–
[26-91]	Tunnel-Switch-Profile	–	✓	–	–	–
[26-92]	L2C-Up-Stream-Data	✓	–	–	–	–
[26-93]	L2C-Down-Stream-Data	✓	–	–	–	–
[26-94]	Tunnel-Tx-Speed-Method	–	✓	–	–	–
[26-95]	IGMP-Query-Interval	–	✓	–	–	–
[26-96]	IGMP-Max-Resp-Time	–	✓	–	–	–
[26-97]	IGMP-Immediate-Leave	–	✓	–	–	–
[26-98]	MLD-Query-Interval	–	✓	–	–	–
[26-99]	MLD-Max-Resp-Time	–	✓	–	–	–
[26-100]	MLD-Immediate-Leave	–	✓	–	–	–
[26-106]	Ipv6-Ingress-Policy-Name	–	✓	–	–	–
[26-107]	Ipv6-Egress-Policy-Name	–	✓	–	–	–
[26-110]	Acc-Loop-Cir-Id	✓	–	–	–	–
[26-111]	Acc-Aggr-Cir-Id-Bin	✓	–	–	–	–
[26-112]	Acc-Aggr-Cir-Id-Asc	✓	–	–	–	–

Table 4: 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
[26-113]	Act-Data-Rate-Up	✓	–	–	–	–
[26-114]	Act-Data-Rate-Dn	✓	–	–	–	–
[26-115]	Min-Data-Rate-Up	✓	–	–	–	–
[26-116]	Min-Data-Rate-Dn	✓	–	–	–	–
[26-117]	Att-Data-Rate-Up	✓	–	–	–	–
[26-118]	Att-Data-Rate-Dn	✓	–	–	–	–
[26-119]	Max-Data-Rate-Up	✓	–	–	–	–
[26-120]	Max-Data-Rate-Dn	✓	–	–	–	–
[26-121]	Min-LP-Data-Rate-Up	✓	–	–	–	–
[26-122]	Min-LP-Data-Rate-Dn	✓	–	–	–	–
[26-123]	Max-Interlv-Delay-Up	✓	–	–	–	–
[26-124]	Act-Interlv-Delay-Up	✓	–	–	–	–
[26-125]	Max-Interlv-Delay-Dn	✓	–	–	–	–
[26-126]	Act-Interlv-Delay-Dn	✓	–	–	–	–
[26-127]	DSL-Line-State	✓	–	–	–	–
[26-128]	DSL-Type	✓	–	–	–	–
[26-129]	Ipv6-NdRa-Prefix	–	✓	–	–	–
[26-130]	QoS-Interfaceset-Name	–	✓	–	–	–
[26-140]	Service-Interim-Acct-Interval	–	✓	–	✓	–
[26-141]	Downstream-Calculated-Qos-Rate	✓	✓	–	✓	–
[26-142]	Upstream-Calculated-Qos-Rate	✓	✓	–	✓	–
[26-143]	Max-Clients-Per-Interface	–	✓	–	–	–
[26-144]	PPP-Monitor-Ingress-Only	–	✓	–	–	–

Table 4: 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
[26-147]	Backup-Address-Pool	—	✓	—	—	—
[26-150]	ICR-Partition-Id	✓	—	—	—	—
[26-157]	Ipv6-Ndra-Pool	—	✓	—	—	—
[26-159]	DHCP-Option 82	✓	—	—	✓	—
[26-161]	Delegated-Ipv6-Pool	—	✓	—	—	—
[26-164]	Ipv4-release-control	✓	—	—	—	—
[26-165]	PCP-Server-Name	—	✓	—	—	—

**Related Documentation**

- [Subscriber AAA Access Messages Overview on page 7](#)
- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
- [CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages on page 77](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
- [CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages on page 79](#)
- [Juniper Networks VSAs on page 39](#)

## CHAPTER 3

# RADIUS IETF Attributes and VSAs in Accounting Messages

- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [RADIUS IETF Attributes Supported for Subscriber AAA Accounting Messages on page 18](#)
- [Juniper Networks VSAs Supported for Subscriber AAA Accounting Messages on page 21](#)
- [RADIUS IETF Attributes Supported for AAA Tunnel Accounting Messages on page 24](#)

## Subscriber AAA Accounting Messages Overview

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.

Beginning with JunosE Release 11.0.0, you can configure the router to send the Partition-Accounting-On and Partition-Accounting-Off messages to the RADIUS server whenever an ICR partition toggles between the backup and master states.

The router supports the following types of accounting messages:

- Acct-Start
- Acct-Stop
- Interim-Acct
- Acct-On
- Acct-Off
- Partition-Accounting-On
- Partition-Accounting-Off

### **Related Documentation**

- [RADIUS IETF Attributes Supported for Subscriber AAA Accounting Messages on page 18](#)

- [Juniper Networks VSAs Supported for Subscriber AAA Accounting Messages on page 21](#)

## RADIUS IETF Attributes Supported for Subscriber AAA Accounting Messages

Table 5 on page 18 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 5 on page 18:

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 5: AAA Accounting Message RADIUS IETF Attributes Supported

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[1]	User-Name	✓	✓	✓	–	–
[4]	NAS-IP-Address	✓	✓	✓	✓	✓
[5]	NAS-Port	✓	✓	✓	–	–
[6]	Service-Type	✓	✓	✓	–	–
[7]	Framed-Protocol (See Note 3.)	✓	✓	✓	–	–
[8]	Framed-IP-Address (See Note 2.)	✓	✓	✓	–	–
[9]	Framed-IP-Netmask	✓	✓	✓	–	–

Table 5: AAA Accounting Message RADIUS IETF Attributes Supported (*continued*)

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[13]	Framed-Compression (See Note 3.)	✓	✓	✓	–	–
[22]	Framed-Route	✓	✓	✓	–	–
[25]	Class	✓	✓	✓	–	–
[30]	Called-Station-Id	✓	✓	✓	–	–
[31]	Calling-Station-Id	✓	✓	✓	–	–
[32]	NAS-Identifier	✓	✓	✓	✓	✓
[40]	Acct-Status-Type	✓	✓	✓	✓	✓
[41]	Acct-Delay-Time	✓	✓	✓	✓	✓
[42]	Acct-Input-Octets	–	✓	✓	–	–
[43]	Acct-Output-Octets	–	✓	✓	–	–
[44]	Acct-Session-Id	✓	✓	✓	✓	✓
[45]	Acct-Authentic	✓	✓	✓	✓	✓
[46]	Acct-Session-Time	–	✓	✓	–	–
[47]	Acct-Input-Packets	–	✓	✓	–	–
[48]	Acct-Output-Packets	–	✓	✓	–	–
[49]	Acct-Terminate-Cause	–	✓	–	–	✓
[50]	Acct-Multi-Session-Id (See Note 3.)	✓	✓	✓	–	–
[51]	Acct-Link-Count (See Note 3.)	✓	✓	✓	–	–
[52]	Acct-Input-Gigawords	–	✓	✓	–	–
[53]	Acct-Output-Gigawords	–	✓	✓	–	–
[55]	Event-Timestamp	✓	✓	✓	✓	✓
[61]	NAS-Port-Type	✓	✓	✓	–	–

Table 5: AAA Accounting Message RADIUS IETF Attributes Supported (*continued*)

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off
[64]	Tunnel-Type (See Note 1.)	✓	✓	✓	–	–
[65]	Tunnel-Medium-Type (See Note 1.)	✓	✓	✓	–	–
[66]	Tunnel-Client-Endpoint (See Note 1.)	✓	✓	✓	–	–
[67]	Tunnel-Server-Endpoint (See Note 1.)	✓	✓	✓	–	–
[68]	Acct-Tunnel-Connection (See Note 1.)	✓	✓	✓	–	–
[77]	Connect-Info	✓	✓	✓	–	–
[82]	Tunnel-Assignment-Id (LAC only) (See Note 1.)	✓	✓	✓	–	–
[83]	Tunnel-Preference (LAC only)	✓	✓	✓	–	–
[87]	NAS-Port-Id	✓	✓	✓	–	–
[90]	Tunnel-Client-Auth-Id (See Note 1.)	✓	✓	✓	–	–
[91]	Tunnel-Server-Auth-Id (See Note 1.)	✓	✓	✓	–	–
[96]	Framed-Interface-Id (See Note 1.)	✓	✓	✓	–	–
[97]	Framed-Ipv6-Prefix (See Note 5.)	✓	✓	✓	–	–
[99]	Framed-IPv6-Route	✓	✓	✓	–	–
[100]	Framed-IPv6-Pool	✓	✓	✓	–	–
[123]	Delegated-Ipv6-Prefix	✓	✓	✓	–	–
[144]	DS-Lite-Tunnel-Name	✓	✓	✓	–	–
[188]	Ascend-Num-In-Multilink (See Note 3.)	✓	✓	✓	–	–



- Related Documentation**
- [Subscriber AAA Accounting Messages Overview on page 17](#)
  - [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)
  - [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
  - [RADIUS IETF Attributes on page 33](#)

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## Juniper Networks VSAs Supported for Subscriber AAA Accounting Messages

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[Table 6 on page 22](#) lists the Juniper Networks (Vendor ID 4874) VSAs supported for Acct-Start, Acct-Stop, Interim-Acct, Acct-On, Acct-Off, Partition-Accounting-On, and Partition-Accounting-Off messages.

The following notes are referred to in [Table 6 on page 22](#):

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.
2. ERX routers send IPv6 accounting attributes in the Acct-Stop and Interim-Acct messages (stop, interim) when they are configured to return these attributes and when the subscriber is either an IPv6 subscriber or a combined IPv4/IPv6 subscriber in a dual stack. For an IPv4 subscriber, IPv6 accounting attributes are not included in the accounting messages even if the IPv6 accounting is enabled.

In JunosE Release 10.1.x and lower-numbered releases, the combined accounting statistics were retrieved at the layer 2. Therefore, error or discarded packets in the layer 2 itself were excluded in these statistics. Because the layer 2 cannot detect the error or discarded packets in the layer 3, the combined statistics also include the error or discarded packets of the layer 3. In this release, with the support for RADIUS VSAs for IPv6 accounting, the IPv6 statistics are retrieved at the layer 3. To be consistent with the combined statistics, the error or discarded packets of the layer 3 are also included in these IPv6 statistics.

3. The ICR partition accounting messages comprise the following:
  - **Partition-Accounting-On**—Sent to the RADIUS server whenever an ICR partition changes to the master state from the backup state. The Partition-Accounting-On message has the same Acct-Status-Type attribute value as the Accounting-On message, but also contains the ICR-Partition-Id VSA, which specifies the ICR partition to which this message corresponds.

- Partition-Accounting-Off—Sent to the RADIUS server when the partition changes from the master state to the backup state. However, in the event of a complete chassis failure, the Partition-Accounting-Off message is not sent. Partition-Accounting-Off message has the same Acct-Status-Type attribute value as the Accounting-Off message and contains the ICR-Partition-Id VSA to denote the ICR partition to which the message is associated.

For more information about how to configure and use ICR partitions, see the *Managing Interchassis Redundancy* chapter in the *JunosE Services Availability Configuration Guide*.

**Table 6: AAA Accounting Message Juniper Network (Vendor ID 4874) VSAs Supported**

Attribute Number	Attribute Name	Acct-Start	Acct-Stop	Interim-Acct	Acct-On	Acct-Off	Partition-Accounting-On	Partition-Accounting-Off
[26-10]	Ingress-Policy-Name	✓	✓	✓	–	–	–	–
[26-11]	Egress-Policy-Name	✓	✓	✓	–	–	–	–
[26-24]	Pppoe-Description (See Note 1.)	✓	✓	✓	–	–	–	–
[26-26]	QoS-Profile-Name	✓	✓	✓	–	–	–	–
[26-42]	Acct-Input-Gigapackets	–	✓	✓	–	–	–	–
[26-43]	Acct-Output-Gigapackets	–	✓	✓	–	–	–	–
[26-44]	Tunnel-Interface-Id	✓	✓	✓	–	–	–	–
[26-45]	Ipv6-Virtual-Router	✓	✓	✓	–	–	–	–
[26-46]	Ipv6-Local-Interface	✓	✓	✓	–	–	–	–
[26-47]	Ipv6-Primary-DNS	✓	✓	✓	–	–	–	–
[26-48]	Ipv6-Secondary-DNS	✓	✓	✓	–	–	–	–
[26-51]	Disconnect-Cause	–	✓	–	–	–	–	–
[26-53]	Service-Description	✓	✓	✓	–	–	–	–
[26-55]	DHCP-Options (See Note 1.)	✓	✓	✓	–	–	–	–
[26-56]	DHCP-MAC-Address (See Note 1.)	✓	✓	✓	–	–	–	–
[26-57]	DHCP-GI-Address (See Note 1.)	✓	✓	✓	–	–	–	–
[26-62]	MLPPP-Bundle-Name	✓	✓	✓	–	–	–	–

Table 6: 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	Partition-AccountingOn	Partition-AccountingOff
[26-63]	Interface-Description	✓	✓	✓	–	–	–	–
[26-92]	L2C-Up-Stream-Data	✓	✓	✓	–	–	–	–
[26-93]	L2C-Down-Stream-Data	✓	✓	✓	–	–	–	–
[26-106]	Ipv6-Ingress-Policy-Name	✓	✓	✓	–	–	–	–
[26-107]	Ipv6-Egress-Policy-Name	✓	✓	✓	–	–	–	–
[26-110]	Acc-Loop-Cir-Id	✓	✓	✓	–	–	–	–
[26-111]	Acc-Aggr-Cir-Id-Bin	✓	✓	✓	–	–	–	–
[26-112]	Acc-Aggr-Cir-Id-Asc	✓	✓	✓	–	–	–	–
[26-113]	Act-Data-Rate-Up	✓	✓	✓	–	–	–	–
[26-114]	Act-Data-Rate-Dn	✓	✓	✓	–	–	–	–
[26-115]	Min-Data-Rate-Up	✓	✓	✓	–	–	–	–
[26-116]	Min-Data-Rate-Dn	✓	✓	✓	–	–	–	–
[26-117]	Att-Data-Rate-Up	✓	✓	✓	–	–	–	–
[26-118]	Att-Data-Rate-Dn	✓	✓	✓	–	–	–	–
[26-119]	Max-Data-Rate-Up	✓	✓	✓	–	–	–	–
[26-120]	Max-Data-Rate-Dn	✓	✓	✓	–	–	–	–
[26-121]	Min-LP-Data-Rate-Up	✓	✓	✓	–	–	–	–
[26-122]	Min-LP-Data-Rate-Dn	✓	✓	✓	–	–	–	–
[26-123]	Max-Interlv-Delay-Up	✓	✓	✓	–	–	–	–
[26-124]	Act-Interlv-Delay-Up	✓	✓	✓	–	–	–	–
[26-125]	Max-Interlv-Delay-Dn	✓	✓	✓	–	–	–	–
[26-126]	Act-Interlv-Delay-Dn	✓	✓	✓	–	–	–	–
[26-127]	DSL-Line-State	✓	✓	✓	–	–	–	–

**Table 6: 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	Partition-AccountingOn	Partition-AccountingOff
[26-128]	DSL-Type	✓	✓	✓	–	–	–	–
[26-129]	Ipv6-NdRa-Prefix	✓	✓	✓	–	–	–	–
[26-150]	ICR-Partition-Id (See Note 3.)	✓	✓	✓	–	–	✓	✓
[26-151]	Ipv6-Acct-Input-Octets (See Note 2.)	–	✓	✓	–	–	–	–
[26-152]	Ipv6-Acct-Output-Octets (See Note 2.)	–	✓	✓	–	–	–	–
[26-153]	Ipv6-Acct-Input-Packets (See Note 2.)	–	✓	✓	–	–	–	–
[26-154]	Ipv6-Acct-Output-Packets (See Note 2.)	–	✓	✓	–	–	–	–
[26-155]	Ipv6-Acct-Input-Gigawords (See Note 2.)	–	✓	✓	–	–	–	–
[26-156]	Ipv6-Acct-Output-Gigawords (See Note 2.)	–	✓	✓	–	–	–	–
[26-159]	DHCP-Option 82 (See Note 1.)	✓	✓	✓	–	–	–	–
[26-164]	Ipv4-release-control	–	–	✓	–	–	–	–
[26-165]	PCP-Server-Name	✓	✓	✓	–	–	–	–

**Related Documentation**

- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
- [CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages on page 77](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
- [Juniper Networks VSAs on page 39](#)

**RADIUS IETF Attributes Supported for AAA Tunnel Accounting Messages**

Table 7 on page 25 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 7: 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	–	–	–	✓	✓	–
[4]	NAS-IP-Address	✓	✓	✓	✓	✓	✓
[26-51]	Disconnect-Cause	–	–	–	–	✓	–
[32]	NAS-Identifier	✓	✓	✓	✓	✓	✓
[40]	Acct-Status-Type	✓	✓	✓	✓	✓	✓
[41]	Acct-Delay-Time	✓	✓	✓	✓	✓	✓
[44]	Acct-Session-Id	✓	✓	✓	✓	✓	✓
[46]	Acct-Session-Time	–	✓	–	–	✓	–
[49]	Acct-Terminate-Cause	–	✓	✓	–	✓	✓
[55]	Event-Timestamp	✓	✓	✓	✓	✓	✓
[64]	Tunnel-Type	✓	✓	✓	✓	✓	✓
[65]	Tunnel-Medium-Type	✓	✓	✓	✓	✓	✓
[66]	Tunnel-Client-Endpoint	✓	✓	✓	✓	✓	✓
[67]	Tunnel-Server-Endpoint	✓	✓	✓	✓	✓	✓
[68]	Acct-Tunnel-Connection	✓	✓	✓	✓	✓	✓
[82]	Tunnel-Assignment-Id (LAC only)	✓	✓	✓	✓	✓	✓
[83]	Tunnel-Preference (LAC only)	–	–	–	✓	✓	✓

**Table 7: AAA Accounting Tunnel Message RADIUS Attributes Supported**  
(continued)

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
[86]	Acct-Tunnel-Packets-Lost	–	–	–	–	✓	✓
[90]	Tunnel-Client-Auth-Id	✓	✓	✓	✓	✓	✓
[91]	Tunnel-Server-Auth-Id	✓	✓	✓	✓	✓	✓

**Related Documentation**

- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [RADIUS IETF Attributes on page 33](#)
- [Juniper Networks VSAs on page 39](#)

## CHAPTER 4

# DSL Forum VSAs in RADIUS Access and Accounting Messages

- [DSL Forum VSAs in AAA Access and Accounting Messages Overview on page 27](#)
- [DSL Forum VSAs Supported for AAA Access and Accounting Messages on page 28](#)

## DSL Forum VSAs in AAA Access and Accounting Messages Overview

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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)
- CoA-Request

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 **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 8 on page 28](#) 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” on page 39](#).

### Related Documentation

- [Subscriber AAA Access Messages Overview on page 7](#)
- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [DSL Forum VSAs Supported for AAA Access and Accounting Messages on page 28](#)
- [CLI Commands Used to Include DSL Forum VSAs in Access and Accounting Messages on page 76](#)

- [DSL Forum VSAs on page 52](#)

## DSL Forum VSAs Supported for AAA Access and Accounting Messages

Table 8 on page 28 lists the DSL Forum VSAs supported by JunosE Software in Access-Request, Acct-Start, Acct-Stop, (if Acct-Stop is specified) Interim-Acct, and CoA-Request messages. JunosE Software uses the vendor ID assigned to the DSL Forum (3561, or DE9 in hexadecimal format) by the IANA.

**Table 8: 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	CoA-Request
[26-1]	Agent-Circuit-Id	✓	✓	✓	✓	✓
[26-2]	Agent-Remote-Id	✓	✓	✓	✓	✓
[26-129]	Actual-Data-Rate-Upstream	✓	✓	✓	✓	—
[26-130]	Actual-Data-Rate-Downstream	✓	✓	✓	✓	—
[26-131]	Minimum-Data-Rate-Upstream	✓	✓	✓	✓	—
[26-132]	Minimum-Data-Rate-Downstream	✓	✓	✓	✓	—
[26-133]	Attainable-Data-Rate-Upstream	✓	✓	✓	✓	—
[26-134]	Attainable-Data-Rate-Downstream	✓	✓	✓	✓	—
[26-135]	Maximum-Data-Rate-Upstream	✓	✓	✓	✓	—
[26-136]	Maximum-Data-Rate-Downstream	✓	✓	✓	✓	—
[26-137]	Minimum-Data-Rate-Upstream-Low-Power	✓	✓	✓	✓	—
[26-138]	Minimum-Data-Rate-Downstream-Low-Power	✓	✓	✓	✓	—
[26-139]	Maximum-Interleaving-Delay-Upstream	✓	✓	✓	✓	—
[26-140]	Actual-Interleaving-Delay-Upstream	✓	✓	✓	✓	—
[26-141]	Maximum-Interleaving-Delay-Downstream	✓	✓	✓	✓	—
[26-142]	Actual-Interleaving-Delay-Downstream	✓	✓	✓	✓	—
[26-144]	Access-Loop-Encapsulation	✓	✓	✓	✓	—
[26-254]	IWF-Session	✓	✓	✓	✓	—



- Related Documentation**
- [Subscriber AAA Access Messages Overview on page 7](#)
  - [Subscriber AAA Accounting Messages Overview on page 17](#)
  - [DSL Forum VSAs in AAA Access and Accounting Messages Overview on page 27](#)
  - [CLI Commands Used to Include DSL Forum VSAs in Access and Accounting Messages on page 76](#)
  - [DSL Forum VSAs on page 52](#)



## CHAPTER 5

# RADIUS IETF Attributes and VSAs in Access Messages

- [RADIUS Attributes Supported for CLI AAA Messages on page 31](#)

### RADIUS Attributes Supported for 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 9 on page 31](#) lists the RADIUS attributes supported for CLI AAA messages.

**Table 9: CLI AAA Access Message RADIUS Attributes Supported**

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Challenge	Access-Reject
[1]	User-Name	✓	–	–	–
[2]	User Password	✓	–	–	–
[4]	NAS-IP-Address	✓	–	–	–
[6]	Service-Type	✓	✓	–	–
[18]	Reply-Message	–	–	✓	✓
[24]	State (Access-Request is only in response to an Access-Challenge)	✓	–	✓	–
[25]	Class	–	✓	–	–

**Table 9: CLI AAA Access Message RADIUS Attributes Supported**  
(continued)

Attribute Number	Attribute Name	Access-Request	Access-Accept	Access-Challenge	Access-Reject
[26-1]	Virtual-Router	–	✓	–	–
[26-18]	Init-CLI-Access-Level	–	✓	–	–
[26-19]	Allow-All-VR-Access	–	✓	–	–
[26-20]	Alt-CLI-Access-Level	–	✓	–	–
[26-21]	Alt-CLI-Virtual-Router-Name	–	✓	–	–
[26-25]	Redirect-Vrouter-Name	–	✓	–	–

**Related Documentation**

- [Subscriber AAA Access Messages Overview on page 7](#)
- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)
- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
- [CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages on page 79](#)
- [DSL Forum VSAs on page 52](#)
- [Juniper Networks VSAs on page 39](#)

## CHAPTER 6

# RADIUS Attribute Definitions

- [RADIUS IETF Attributes on page 33](#)
- [Juniper Networks VSAs on page 39](#)
- [DSL Forum VSAs on page 52](#)
- [Pass Through RADIUS Attributes on page 54](#)
- [RADIUS Attributes References on page 54](#)

## RADIUS IETF Attributes

[Table 10 on page 33](#) describes the RADIUS IETF attributes supported by JunosE Software. The attributes are sorted by standard number.

Table 10: RADIUS IETF Attributes Supported by JunosE Software

Attribute Number	Attribute Name	Description
[1]	User-Name	<ul style="list-style-type: none"><li>• Name of user to be authenticated</li><li>• Configurable username override</li></ul>
[2]	User-Password	<ul style="list-style-type: none"><li>• Password of user to be authenticated</li><li>• Configurable password override</li><li>• Password Authentication Protocol (PAP)</li></ul>
[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"><li>• IP address of the network access server (NAS) that is requesting authentication of the user</li><li>• You can use the <b>radius update-source-addr</b> command to override this behavior.</li></ul>
[5]	NAS-Port	<ul style="list-style-type: none"><li>• Physical port number of the NAS that is authenticating the user</li><li>• See the <a href="#">radius nas-port-format</a>, <a href="#">radius pppoe nas-port-format unique</a>, and <a href="#">radius vlan nas-port-format stacked</a> commands.</li></ul>
[6]	Service-Type	<ul style="list-style-type: none"><li>• Type of service the user has requested or the type of service to be provided</li><li>• Admin, Login, NAS Prompt, or Framed only</li></ul>

Table 10: RADIUS IETF Attributes Supported by JunosE Software (*continued*)

Attribute Number	Attribute Name	Description
[7]	Framed-Protocol	<ul style="list-style-type: none"> <li>Framing protocol used for framed access</li> <li>Standard value of 1 set for PPP</li> <li>Nonstandard value of 1008 set for dynamic ATM</li> </ul>
[8]	Framed-IP-Address	<ul style="list-style-type: none"> <li>IP address to be configured for the user</li> <li>0.0.0.0 or absence is interpreted as 255.255.255.254</li> <li>See the <i>framed-ip-add acct-start</i> attribute name in the <a href="#">radius include</a> command.</li> </ul>
[9]	Framed-IP-Netmask	<ul style="list-style-type: none"> <li>IP network to be configured for the user when the user is a router to a network</li> <li>Absence implies 255.255.255.255</li> </ul>
[11]	Filter-Id	<ul style="list-style-type: none"> <li>Name of the filter list for the user</li> <li>Interpreted as input policy name</li> </ul>
[12]	Framed-MTU	<ul style="list-style-type: none"> <li>The maximum transmission unit to be configured for the user, when it is not negotiated by some other means (such as PPP).</li> <li>When sent in an Access-Request with an EAP-Message, indicates the maximum size of the EAP-Message string that the external server supports.</li> </ul>
[13]	Framed-Compression	Always set to none.
[18]	Reply-Message	<ul style="list-style-type: none"> <li>Text that may be displayed to the user</li> <li>Only the first instance of this attribute is used</li> </ul>
[22]	Framed-Route	<p>String that provides routing information to be configured for the user on the NAS; in the format:</p> <pre>&lt;addr&gt;[/&lt;maskLen&gt;] &lt;nexthop&gt; [&lt;cost&gt;] [tag &lt;tagValue&gt;] [distance &lt;distValue&gt;]</pre>
[24]	State	<ul style="list-style-type: none"> <li>An arbitrary value that the router includes in new Access-Request packets from the previous Accept-Challenge</li> <li>Applicable for CLI, telnet, or EAP message exchange</li> </ul>
[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

Table 10: RADIUS IETF Attributes Supported by JunosE Software (*continued*)

Attribute Number	Attribute Name	Description
[30]	Called-Station-Id	<ul style="list-style-type: none"> <li>Allows the NAS to send the phone number that the user called</li> <li>Not supported for nontunneled or LAC session side</li> <li>For the LNS, the format is the string passed in the Called Number AVP</li> <li>For RADIUS relay server, indicates the subscriber's wireless access point</li> </ul>
[31]	Calling-Station-Id	<ul style="list-style-type: none"> <li>Allows the NAS to send the phone number from which the call originated</li> <li>See the <a href="#">radius calling-station-format</a> and the <a href="#">radius calling-station-delimiter</a> commands.</li> <li>For RADIUS relay server, indicates the subscriber's MAC address</li> </ul>
[32]	NAS-Identifier	<ul style="list-style-type: none"> <li>Identifies the NAS originating the request</li> <li>System-wide configurable hostname or VR-sensitive configurable NAS-identifier name</li> </ul>
[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"> <li>Indicates how many octets have been received from the port during the time this service has been provided</li> <li>IP subscriber manager—Statistics are reported</li> <li>PPP—Statistics are counted according to the rules of the generic interface MIB</li> </ul>
[43]	Acct-Output-Octets	<ul style="list-style-type: none"> <li>Indicates how many octets have been sent to the port during the time this service has been provided</li> <li>IP subscriber manager—Statistics are reported</li> <li>PPP—Statistics are counted according to the rules of the generic interface MIB</li> </ul>
[44]	Acct-Session-Id	<ul style="list-style-type: none"> <li>Unique accounting identifier that makes it easy to match start and stop records in a log file</li> <li>See the <a href="#">radius acct-session-id-format</a> and the <a href="#">radius include acct-session-id access-request</a> commands.</li> </ul>
[45]	Acct-Authentic	<ul style="list-style-type: none"> <li>Indicates how the user was authenticated: whether by RADIUS, the NAS itself, or another remote authentication protocol</li> <li>Always 1</li> </ul>
[46]	Acct-Session-Time	Indicates how long in seconds that the user has received service

Table 10: RADIUS IETF Attributes Supported by JunosE Software (*continued*)

Attribute Number	Attribute Name	Description
[47]	Acct-Input-Packets	<ul style="list-style-type: none"> <li>Indicates how many packets have been received from the port during the time this service has been provided to a framed user</li> <li>IP subscriber manager—Statistics are reported</li> <li>PPP—Statistics are counted according to the rules of the generic interface MIB</li> </ul>
[48]	Acct-Output-Packets	<ul style="list-style-type: none"> <li>Indicates how many packets have been sent to the port in the course of delivering this service to a framed user</li> <li>IP subscriber manager—Statistics are reported</li> <li>PPP—Statistics are counted according to the rules of the generic interface MIB</li> </ul>
[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"> <li>User Request (1)—User initiated the disconnect (log out)</li> <li>Idle Timeout (4)—Idle timer has expired</li> <li>Session Timeout (5)—Client reached the maximum continuous time allowed on the service or session</li> <li>Admin Reset (6)—System administrator terminated the session</li> <li>Port Error (8)—PVC failed; no hardware or no interface</li> <li>NAS Error (9)—Negotiation failures, connection failures, or address lease expiration</li> <li>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</li> </ul>
[50]	Acct-Multi-Session-Id	<ul style="list-style-type: none"> <li>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.</li> <li>This string is the hexadecimal ASCII characters for two 4-octet unsigned integers. Example: 0a34331200001249.</li> </ul>
[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 RFC 2866—RADIUS Accounting (June 2000).
[52]	Acct-Input-Gigawords	<ul style="list-style-type: none"> <li>Indicates how many times the Acct-Input-Octets counter has wrapped around <math>2^{32}</math> 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</li> <li>IP subscriber manager—Statistics are reported</li> <li>PPP—Statistics are counted according to the rules of the generic interface MIB</li> </ul>



Table 10: RADIUS IETF Attributes Supported by JunosE Software (*continued*)

Attribute Number	Attribute Name	Description
[53]	Acct-Output-Gigawords	<ul style="list-style-type: none"> <li>Indicates how many times the Acct-Output-Octets counter has wrapped around <math>2^{32}</math> 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</li> <li>IP subscriber manager—Statistics are reported</li> <li>PPP—Statistics are counted according to the rules of the generic interface MIB</li> </ul>
[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"> <li>Indicates the type of physical port the NAS is using to authenticate the user</li> <li>See the <b>radius dsl-port-type</b> and the <b>radius ethernet-port-type</b> commands.</li> </ul>
[62]	Port-Limit	Specifies the maximum number of MLPPP member links allowed for the subscriber
[64]	Tunnel-Type	<ul style="list-style-type: none"> <li>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)</li> <li>Only L2TP tunnels supported at this time</li> </ul>
[65]	Tunnel-Medium-Type	<ul style="list-style-type: none"> <li>Transport medium to use when creating a tunnel for those protocols (such as L2TP) that can operate over multiple transports</li> <li>Only IPv4 supported at this time</li> </ul>
[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"> <li>Indicates the identifier assigned to the tunnel session</li> <li>Value is L2TP call-serial number</li> </ul>
[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

Table 10: RADIUS IETF Attributes Supported by JunosE Software (*continued*)

Attribute Number	Attribute Name	Description
[83]	Tunnel-Preference	<ul style="list-style-type: none"> <li>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.</li> <li>Included in the Tunnel-Link-Start, the Tunnel-Link-Reject, and the Tunnel-Link-Stop packets (LAC only)</li> </ul>
[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
[87]	NAS-Port-Id	<ul style="list-style-type: none"> <li>Text string that identifies the physical interface of the NAS that is authenticating the user</li> <li>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 <b>atm 12/2.3:100.101</b></li> <li>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"> <li>For example: <b>ip:172.81.1.98:172.81.1.99:18d:cb8:ce6:9f4:6</b></li> <li>In this case, the local information refers to the LNS, and the peer information refers to the LAC</li> </ul> </li> <li>NAS-Port-Id usually contains one of the following: <ul style="list-style-type: none"> <li>atm &lt;slot&gt; / &lt;port&gt;&lt;.subinterface&gt;:&lt;vpi&gt;.&lt;vci&gt;</li> <li>FastEthernet &lt;slot&gt; / &lt;port&gt;&lt;.subinterface&gt; [&lt;vlan&gt;]</li> <li>GigabitEthernet &lt;slot&gt; / &lt;port&gt;&lt;.subinterface&gt; [&lt;vlan&gt;]</li> <li>serial &lt;slot&gt;/&lt;port&gt; [&lt;sonetPath&gt; [/&lt;sonetTributary (x/x/x)&gt; [/&lt;fractionalInterface&gt;] ] ]</li> <li>from LNS—ip:local ip:peer ip:local tid:peer tid:local sid:peer sid:call serial number  tid—tunnel id  sid—session id</li> </ul> </li> </ul> <p><b>NOTE:</b> 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 <b>aaa intf-desc-format include sub-intf disable</b> 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

Table 10: RADIUS IETF Attributes Supported by JunosE Software (*continued*)

Attribute Number	Attribute Name	Description
[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
[100]	Framed-Ipv6-Pool	Name of the local address pool from which an IPv6 prefix is assigned to the requesting router
[101]	Error-Cause	4-octet field that contains an integer that specifies the cause of the error
[123]	Delegated-Ipv6-Prefix	IPv6 prefix to be delegated to clients using the DHCPv6 Prefix Delegation mechanism
[135]	Ascend-Primary-DNS	<ul style="list-style-type: none"> <li>Indicates the IP address of the primary DNS</li> <li>The format is 1 byte of type (135), 1 byte of length (length=6), 4 bytes of value (IPv4 address)</li> </ul>
[136]	Ascend-Secondary-DNS	<ul style="list-style-type: none"> <li>Indicates the IP address of the secondary DNS</li> <li>The format is 1 byte of type (136), 1 byte of length (length=6), 4 bytes of value (IPv4 address)</li> </ul>
[144]	DS-Lite-Tunnel-Name	Specifies the fully qualified domain name(FQDN) of the Address Family Transition Router(AFTR) name to which DHCPv6 client can establish an IPv4-over-IPv6 tunnel (IPv4-over-IPv6 tunnel is commonly referred to as Softwire)
[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

- Related Documentation**
- [RADIUS IETF Attributes Supported for Subscriber AAA Access Messages on page 8](#)
  - [RADIUS IETF Attributes Supported for Subscriber AAA Accounting Messages on page 18](#)
  - [RADIUS IETF Attributes Supported for AAA Tunnel Accounting Messages on page 24](#)
  - [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)

## Juniper Networks VSAs

Table 11 on page 40 lists Juniper Networks VSA formats for RADIUS. JunosE Software uses the vendor ID assigned to Juniper Networks (vendor ID 4874) by the Internet Assigned Numbers Authority (IANA).

Table 11: 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"> <li>Virtual router name for the Broadband Remote Access Server (B-RAS) user's IP interface.</li> <li>Allowed only from RADIUS server in default virtual router context.</li> <li>For restricted users, specifies the only virtual router that the user can access.</li> <li>For nonrestricted users, specifies the initial virtual router that the user accesses.</li> <li>For tunneled connections, specifies the tunnel source parameter where the source address for the tunneled connection is resolved.</li> <li>See the <b>enable</b> command in the <i>Passwords and Security</i> chapter in <i>JunosE System Basics Configuration Guide</i>.</li> </ul>	len	sublen	string: virtual-router-name
[26-2]	Local-Address-Pool	<ul style="list-style-type: none"> <li>Name of an assigned address pool that should be used to assign an address for the user</li> <li>Same as RADIUS attribute 88, Framed-Pool</li> </ul>	len	sublen	string: address-pool-name
[26-3]	Local-Interface	<p>Interface to apply to the E Series side of the connection</p> <p>The interface value can be one of the following:</p> <ul style="list-style-type: none"> <li>The IP address (with subnet mask)</li> <li>The loopback interface</li> </ul>	len	sublen	string: local-interface
[26-4]	Primary-DNS	<ul style="list-style-type: none"> <li>B-RAS user's DNS address negotiated during IPCP</li> <li>4-octet IP address</li> </ul>	12	6	integer: 4-byte primary-dns-address
[26-5]	Secondary-DNS	<ul style="list-style-type: none"> <li>B-RAS user's DNS address negotiated during IPCP</li> <li>4-octet IP address</li> </ul>	12	6	integer: 4-byte secondary-dns-address
[26-6]	Primary-WINS (NBNS)	<ul style="list-style-type: none"> <li>B-RAS user's WINS (NBNS) address negotiated during IPCP</li> <li>4-octet IP address</li> </ul>	12	6	integer: 4-byte primary-wins-address
[26-7]	Secondary-WINS (NBNS)	<ul style="list-style-type: none"> <li>B-RAS user's WINS (NBNS) address negotiated during IPCP</li> <li>4-octet IP address</li> </ul>	12	6	integer: 4-byte secondary-wins-address

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-8]	Tunnel-Virtual-Router	For tunneled connections, specifies the virtual router associated with the 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	IPv4 input policy name to apply to B-RAS user's interface	len	sublen	string: input-policy-name
[26-11]	Egress-Policy-Name	IPv4 output policy name to apply to B-RAS user's interface	len	sublen	string: output-policy-name
[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"> <li>Peak cell rate</li> <li>4-octet integer</li> </ul>	12	6	integer: 4-octet
[26-16]	SCR	<ul style="list-style-type: none"> <li>Sustained cell rate</li> <li>4-octet integer</li> </ul>	12	6	integer: 4-octet
[26-17]	Mbs	<ul style="list-style-type: none"> <li>Maximum burst rate</li> <li>4-octet integer</li> </ul>	12	6	integer: 4-octet
[26-18]	Init-CLI-Access-Level	<ul style="list-style-type: none"> <li>Specifies the initial level of access to CLI commands</li> <li>See the <b>enable</b> command in the <i>Passwords and Security</i> chapter in <i>JunosE System Basics Configuration Guide</i>.</li> </ul>	len	sublen	single attribute: enter 0, 1, 5, 10, or 15
[26-19]	Allow-All-VR-Access	<ul style="list-style-type: none"> <li>Specifies user access to all virtual routers</li> <li>See the <b>enable</b> command in the <i>Passwords and Security</i> chapter in <i>JunosE System Basics Configuration Guide</i>.</li> </ul>	len	sublen	integer: 0 = disable, 1 = enable
[26-20]	Alt-CLI-Access-Level	<ul style="list-style-type: none"> <li>Specifies other levels of access to CLI commands</li> <li>See the <b>enable</b> command in chapter <i>Passwords and Security</i> in <i>JunosE System Basics Configuration Guide</i>.</li> </ul>	len	sublen	single attribute; enter 0, 1, 5, 10, or 15

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-21]	Alt-CLI-Vrouter-Name	<ul style="list-style-type: none"> <li>For restricted users, specifies other VRs that the user may access.</li> <li>See the <b>enable</b> command in chapter Passwords and Security in <i>JunosE System Basics Configuration Guide</i>.</li> </ul>	len	sublen	string: virtual-router-name
[26-22]	Sa-Validate	<ul style="list-style-type: none"> <li>Enable or disable source address validation on a user's interface</li> <li>4-octet integer</li> </ul>	len	sublen	integer: 0 = disable, 1 = enable
[26-23]	Igmp-Enable	<ul style="list-style-type: none"> <li>Enable or disable IGMP on a user's interface</li> <li>Allows the end user to register for the reception of multicast services</li> <li>4-octet integer</li> </ul>	len	sublen	integer: 0 = disable, 1 = enable
[26-24]	Pppoe-Description	The string <i>pppoe &lt;mac addr&gt;</i> sent to the RADIUS server supplied by PPPoE	len	sublen	string: pppoe<mac addr>
[26-25]	Redirect-Vrouter-Name	<ul style="list-style-type: none"> <li>Virtual router name indicating the VR context in which to authenticate the user</li> <li>Behavior is similar to that of a remote domain-map lookup.</li> </ul>	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

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[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
[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

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats *(continued)*

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-54]	L2tp-Recv-Window-Size	<ul style="list-style-type: none"> <li>L2TP receive window size (RWS) for a tunnel on the LAC</li> <li>Number of packets that the peer can transmit without receiving an acknowledgment from the router</li> <li>4-octet integer</li> </ul>	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	Hexadecimal string used to determine mirror header attributes, prepended to each mirrored packet that is sent to the analyzer device	len	sublen	Salt encrypted string; hexadecimal string of 4 bytes or 8 bytes
[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



Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[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
[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

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[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
[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"> <li>Name of the L2TP tunnel switch profile</li> <li>The L2TP tunnel switch profile defines the L2TP tunnel switching behavior for the interfaces to which this profile is assigned</li> </ul>	len	sublen	string: tunnel-switch-profile

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[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)
[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	integer: 4-octet; 0 = disabled 1 = enabled

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-101]	IP-Block-Multicast	Block all multicast traffic with a scope larger than link-local (for example, global) and prevent mroute creation under these conditions. This attribute does not affect reception of link-local multicast packets.	12	6	integer: 4-octet; 0 = disabled; 1 = enabled
[26-102]	IGMP-Explicit-Tracking	Enable or disable explicit host tracking for IPv4 IGMP interfaces. This option enables the router to explicitly track each individual host that is joined to a group or channel on a particular multi-access network.	12	6	integer: 4-octet; 0 = disabled; 1 = enabled
[26-103]	IGMP-No-Tracking-V2-Grps	Disable IGMP explicit host tracking for groups that contain IGMP V2 hosts. This attribute is valid only if IGMP V3 is enabled on the interface.	12	6	integer: 4-octet; 0 = disabled; 1 = enabled
[26-104]	MLD-Explicit-Tracking	Enable or disable explicit host tracking for IPv6 MLD interfaces. This option enables the router to explicitly track each individual host that is joined to a group or channel on a particular multi-access network.	12	6	integer: 4-octet; 0 = disabled; 1 = enabled
[26-105]	MLD-No-Tracking-V1-Grps	Disable MLD explicit host tracking for groups that contain MLD V1 hosts. This attribute is valid only if MLD V2 is enabled on the interface.	12	6	integer: 4-octet; 0 = disabled; 1 = enabled
[26-106]	Ipv6-Ingress-Policy-Name	IPv6 ingress policy that is applied to the subscriber interface	len	sublen	string: Ipv6-Ingress-Policy-Name
[26-107]	Ipv6-Egress-Policy-Name	IPv6 egress policy that is applied to the subscriber interface	len	sublen	string: Ipv6-Egress-Policy-Name
[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: <ul style="list-style-type: none"> <li>For Ethernet access aggregation: <i>ethernet slot/port [:inner-vlan-id] [:outer-vlan-id]</i></li> <li>For ATM aggregation: <i>atm slot/port:vpi.vci</i></li> </ul>	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

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats *(continued)*

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[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
[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

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-129]	Ipv6-NdRa-Prefix	Prefix value in IPv6 Neighbor Discovery route advertisements	len	sublen	hexadecimal string
[26-130]	QoS-Interfaceset-Name	Name of the QoS interface set to attach to the subscriber interface	len	sublen	string: qos-interfaceset-name
[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
[26-143]	Max-Clients-Per-Interface	<p>Maximum number of PPPoE client sessions supported per interface. For DHCP clients, this value is the maximum number of PPPoE sessions per logical interface. For PPPoE, this value is the maximum number of PPPoE subinterfaces per a PPPoE major interface.</p> <p><i>See JunosE Release Notes, Appendix A, System Maximums</i> corresponding to your software release for information about the maximum number of PPPoE subinterfaces supported for each line module.</p>	12	6	integer: 4-octet
[26-144]	PPP-Monitor-Ingress-Only	Enable or disable monitoring of only ingress traffic to determine inactivity of a PPP session and subsequent disconnection of an inactive session. If this option is disabled or not configured, the router monitors both ingress traffic and egress traffic to determine session inactivity.	12	6	integer: 0 = disable, 1 = enable
[26-147]	Backup-Address-Pool	<p>Name of the backup local address pool that can be used to assign addresses to users being authenticated by a RADIUS server, when the existing addresses in the primary local address pool are fully exhausted.</p> <p>The authentication server overrides the backup local address pool name configured using this attribute with the backup local address pool name received in the RADIUS-Access-Accept message.</p>	len	sublen	string: Backup-address-pool-name

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats (*continued*)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-150]	ICR-Partition-Id	Used in all the RADIUS authentication and accounting (Acct-Start, Acct-Stop, and Interim-Acct messages for both user and service accounting) messages corresponding to a subscriber to determine the partition in which the subscriber has logged in	len	sublen	string:icr-partition-id
[26-151]	Ipv6-Acct-Input-Octets	Number of times that IPv6 octets have been received from the port during the time this service has been provided	12	6	4-octet integer
[26-152]	Ipv6-Acct-Output-Octets	Number of times that IPv6 octets have been sent to the port during the time this service has been provided	12	6	4-octet integer
[26-153]	Ipv6-Acct-Input-Packets	Number of times that IPv6 packets have been received from the port during the time this service has been provided to a framed user	12	6	4-octet integer
[26-154]	Ipv6-Acct-Output-Packets	Number of times that IPv6 packets have been sent to the port in the course of delivering this service to a framed user	12	6	4-octet integer
[26-155]	Ipv6-Acct-Input-Gigawords	Number of times that the IPv6-Acct-Input-Octets counter has wrapped around $2^{32}$ 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	12	6	4-octet integer
[26-156]	Ipv6-Acct-Output-Gigawords	Number of times that the IPv6-Acct-Output-Octets counter has wrapped around $2^{32}$ 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	12	6	4-octet integer
[26-157]	Ipv6-Ndra-Pool	Used in RADIUS Access-Accept message to inform the E Series router to allocate IPv6 Neighbor Discovery router advertisement prefix from this pool for the subscriber. If CLI knob <b>aaa dhcipv6-ndra-pool override</b> is disabled, JunosE interprets this attribute as Neighbor Discovery router advertisement local address pool name.	len	sublen	String: 16 alpha-numeric characters

Table 11: Juniper Networks (Vendor ID 4874) VSA Formats *(continued)*

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[26-161]	Delegated-Ipv6-Pool	Used in RADIUS Access-Accept message to inform the E Series router to allocate IPv6 Neighbor Discovery router advertisement prefix from this pool for the subscriber. If CLI knob <b>aaa dhcpv6-ndra-pool override</b> is enabled, JunosE interprets this attribute as DHCPV6 PD pool name.	len	sublen	String: 16 alpha-numeric characters
[26-164]	Ipv4-release-control	Causes the PPP application to notify the RADIUS server regarding IPv4 addresses released by a subscriber in a dual-stack network, when an IPCP negotiation for IPv4 sessions is terminated or if the IPv4 session becomes inactive. This attribute is added to RADIUS messages only if the subscriber session is of a dual-stack type and if the IPv4 address is allocated from the RADIUS server and not from local address pools.	len	sublen	String: 32 alpha-numeric characters
[26-165]	PCP-Server-Name	Specifies the PCP server name to which DHCP clients send PCP requests. A PCP client must know the fully qualified domain name (FQDN) of a PCP server, before it can communicate with the latter in order to perform the relevant PCP functions.	len	sublen	String: 245 octets(alpha-numeric characters, dashes, periods)

- Related Documentation**
- [Juniper Networks VSAs Supported for Subscriber AAA Access Messages on page 11](#)
  - [Juniper Networks VSAs Supported for Subscriber AAA Accounting Messages on page 21](#)
  - [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
  - [CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages on page 77](#)

## DSL Forum VSAs

Table 12 on page 52 describes the DSL Forum VSAs supported by JunosE Software for RADIUS. JunosE Software uses the vendor ID assigned to the DSL Forum (3561, or DE9 in hexadecimal format) by the Internet Assigned Numbers Authority (IANA).

Table 12: JunosE 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



**Table 12: JunosE Software DSL Forum (Vendor ID 3561) VSA Formats**  
(continued)

Attribute Number	Attribute Name	Description	Length	Subtype Length	Value
[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 12: JunosE 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

- Related Documentation**
- [DSL Forum VSAs Supported for AAA Access and Accounting Messages on page 28](#)
  - [DSL Forum VSAs in AAA Access and Accounting Messages Overview on page 27](#)
  - [CLI Commands Used to Include DSL Forum VSAs in Access and Accounting Messages on page 76](#)

## Pass Through RADIUS Attributes

Table 13 on page 54 describes the RADIUS attribute that is not processed by JunosE Software. The router simply passes this attribute to its destination.

**Table 13: RADIUS Attribute Passed Through by JunosE Software**

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

- Related Documentation**
- [RADIUS IETF Attributes Supported for Subscriber AAA Access Messages on page 8](#)

## RADIUS Attributes 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.

**Related  
Documentation**

- [RADIUS References on page 6](#)
- [RADIUS IETF Attributes on page 33](#)
- [Juniper Networks VSAs on page 39](#)
- [DSL Forum VSAs on page 52](#)



## CHAPTER 7

# RADIUS Attributes for Dynamic and LAG Interfaces

- [VSAs for Dynamic IP Interfaces Overview on page 57](#)
- [Propagation of LAG Subscriber Information to AAA and RADIUS on page 59](#)

### VSAs for Dynamic IP Interfaces Overview

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Table 14 on page 57 describes the VSAs that apply to dynamic IP interfaces and are supported on a per-user basis from RADIUS. For details, see *JunosE Link Layer Configuration Guide*.

**Table 14: VSAs That Apply to Dynamic IP Interfaces**

VSA	Description	Type	Length	Subtype	Subtype Length	Value
Ingress-Policy-Name	Specifies the name of the input (ingress) policy	26	len	10	sublen	string: <i>input-policy-name</i>
Egress-Policy-Name	Specifies the name of the output (egress) policy	26	len	11	sublen	string: <i>output-policy-name</i>
Ingress-Statistics	Indicates whether statistics are collected on input	26	12	12	6	integer: 0 – disable, 1 – enable
Egress-Statistics	Indicates whether statistics are collected on output	26	12	13	6	integer: 0 – disable, 1 – enable

Table 14: VSAs That Apply to Dynamic IP Interfaces (*continued*)

VSA	Description	Type	Length	Subtype	Subtype Length	Value
QoS-Profile-Name	Specifies the name of the QoS profile to attach to the interface	26	len	26	sublen	string: <i>qos-profile-name</i>

To use the VSAs shown in [Table 14 on page 57](#):

- Specify the policy, or one or more QoS VSAs in the desired RADIUS user entries.
- Create the ingress or egress policy, or the QoS profile. Policies minimally consist of one or more policy commands and may include classifier control lists and rate limit profiles. See the *JunosE Policy Management Configuration Guide* for more information about policies and policy routing. See the *JunosE Quality of Service Configuration Guide* for information about creating QoS profiles.

When a dynamic interface is created according to a profile, the router checks with RADIUS to determine whether an input or output policy or a QoS profile must be applied to the interface. The VSA, if present, provides the name, enabling policy or QoS profile lookup. If found, the policy or QoS profile is applied to the dynamic interface.

The router also determines whether the creation profile specifies any policies to be applied to the interface. Policies specified by the RADIUS VSA supersede any specified by the profile, as described in the following example:

The RADIUS user entry includes an Ingress-Policy-Name VSA that specifies the policy input5. The profile specifies two policies, input7 and output1. In this case, the RADIUS-specified input policy (input5) and the profile-specified output policy (output1) are applied to the dynamic interface.

For information about assigning policies via profiles, see the *JunosE Policy Management Configuration Guide*. Only attributes assigned by RADIUS appear in RADIUS Acct-Start messages. RADIUS attributes specified by a profile for dynamic interfaces do not appear in RADIUS Acct-Start messages because the profile is not active when the Acct-Start message is generated. These attributes appear in RADIUS Acct-Stop messages for a profile that is active when the session is terminated.

The following section explains traffic shaping for PPP over ATM interfaces:

- [Traffic Shaping for PPP over ATM Interfaces on page 58](#)

## Traffic Shaping for PPP over ATM Interfaces

The router supports the configuration of traffic shaping parameters for PPP over ATM (PPPoA) via domain-based profiles and RADIUS. In connection with this feature, [Table 15 on page 59](#) describes VSAs that apply to dynamic IP interfaces and are supported on a per-user basis from RADIUS.

Table 15: Traffic-Shaping VSAs That Apply to Dynamic IP Interfaces

VSA	Description	Type	Length	Subtype	Subtype Length	Value
Service-Category	Specifies the type of service	26	12	14	6	integer: 1 – UBR 2 – UBR PCR 3 – NRT VBR 4 – CBR 5 – RT VBR
PCR	Specifies the value for the peak cell rate (PCR)	26	12	15	6	integer
SCR	Specifies the value for the sustained cell rate (SCR)	26	12	16	6	integer
MBS	Specifies the maximum burst size (MBS)	26	12	17	6	integer

To configure traffic-shaping parameters for PPPoA via domain maps, use the **atm** command in Domain Map Configuration mode.

**Related Documentation**

- Creating an IP Interface

## Propagation of LAG Subscriber Information to AAA and RADIUS

The RADIUS application sends the link aggregation group (LAG) interface ID to the RADIUS server when the subscriber is connected over LAG in DHCP standalone authenticate mode. In DHCP standalone authenticate mode, the DHCP local server enables you to configure AAA-based authentication of standalone mode DHCP clients. In addition to providing increased security, AAA authentication also provides RADIUS-based input to IP address pool selection for standalone mode clients. The RADIUS applications use the LAG interface ID to create the Acct-Session-Id, Nas-Port-Type, Nas-Port-Id, Nas-Port, and Calling-Station-Id attributes and send them to the RADIUS server in the Access-Request, Acct-Start, and Acct-Stop messages.

The RADIUS client uses one of the following LAG interface ID formats:

```
lag lag-name [.subinterface [:vlan]]
```

or

```
lag lag-name [.subinterface [:svlan-vlan]]
```

where:

- *lag-name*—Name of the LAG bundle
- *subinterface*—Number of the LAG subinterface, in the range 1–2147483647
- *vlan*—VLAN ID number
- *svlan-vlan*—S-VLAN ID number in the range 0–4095

The RADIUS application sends the LAG interface ID to the RADIUS server only when the subscribers in DHCP standalone authenticate mode are initialized. When other subscribers such as PPP subscribers and DHCP equal-access mode subscribers initialize over a LAG interface, the RADIUS application sends only the name of the first Ethernet interface in the LAG bundle, and not the LAG interface ID. In this case, the Ethernet interface ID is displayed in the output of the **show subscribers interface** command.

The RADIUS client application creates the following RADIUS attributes based on the LAG interface ID:

**[44] Acct-Session-Id**—When you issue the **radius acct-session-id-format description** command, the RADIUS client uses the generic format: *erx <interface type> <interface identifier>: <hex number>* with the LAG interface ID as the interface identifier.

**[61] Nas-Port-Type**— When you issue the **radius ethernet-port-type** command from Global Configuration mode or the **nas-port-type ethernet** command from AAA Profile Configuration mode, RADIUS calculates the value of the Nas-Port-Type attribute. If you use neither of these commands, RADIUS uses the default [15] Nas-Port-Ethernet value for this attribute.

**[5] Nas-Port**— RADIUS derives a unique value from the subscriber's profileHandle and uses the value for the Nas-Port attribute. The **radius nas-port-format**, **radius vlan nas-port-format stacked**, and **radius pppoe nas-port-format** commands do not affect the value of the Nas-Port attribute.

**[87] Nas-Port-Id**— The **radius override nas-port-id remote-circuit-id** command configures RADIUS to use the PPPoE remote circuit ID for the Nas-Port-Id attribute. By default, RADIUS uses the LAG interface ID for the Nas-Port-Id attribute. Use the **aaa intf-desc-format include sub-intf disable** command to exclude the subinterface and S-VLAN ID in the LAG interface ID. By default, the subinterface and S-VLAN ID are included in the LAG interface ID.

**[31] Calling-Station-Id**—The **radius override calling-station-id remote-circuit-id** command enables RADIUS to use the PPPoE remote circuit ID for the Calling-Station-Id attribute. By default, RADIUS uses a delimited format for the interface description. The **radius calling-station-format** command does not affect the value of the Calling-Station-Id attribute.

For example, a subscriber with the default AAA or RADIUS configuration who is connected over a LAG interface lag1, with subinterface-1, VLAN ID 10, S-VLAN ID 1, and router named asterix uses the following values for RADIUS attributes in RADIUS authentication and accounting messages:



Table 16: RADIUS Attributes Specifying LAG Interface

Field Name	Field Description
Acct-Session-Id	erx lag lag1.1:1-10:0001048620
Nas-Port-Type	15
Nas-Port	2148532268
Nas-Port-Id	lag lag1.1:1-10
Calling-Station-Id	#asterix#lag1#10

**Related  
Documentation**

- *Monitoring and Troubleshooting Remote Access* chapter
- [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)
- Configuring AAA Authentication for DHCP Local Server Standalone Mode
- show subscribers



## CHAPTER 8

# Application Terminate Reasons

- [AAA Terminate Reasons on page 63](#)
- [RADIUS Client Terminate Reasons on page 64](#)

### AAA Terminate Reasons

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Table 17 on page 63 lists the default AAA terminate mappings. The table indicates the supported AAA terminate and deny reasons and the RADIUS Acct-Terminate-Cause attributes they are mapped to by default.

**Table 17: Default AAA Mappings**

AAA Shutdown or Deny Reason	RADIUS Acct-Terminate-Cause	
	Code	Description
deny address allocation failure	17	user error
deny address assignment failure	17	user error
deny application error	17	user error
deny authentication denied	17	user error
deny authentication failure	17	user error
deny authorization failure	17	user error
deny incompatible request	17	user error
deny invalid tunnel configuration	17	user error
deny limit exceeded	17	user error
deny mixed user types	10	nas request
deny no access challenge support	17	user error
deny no address allocation resources	17	user error

Table 17: Default AAA Mappings (*continued*)

AAA Shutdown or Deny Reason	RADIUS Acct-Terminate-Cause	
	Code	Description
deny no resources	10	nas request
deny redirected authentication failure	17	user error
deny server not available	17	user error
deny server request timeout	17	user error
deny terminating user	10	nas request
deny unknown subscriber	17	user error
deny user termination	17	user error
shutdown address lease expiration	10	nas request
shutdown administrative reset	6	admin reset

**Related Documentation**

- Overview of Mapping Application Terminate Reasons and RADIUS Terminate Codes
- Monitoring Application Terminate Reason Mappings

## RADIUS Client Terminate Reasons

Table 18 on page 64 lists the default RADIUS client terminate mappings. The table indicates the supported RADIUS client terminate reasons and the RADIUS Acct-Terminate-Cause attributes they are mapped to by default.

Table 18: Default RADIUS Client Mappings

RADIUS Client Terminate Reason	RADIUS Acct-Terminate-Cause	
	Code	Description
no-acct-server	10	nas request
system-reboot	10	nas request
virtual-router-deletion	10	nas request

**Related Documentation**

- Overview of Mapping Application Terminate Reasons and RADIUS Terminate Codes
- Monitoring Application Terminate Reason Mappings

## PART 2

# Configuration

- [Configuration Tasks for RADIUS Servers on page 67](#)
- [Configuring RADIUS Attributes in Access and Accounting Messages on page 71](#)
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- [Examples on page 143](#)



# Configuration Tasks for RADIUS Servers

- [Configuring RADIUS AAA Servers on page 67](#)

## Configuring RADIUS AAA Servers

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The number of RADIUS servers you can configure depends on available memory. The router has an embedded RADIUS client for authentication and accounting.



**NOTE:** You can configure B-RAS with RADIUS accounting, but without RADIUS authentication. In this configuration, the username and password on the remote end are not authenticated and can be set to any value.

You must assign an IP address to a RADIUS authentication or accounting server to configure it.

If you do not configure a primary authentication or accounting server, all authentication and accounting requests will fail. You can configure other servers as backup in the event that the primary server cannot be reached. Configure each server individually.

To configure an authentication or accounting RADIUS server:

1. Specify the authentication or accounting server address.

```
host1(config)#radius authentication server 10.10.10.1
host1(config-radius)#
or
host1(config)#radius accounting server 10.10.10.6
host1(config-radius)#
```

2. (Optional) Specify a UDP port for RADIUS authentication or accounting server requests.

```
host1(config-radius)#udp-port 1645
```

3. Specify an authentication or accounting server secret.

```
host1(config-radius)#key gismo
```

4. (Optional) Specify the number of retries the router makes to an authentication or accounting server before it attempts to contact another server.

```
host1(config-radius)#retransmit 2
```

5. (Optional) Specify the number of seconds between retries.

```
host1(config-radius)#timeout 5
```

6. (Optional) Specify the maximum number of outstanding requests.

```
host1(config-radius)#max-sessions 100
```

7. (Optional) Specify the amount of time to remove a server from the available list when a timeout occurs.

```
host1(config-radius)#deadtime 10
```

8. (Optional) In Global Configuration mode, specify whether the E Series router should move on to the next RADIUS server when the router receives an Access-Reject message for the user it is authenticating.

```
host1(config)#radius rollover-on-reject enable
```

9. (Optional) Enable duplicate address checking.

```
host1(config)aaa duplicate-address-check enable
```

10. (Optional) Specify that duplicate accounting records be sent to the accounting server for a virtual router.

```
host1(config)#aaa accounting duplication routerBoston
```

11. (Optional) Enter the correct virtual router context, and specify the virtual router group to which broadcast accounting records are sent.

```
host1(config)#virtual-router vrSouth25
host1:vrSouth25(config)#aaa accounting broadcast westVrGroup38
host1:vrSouth25(config)#exit
```

12. (Optional) Specify that immediate accounting updates be sent to the accounting server when a response is received to an Acct-Start message.

```
host1(config)#aaa accounting immediate-update
```

13. (Optional) Specify whether the router collects all statistics or only the uptime status.

```
host1(config)#aaa accounting time
```

14. (Optional) Specify that tunnel accounting be enabled or disabled.

```
host1(config)#radius tunnel-accounting enable
```

15. (Optional) Specify the default authentication and accounting methods for the subscribers.

```
host1(config)#aaa authentication ppp default radius none
```

16. (Optional) Disable UDP checksums on virtual routers you configure for B-RAS.

```
host1:(config)#virtual router boston
host1:boston(config)#radius udp-checksum disable
```

**Related  
Documentation**

- [aaa accounting broadcast on page 88](#)
- [aaa accounting duplication on page 89](#)
- [aaa accounting immediate-update on page 90](#)



- [aaa authentication default on page 91](#)
- [aaa duplicate-address-check on page 92](#)
- [key on page 93](#)
- [max-sessions on page 95](#)
- [radius accounting server on page 96](#)
- [radius authentication server on page 97](#)
- [radius rollover-on-reject on page 98](#)
- [radius tunnel-accounting on page 99](#)
- [radius udp-checksum on page 100](#)
- [retransmit on page 101](#)
- [timeout on page 102](#)
- [udp-port on page 103](#)
- [virtual-router on page 104](#)



## CHAPTER 10

# Configuring RADIUS Attributes in Access and Accounting Messages

- [CLI Commands Used to Modify RADIUS Attributes on page 71](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
- [CLI Commands Used to Include DSL Forum VSAs in Access and Accounting Messages on page 76](#)
- [CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages on page 77](#)
- [CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages on page 79](#)
- [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)
- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)

### CLI Commands Used to Modify RADIUS Attributes

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You can configure the RADIUS Internet Engineering Task Force (IETF) attributes and the Juniper Networks vendor-specific attributes using CLI commands.

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

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

For a complete list of RADIUS attributes supported by JunosE Software, see [“RADIUS IETF Attributes” on page 33](#).

#### **Related Documentation**

- [CLI Commands Used to Configure RADIUS IETF Attributes on page 80](#)
- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
- [CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages on page 77](#)
- [CLI Commands Used to Include DSL Forum VSAs in Access and Accounting Messages on page 76](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)

- [CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages on page 79](#)

## CLI Commands Used to Include or Exclude Attributes in RADIUS Messages

You can use the **radius include** command to enable or disable the inclusion of RADIUS attributes in Acct-on, Acct-off, Access-Request, Acct-Start, and Acct-Stop messages.

[Table 19 on page 72](#) lists the RADIUS attributes that can be included or excluded in RADIUS messages using the **radius include** command and the RADIUS messages in which the attributes are supported.

**Table 19: RADIUS Attributes Included in Corresponding RADIUS Messages**

Attribute Number	Attribute Name	Access-Request	Acct-on	Acct-off	Acct-Start	Acct-Stop
[5]	NAS-Port	✓	–	–	✓	✓
[8]	Framed-IP-Address	✓	–	–	✓	✓
[9]	Framed-IP-Netmask	–	–	–	✓	✓
[13]	Framed-Compression	–	–	–	✓	✓
[22]	Framed-Route	–	–	–	✓	✓
[25]	Class	–	–	–	✓	✓
[26-10]	Ingress-Policy-Name	–	–	–	✓	✓
[26-11]	Egress-Policy-Name	–	–	–	✓	✓
[26-24]	Pppoe-Description	✓	–	–	✓	✓
[26-26]	QoS-Profile-Name	–	–	–	✓	✓
[26-35]	Acct-Input-Gigapackets	–	–	–	–	✓
[26-43]	Acct-Output-Gigapackets	–	–	–	–	✓
[26-44]	Tunnel-Interface-ID	✓	–	–	✓	✓
[26-45]	Ipv6-Virtual-Router	–	–	–	–	✓
[26-46]	Ipv6-Local-Interface	–	–	–	–	✓
[26-47]	Ipv6-Primary-DNS	–	–	–	–	✓
[26-48]	Ipv6-Secondary-DNS	–	–	–	–	✓

Table 19: RADIUS Attributes Included in Corresponding RADIUS Messages (*continued*)

Attribute Number	Attribute Name	Access-Request	Acct-on	Acct-off	Acct-Start	Acct-Stop
[26-51]	Disconnect-Cause	–	–	–	–	✓
[26-53]	Service-Description	✓	–	–	✓	✓
[26-55]	DHCP-Options	✓	–	–	✓	✓
[26-56]	DHCP-MAC-Address	✓	–	–	✓	✓
[26-57]	DHCP-GI-Address	✓	–	–	✓	✓
[26-62]	MLPPP-Bundle-Name	✓	–	–	✓	✓
[26-63]	Interface-Description	✓	–	–	✓	✓
[26-81]	L2c-Information	✓	–	–	–	–
[26-92]	L2C-Up-Stream-Data	✓	–	–	✓	✓
[26-93]	L2C-Down-Stream-Data	✓	–	–	✓	✓
[26-106]	Ipv6-Ingress-Policy-Name	–	–	–	✓	✓
[26-107]	Ipv6-Egress-Policy-Name	–	–	–	✓	✓
[26-110]	Acc-Loop-Cir-Id	✓	–	–	✓	✓
[26-111]	Acc-Aggr-Cir-Id-Bin	✓	–	–	✓	✓
[26-112]	Acc-Aggr-Cir-Id-Asc	✓	–	–	✓	✓
[26-113]	Act-Data-Rate-Up	✓	–	–	✓	✓
[26-114]	Act-Data-Rate-Dn	✓	–	–	✓	✓
[26-115]	Min-Data-Rate-Up	✓	–	–	✓	✓
[26-116]	Min-Data-Rate-Dn	✓	–	–	✓	✓
[26-117]	Att-Data-Rate-Up	✓	–	–	✓	✓
[26-118]	Att-Data-Rate-Dn	✓	–	–	✓	✓
[26-119]	Max-Data-Rate-Up	✓	–	–	✓	✓
[26-120]	Max-Data-Rate-Dn	✓	–	–	✓	✓

Table 19: RADIUS Attributes Included in Corresponding RADIUS Messages (*continued*)

Attribute Number	Attribute Name	Access-Request	Acct-on	Acct-off	Acct-Start	Acct-Stop
[26-121]	Min-LP-Data-Rate-Up	✓	–	–	✓	✓
[26-122]	Min-LP-Data-Rate-Dn	✓	–	–	✓	✓
[26-123]	Max-Interlv-Delay-Up	✓	–	–	✓	✓
[26-124]	Act-Interlv-Delay-Up	✓	–	–	✓	✓
[26-125]	Max-Interlv-Delay-Dn	✓	–	–	✓	✓
[26-126]	Act-Interlv-Delay-Dn	✓	–	–	✓	✓
[26-127]	DSL-Line-State	✓	–	–	✓	✓
[26-128]	DSL-Type	✓	–	–	✓	✓
[26-129]	Ipv6-NdRa-Prefix	–	–	–	–	✓
[26-141]	Downstream-Calculated-Qos	✓	–	–	✓	✓
[26-142]	Upstream-Calculated-Qos-Rate	✓	–	–	✓	✓
[26-150]	ICR-Partition-Id	✓	–	–	✓	✓
[26-159]	DHCP-Option 82	✓	–	–	✓	✓
[26-165]	PCP-Server-Name	–	–	–	✓	✓
[30]	Called-Station-Id	✓	–	–	✓	✓
[31]	Calling-Station-Id	✓	–	–	✓	✓
[32]	NAS-Identifier	✓	✓	✓	✓	✓
[41]	Acct-Delay-Time	–	✓	✓	–	–
[44]	Acct-Session-Id	✓	✓	✓	–	–
[45]	Acct-Authentic	–	✓	✓	–	–
[49]	Acct-Terminate-Cause	–	–	✓	–	–
[50]	Acct-Multi-Session-Id	✓	–	–	✓	✓
[51]	Acct-Link-Count	–	–	–	✓	✓

Table 19: RADIUS Attributes Included in Corresponding RADIUS Messages (*continued*)

Attribute Number	Attribute Name	Access-Request	Acct-on	Acct-off	Acct-Start	Acct-Stop
[52]	Acct-Input-Gigawords	–	–	–	–	✓
[53]	Acct-Output-Gigawords	–	–	–	–	✓
[55]	Event-Timestamp	–	✓	✓	✓	✓
[61]	NAS-Port-Type	✓	–	–	✓	✓
[64]	Tunnel-Type	✓	–	–	✓	✓
[65]	Tunnel-Medium-Type	✓	–	–	✓	✓
[66]	Tunnel-Client-Endpoint	✓	–	–	✓	✓
[67]	Tunnel-Server-Endpoint	✓	–	–	✓	✓
[68]	Acct-Tunnel-Connection	✓	–	–	✓	✓
[77]	Connect-Info	✓	–	–	✓	✓
[82]	Tunnel-Assignment-Id	–	–	–	✓	✓
[83]	Tunnel-Preference	–	–	–	✓	✓
[87]	NAS-Port-Id	✓	–	–	✓	✓
[90]	Tunnel-Client-Auth-Id	✓	–	–	✓	✓
[91]	Tunnel-Server-Auth-Id	✓	–	–	✓	✓
[96]	Framed-Interface-Id	✓	–	–	✓	✓
[97]	Framed-Ipv6-Prefix	✓	–	–	✓	✓
[99]	Framed-Ipv6-Route	–	–	–	–	✓
[100]	Framed-IPv6-Pool	–	–	–	–	✓
[123]	Delegated-IPv6-Prefix	–	–	–	–	✓
[144]	DS-Lite-Tunnel-Name	–	–	–	✓	✓
[188]	Ascend-Num-In-Multilink	✓	–	–	✓	✓
	All Tunnel-Server-Attributes	✓	–	–	✓	✓

Table 19: RADIUS Attributes Included in Corresponding RADIUS Messages (*continued*)

Attribute Number	Attribute Name	Access-Request	Acct-on	Acct-off	Acct-Start	Acct-Stop
All Ipv6-Accounting Attributes		–	–	–	–	✓

**Related Documentation**

- [Subscriber AAA Access Messages Overview on page 7](#)
- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [RADIUS IETF Attributes on page 33](#)
- [Juniper Networks VSAs on page 39](#)
- [Monitoring Included RADIUS Attributes on page 153](#)
- [radius include on page 112](#)

## CLI Commands Used to Include DSL Forum VSAs in Access and Accounting Messages

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 [“Juniper Networks VSAs” on page 39](#).

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 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 the *Configuring the Downstream Rate Using QoS Parameters* chapter in *JunosE Quality of Service Configuration Guide*.

#### Related Documentation

- [Subscriber AAA Access Messages Overview on page 7](#)
- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [DSL Forum VSAs in AAA Access and Accounting Messages Overview on page 27](#)
- [DSL Forum VSAs Supported for AAA Access and Accounting Messages on page 28](#)
- [DSL Forum VSAs on page 52](#)
- [radius include dsl-forum-attributes on page 131](#)

## CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages

You use the **radius include** command to specify information about ANCP, also known as 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).

**NOTE:**

- 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.
- 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 VSAs” on page 52](#).

Table 20 on page 78 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 20: 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

Table 20: ANCP (L2C)-Related Keywords for radius include Command *(continued)*

Command Keyword	Juniper Networks VSA Number	Juniper Networks VSA Name	ANCP Type	ANCP Subtype
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

#### Related Documentation

- [Subscriber AAA Access Messages Overview on page 7](#)
- [Subscriber AAA Accounting Messages Overview on page 17](#)
- [Juniper Networks VSAs Supported for Subscriber AAA Access Messages on page 11](#)
- [Juniper Networks VSAs Supported for Subscriber AAA Accounting Messages on page 21](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
- [Juniper Networks VSAs on page 39](#)
- [Monitoring Included RADIUS Attributes on page 153](#)
- [radius include on page 112](#)

### CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages

You can use the **radius ignore** command to configure the router to ignore or accept a RADIUS attribute from the received Access-Accept messages.

The following attributes can be ignored or accepted using the **radius ignore** command:

- atm-mbs
- atm-pcr
- atm-scr
- atm-service-category
- egress-policy-name
- framed-ip-netmask
- ingress-policy-name
- ipv6-egress-policy-name
- ipv6-ingress-policy-name
- pppoe-max-session
- virtual-router

- Related Documentation**
- [Subscriber AAA Access Messages Overview on page 7](#)
  - [Monitoring Ignored RADIUS Attributes on page 155](#)
  - [radius ignore on page 110](#)

## CLI Commands Used to Configure RADIUS IETF Attributes

Table 21 on page 80 lists the RADIUS IETF attributes and the corresponding CLI commands used to configure them. The attributes are listed numerically—each attribute is followed by a list of the commands that you can use to manage the attribute.

**Table 21: CLI Commands Used to Configure RADIUS IETF Attributes**

Attribute Number	Attribute Name	CLI Command
[4]	NAS-IP-Address	<ul style="list-style-type: none"> <li>• <a href="#">radius override nas-ip-addr tunnel-client-endpoint</a></li> <li>• <a href="#">radius override nas-info</a></li> </ul>
[5]	NAS-Port	<ul style="list-style-type: none"> <li>• <a href="#">radius include nas-port</a></li> <li>• <a href="#">radius nas-port-format</a></li> <li>• <a href="#">radius nas-port-format extended atm</a></li> <li>• <a href="#">radius nas-port-format extended ethernet</a></li> <li>• <a href="#">radius pppoe nas-port-format unique</a></li> <li>• <a href="#">radius vlan nas-port-format stacked</a></li> </ul>
[8]	Framed-IP-Address	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-ip-addr</a></li> </ul>
[9]	Framed-Ip-Netmask	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-ip-netmask</a></li> <li>• <a href="#">radius ignore framed-ip-netmask</a></li> </ul>
[13]	Framed-Compression	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-compression</a></li> </ul>
[22]	Framed-Route	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-route</a></li> </ul>
[25]	Class	<ul style="list-style-type: none"> <li>• <a href="#">radius include class</a></li> </ul>
[30]	Called-Station-Id	<ul style="list-style-type: none"> <li>• <a href="#">radius include called-station-id</a></li> </ul>
[31]	Calling-Station-Id	<ul style="list-style-type: none"> <li>• <a href="#">radius calling-station-format</a></li> <li>• <a href="#">radius calling-station-delimiter</a></li> <li>• <a href="#">radius include calling-station-id</a></li> <li>• <a href="#">radius override calling-station-id remote-circuit-id</a></li> </ul>

Table 21: CLI Commands Used to Configure RADIUS IETF Attributes (*continued*)

Attribute Number	Attribute Name	CLI Command
[32]	NAS-Identifier	<ul style="list-style-type: none"> <li>• <b>radius nas-identifier</b></li> <li>• <b>radius include nas-identifier</b></li> <li>• <b>radius override nas-info</b></li> <li>• <b>radius remote-circuit-id-format</b></li> <li>• <b>radius remote-circuit-id-delimiter</b></li> </ul>
[41]	Acct-Delay-Time	<ul style="list-style-type: none"> <li>• <b>radius include acct-delay-time</b></li> </ul>
[44]	Acct-Session-Id	<ul style="list-style-type: none"> <li>• <b>radius include acct-session-id</b></li> <li>• <b>radius acct-session-id-format</b></li> </ul>
[45]	Acct-Authentic	<ul style="list-style-type: none"> <li>• <b>radius include acct-authentic</b></li> </ul>
[49]	Acct-Terminate-Cause	<ul style="list-style-type: none"> <li>• <b>radius include acct-terminate-cause</b></li> </ul>
[50]	Acct-Multi-Session-Id	<ul style="list-style-type: none"> <li>• <b>radius include acct-multi-session-id</b></li> </ul>
[51]	Acct-Link-Count	<ul style="list-style-type: none"> <li>• <b>radius include acct-link-count</b></li> </ul>
[52]	Acct-Input-Gigawords	<ul style="list-style-type: none"> <li>• <b>radius include input-gigawords</b></li> </ul>
[53]	Output-Gigawords	<ul style="list-style-type: none"> <li>• <b>radius include output-gigawords</b></li> </ul>
[55]	Event-Timestamp	<ul style="list-style-type: none"> <li>• <b>radius include event-timestamp</b></li> </ul>
[61]	NAS-Port-Type	<ul style="list-style-type: none"> <li>• <b>radius dsl-port-type</b></li> <li>• <b>radius ethernet-port-type</b></li> <li>• <b>radius include nas-port-type</b></li> </ul>
[64]	Tunnel-Type	<ul style="list-style-type: none"> <li>• <b>radius include tunnel-type</b></li> </ul>
[65]	Tunnel-Medium-Type	<ul style="list-style-type: none"> <li>• <b>radius include tunnel-medium-type</b></li> </ul>
[66]	Tunnel-Client-Endpoint	<ul style="list-style-type: none"> <li>• <b>radius include tunnel-client-endpoint</b></li> </ul>
[67]	Tunnel-Server-Endpoint	<ul style="list-style-type: none"> <li>• <b>radius include tunnel-server-endpoint</b></li> </ul>
[68]	Acct-Tunnel-Connection	<ul style="list-style-type: none"> <li>• <b>radius include acct-tunnel-connection</b></li> </ul>
[77]	Connect-Info	<ul style="list-style-type: none"> <li>• <b>radius connect-info-format</b></li> <li>• <b>l2tp-connect-speed</b></li> <li>• <b>radius include connect-info</b></li> </ul>
[82]	Tunnel-Assignment-Id	<ul style="list-style-type: none"> <li>• <b>radius include tunnel-assignment-id</b></li> </ul>
[83]	Tunnel-Preference	<ul style="list-style-type: none"> <li>• <b>radius include tunnel-preference</b></li> </ul>

Table 21: CLI Commands Used to Configure RADIUS IETF Attributes (*continued*)

Attribute Number	Attribute Name	CLI Command
[87]	NAS-Port-Id	<ul style="list-style-type: none"> <li>• <a href="#">aaa intf-desc-format include</a></li> <li>• <a href="#">radius include nas-port-id</a></li> <li>• <a href="#">radius override nas-port-id remote-circuit-id</a></li> </ul>
[90]	Tunnel-Client-Auth-Id	<ul style="list-style-type: none"> <li>• <a href="#">radius include tunnel-client-auth-id</a></li> </ul>
[91]	Tunnel-Server-Auth-Id	<ul style="list-style-type: none"> <li>• <a href="#">radius include tunnel-server-auth-id</a></li> </ul>
[96]	Framed-Interface-Id	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-interface-id</a></li> </ul>
[97]	Framed-Ipv6-Prefix	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-ipv6-prefix</a></li> </ul>
[99]	Framed-Ipv6-Route	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-ipv6-route</a></li> </ul>
[100]	Framed-Ipv6-Pool	<ul style="list-style-type: none"> <li>• <a href="#">radius include framed-ipv6-pool</a></li> </ul>
[123]	Delegated-Ipv6-Prefix	<ul style="list-style-type: none"> <li>• <a href="#">radius include delegated-ipv6-prefix</a></li> </ul>
[144]	DS-Lite-Tunnel-Name	<ul style="list-style-type: none"> <li>• <a href="#">radius include ds-lite-tunnel-name</a></li> </ul>
[188]	Ascend-Num-In-Multilink	<ul style="list-style-type: none"> <li>• <a href="#">radius include ascend-num-in-multilink</a></li> </ul>
	All Tunnel Server Attributes	<ul style="list-style-type: none"> <li>• <a href="#">radius include tunnel-server-attributes</a></li> </ul>

**Related Documentation**

- [Propagation of LAG Subscriber Information to AAA and RADIUS on page 59](#)
- [RADIUS IETF Attributes Supported for Subscriber AAA Access Messages on page 8](#)
- [RADIUS IETF Attributes Supported for Subscriber AAA Accounting Messages on page 18](#)
- [RADIUS IETF Attributes Supported for AAA Tunnel Accounting Messages on page 24](#)
- [RADIUS IETF Attributes on page 33](#)
- [aaa intf-desc-format include](#)
- [radius acct-session-id-format](#)
- [radius calling-station-delimiter on page 126](#)
- [radius calling-station-format on page 127](#)
- [radius connect-info-format on page 109](#)
- [radius dsl-port-type](#)
- [radius ethernet-port-type](#)
- [radius ignore on page 110](#)

- [radius include on page 112](#)
- radius nas-identifier
- [radius nas-port-format on page 122](#)
- [radius nas-port-format extended on page 123](#)
- [radius override calling-station-id remote-circuit-id on page 133](#)
- [radius override nas-info on page 106](#)
- [radius override nas-ip-addr tunnel-client-endpoint on page 135](#)
- [radius override nas-port-id remote-circuit-id on page 136](#)
- [radius pppoe nas-port-format unique on page 125](#)
- [radius remote-circuit-id-delimiter on page 138](#)
- [radius remote-circuit-id-format on page 137](#)
- radius vlan nas-port-format stacked

## CLI Commands Used to Configure Juniper Networks VSAs

Table 22 on page 83 lists the Juniper Networks VSAs and the corresponding CLI commands used to modify them. The attributes are listed numerically.

Table 22: CLI Commands Used to Configure Juniper Networks VSAs

Attribute Number	Attribute Name	CLI Command
[26-1]	Virtual-Router	• <a href="#">radius ignore virtual-router</a>
[26-10]	Ingress-Policy-Name	• <a href="#">radius include ingress-policy-name</a> • <a href="#">radius ignore ingress-policy-name</a>
[26-11]	Egress-Policy-Name	• <a href="#">radius include egress-policy-name</a> • <a href="#">radius ignore egress-policy-name</a>
[26-14]	Service-Category	• <a href="#">radius ignore atm-service-category</a>
[26-15]	PCR	• <a href="#">radius ignore atm-pcr</a>
[26-16]	SCR	• <a href="#">radius ignore atm-scr</a>
[26-17]	MBS	• <a href="#">radius ignore atm-mbs</a>
[26-24]	Pppoe-Description	• <a href="#">radius include pppoe-description</a>
[26-26]	QoS-Profile-Name	• <a href="#">radius include qos-profile-name</a>
[26-35]	Acct-Input-Gigapackets	• <a href="#">radius include input-gigapkts</a>

Table 22: CLI Commands Used to Configure Juniper Networks VSAs (*continued*)

Attribute Number	Attribute Name	CLI Command
[26-36]	Acct-Output-Gigapackets	• <a href="#">radius include output-gigapkts</a>
[26-44]	Tunnel-Interface-Id	• <a href="#">radius include tunnel-interface-id</a>
[26-45]	Ipv6-Virtual-Router	• <a href="#">radius include ipv6-virtual-router</a>
[26-46]	Ipv6-Local-Interface	• <a href="#">radius include ipv6-local-interface</a>
[26-47]	Ipv6-Primary-DNS	• <a href="#">radius include ipv6-primary-dns</a>
[26-48]	Ipv6-Secondary-DNS	• <a href="#">radius include ipv6-secondary-dns</a>
[26-51]	Disconnect-Cause	• <a href="#">radius include l2tp-ppp-disconnect-cause</a>
[26-53]	Service-Description	• <a href="#">radius include profile-service-description</a>
[26-55]	DHCP-Options	• <a href="#">radius include dhcp-options</a>
[26-56]	DHCP-MAC-Address	• <a href="#">radius include dhcp-mac-address</a>
[26-57]	DHCP-GI-Address	• <a href="#">radius include dhcp-gi-address</a>
[26-62]	MLPPP-Bundle-Name	• <a href="#">radius include mlppp-bundle-name</a>
[26-63]	Interface-Desc	• <a href="#">radius include interface-description</a>
[26-81]	L2C-Information	• <a href="#">radius include access-loop-parameters</a>
[26-92]	L2C-Up-Stream-Data	• <a href="#">radius include l2c-upstream-data</a>
[26-93]	L2C-Down-Stream-Data	• <a href="#">radius include l2c-downstream-data</a>
[26-106]	Ipv6-Ingress-Policy-Name	• <a href="#">radius include ipv6-ingress-policy-name</a> • <a href="#">radius ignore ipv6-ingress-policy-name</a>
[26-107]	Ipv6-Egress-Policy-Name	• <a href="#">radius include ipv6-egress-policy-name</a> • <a href="#">radius ignore ipv6-egress-policy-name</a>
[26-129]	Ipv6-NdRa-Prefix	• <a href="#">radius include ipv6-nd-ra-prefix</a>



Table 22: CLI Commands Used to Configure Juniper Networks VSAs (*continued*)

Attribute Number	Attribute Name	CLI Command
[26-141]	Downstream-Calculated-Qos-Rate	<ul style="list-style-type: none"> <li>• <a href="#">radius include downstream-calculated-qos-rate access-request</a></li> <li>• <a href="#">radius include downstream-calculated-qos-rate acct-start</a></li> <li>• <a href="#">radius include downstream-calculated-qos-rate acct-stop</a></li> </ul>
[26-142]	Upstream-Calculated-Qos-Rate	<ul style="list-style-type: none"> <li>• <a href="#">radius include upstream-calculated-qos-rate access-request</a></li> <li>• <a href="#">radius include upstream-calculated-qos-rate acct-start</a></li> <li>• <a href="#">radius include upstream-calculated-qos-rate acct-stop</a></li> </ul>
[26-143]	Max-Clients-Per-Interface	<ul style="list-style-type: none"> <li>• <a href="#">radius ignore pppoe-max-session</a></li> </ul>
[26-150]	ICR-Partition-Id	<ul style="list-style-type: none"> <li>• <a href="#">radius include icr-partition-id</a></li> <li>• <a href="#">radius icr-partition-accounting</a></li> </ul>
[26-151]	IPv6-Acct-Input-Octets	<ul style="list-style-type: none"> <li>• <a href="#">radius include ipv6-accounting</a></li> </ul>
[26-152]	IPv6-Acct-Output-Octets	<ul style="list-style-type: none"> <li>• <a href="#">radius include ipv6-accounting</a></li> </ul>
[26-153]	IPv6-Acct-Input-Packets	<ul style="list-style-type: none"> <li>• <a href="#">radius include ipv6-accounting</a></li> </ul>
[26-154]	IPv6-Acct-Output-Packets	<ul style="list-style-type: none"> <li>• <a href="#">radius include ipv6-accounting</a></li> </ul>
[26-155]	IPv6-Acct-Input-Gigawords	<ul style="list-style-type: none"> <li>• <a href="#">radius include ipv6-accounting</a></li> </ul>
[26-156]	IPv6-Acct-Output-Gigawords	<ul style="list-style-type: none"> <li>• <a href="#">radius include ipv6-accounting</a></li> </ul>
[26-159]	DHCP-Option 82	<ul style="list-style-type: none"> <li>• <a href="#">radius include dhcp-option-82</a></li> </ul>
[26-165]	PCP-Server-Name	<ul style="list-style-type: none"> <li>• <a href="#">radius include pcp-server-name</a></li> </ul>

**Related Documentation**

- [Juniper Networks VSAs Supported for Subscriber AAA Access Messages on page 11](#)
- [Juniper Networks VSAs Supported for Subscriber AAA Accounting Messages on page 21](#)
- [RADIUS Attributes Supported for CLI AAA Messages on page 31](#)
- [Juniper Networks VSAs on page 39](#)
- [Monitoring Included RADIUS Attributes on page 153](#)
- [Monitoring Ignored RADIUS Attributes on page 155](#)

- radius icr-partition-accounting
- [radius ignore on page 110](#)
- [radius include on page 112](#)

## CHAPTER 11

# Configuration Commands for RADIUS Servers

## aaa accounting broadcast

---

**Syntax**    `aaa accounting broadcast vrGroupName`  
              `no aaa accounting broadcast`

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Broadcasts accounting records for a virtual router to accounting servers of the virtual routers in the specified virtual router group. The **no** version disables the feature.

**Options**    • *vrGroupName*—Name of the virtual router group; a string of up to 32 characters

**Mode**    Global Configuration

## aaa accounting duplication

---

**Syntax**    `aaa accounting duplication routerName`  
              `no aaa accounting duplication`

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Sends duplicate accounting records to the accounting server of a different virtual router. The **no** version disables the feature.

**Options**    • *routerName*—Virtual router name

**Mode**    Global Configuration

## aaa accounting immediate-update

---

**Syntax**   aaa accounting immediate-update { enable | disable }  
             no aaa accounting immediate-update

**Release Information**   Command introduced before JunosE Release 7.1.0.

**Description**   Configures the router to send an Acct-Update message to the accounting server on receipt of a response (ACK or timeout) for the Acct-Start message. The **no** version restores the default condition, disabling immediate updates.

**Options**

- enable—Specifies the feature
- disable—Disables the feature; this is the default setting

**Mode**   Global Configuration

---

## aaa authentication default

---

**Syntax**    `aaa authentication subscriberType default authenticator [ authenticator ]*`  
`no aaa authentication subscriberType default`

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Specifies the authentication method used for a particular type of subscriber. The **no** version produces the same result as specifying the **radius** value.

- Options**
- *subscriberType*—Type of subscriber:
    - atm1483—Specifies ATM 1483 subscribers
    - ip—Specifies IP subscriber management interfaces
    - ipsec—Specifies IPsec subscribers
    - ppp—Specifies PPP subscribers
    - radius-relay—Specifies RADIUS relay server subscribers
    - tunnel—Specifies tunnel subscribers
  - *authenticator*—Authentication method:
    - none—Disables authentication, allowing all users access
    - local—Enables local authentication; supported for PPP subscribers only
    - radius—Enables RADIUS for authentication
    - \*—Indicates that one or more parameters can be repeated multiple times in a list in the command line

**Mode**    Global Configuration

## aaa duplicate-address-check

---

**Syntax**   aaa duplicate-address-check { enable | disable }

**Release Information**   Command introduced before JunosE Release 7.1.0.

**Description**   Allows you to enable or disable routing table address lookup or duplicate address check. There is no **no** version.



.....  
**NOTE:** To use this command, you must have a B-RAS license. Run the license **b-ras** command and enter your password.  
.....

- Options**
- enable—Specifies the feature; this is the default
  - disable—Disables the feature

**Mode**   Global Configuration



## key

---

**Syntax** To assign a RADIUS key:

*key secret*

*no key*

To assign a RADIUS relay key:

*key ipAddress ipMask relaySecret*

*no key ipAddress ipMask*

To assign an ISAKMP/IKE key:

*key keyString*

*no key*

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** From RADIUS Configuration mode, specifies the secret for the RADIUS authentication, accounting, dynamic-request server, or preauthentication server that is used to calculate the RADIUS authenticator field during exchanges with the RADIUS server. The **no** version removes the secret and causes the router to drop all requests for the RADIUS client.

From RADIUS Relay Configuration mode, specifies the IP address and mask of the network that will use the relay authentication or accounting server, and the secret used during exchanges between the RADIUS relay server and client. The **no** version removes the secret.

From IPsec Manual Key Configuration mode, configures a manual ISAKMP/IKE preshared key. There is no **no** version. To delete a key, use the **no** version of the **ipsec key manual** command.

- Options**
- *secret*—Authentication, accounting, dynamic-request, or preauthentication server secret text string used by RADIUS to encrypt the client and server authenticator field during exchanges between the router and a RADIUS server. The router encrypts PPP PAP passwords using this text string.
  - *ipAddress*—IP address for client network
  - *ipMask*—IP mask for the client network
  - *relaySecret*—Text string; up to 32 characters
  - *keyString*—Key value in ASCII format; up to 200 characters

**Mode** IPsec Manual Key Configuration, RADIUS Configuration, RADIUS Relay Configuration

- Related Documentation**
- [Configuring RADIUS-Based Packet Mirroring](#)

## max-sessions

**Syntax** For RADIUS:

`max-sessions sessionLimit`

`no max-sessions`

For AAA domain map and tunnel group tunnels:

`max-sessions maxSessionsPerTunnel`

`{ no | default } max-sessions`

For L2TP:

`max-sessions maxSessionsPerProfile`

`{ no | default } max-sessions`

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** For RADIUS, specifies the number of outstanding requests to a server. The **no** version reverts to the default value.

For AAA domain map, and tunnel group tunnels, sets the maximum sessions per tunnel. The **no** version disables the feature. The **default** version sets the value to zero.

For L2TP, sets the maximum sessions allowed for destination and host profiles by the LNS. The **no** and **default** versions disable the feature.

- Options**
- *sessionLimit*—Maximum number of outstanding requests to a specific server in the range from 10 through to the maximum value; default value is 255
- For information about the number of concurrent RADIUS requests that the router supports for authentication and accounting servers, see *JunosE Release Notes, Appendix A, System Maximums*.
- *maxSessionsPerTunnel*—Maximum number of sessions that can be configured on a tunnel in the range 0–4294967295; default value is zero
  - *maxSessionsPerProfile*—Maximum number of sessions that can be established at the LNS for a destination or host profile; in the range from 1 through to a maximum of the chassis-wide limit; default value is the chassis-wide limit
- For information about the maximum number of L2TP sessions supported per chassis, see *JunosE Release Notes, Appendix A, System Maximums*.

**Mode** Domain Map Tunnel Configuration, L2TP Destination Profile Configuration, L2TP Destination Profile Host Configuration, RADIUS Configuration, Tunnel Group Tunnel Configuration, L2TP Destination Profile Sessions Limit Configuration, L2TP Destination Profile Host Sessions Limit Configuration

## radius accounting server

---

**Syntax** [ no ] radius accounting server *ipAddress*

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Specifies the IP address of a RADIUS accounting server and puts the E Series router into RADIUS Configuration mode. The **no** version deletes the instance of the RADIUS server.

**Options** • *ipAddress*—IP address of the server

**Mode** Global Configuration

## radius authentication server

---

**Syntax** [ no ] radius authentication server *ipAddress*

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Specifies the IP address of a RADIUS authentication server and puts the E Series router into RADIUS Configuration mode. The **no** version deletes the instance of the RADIUS server.

**Options** • *ipAddress*—IP address of the server

**Mode** Global Configuration

## radius rollover-on-reject

---

**Syntax**    radius rollover-on-reject { enable | disable }  
              no radius rollover-on-reject

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    On a virtual router, specifies whether the router should roll over to the next RADIUS server when the router receives an access-reject message for the user it is authenticating. The **no** version restores the default value, disable.

**Options**    • enable—Specifies the feature  
              • disable—Disables the feature; this is the default setting

**Mode**    Global Configuration

## radius tunnel-accounting

---

**Syntax**    radius tunnel-accounting { enable | disable }  
              no radius tunnel-accounting

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Enables or disables tunnel accounting. The **no** version restores the default value, disable.

**Options**    • enable—Specifies the feature  
              • disable—Disables the feature; this is the default setting

**Mode**    Global Configuration

## radius udp-checksum

---

**Syntax**    radius udp-checksum { enable | disable }  
             no radius udp-checksum

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Enables or disables UDP checksum for RADIUS packets on virtual routers that you configure for B-RAS. The **no** version restores the default value, enable.

**Options**    • enable—Specifies the feature; this is the default setting  
             • disable—Disables the feature

**Mode**    Global Configuration



## retransmit

---

**Syntax**    `retransmit retries`

`no retransmit`

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Specifies the maximum number of times a router retransmits a RADIUS packet to an authentication or accounting server. The **no** version restores the default value.

**Options**    • *retries*—Number of retries, in the range 0–100; default value is 3

**Mode**    RADIUS Configuration

## timeout

---

**Syntax** RADIUS:

`timeout waitTime`

`no timeout`

RTR:

`timeout timeoutValue`

`no timeout`

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** When used from RADIUS Configuration mode, specifies the interval, in seconds, before the router retransmits a RADIUS packet to an authentication or accounting server. The **no** version restores the default.

When used from RTR Configuration mode, specifies the timeout for a Response Time Reporter operation. The **no** version returns the operation to the default value. You can apply this parameter only to *echo* entries.

- Options**
- *waitTime*—Number of seconds in the range 1–1000; default value is 3
  - *timeoutValue*—Number in milliseconds that the operation waits for a response; if the value is set to 0 or is larger than frequency, it will be ignored; default value is 5000

**Mode** RADIUS Configuration, RTR Configuration

## udp-port

---

**Syntax**    `udp-port port`  
              `no udp-port`

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    From RADIUS Configuration mode, specifies the UDP port on the router where the RADIUS authentication, accounting, or dynamic-request servers reside. The router uses this port to communicate with the RADIUS servers. The **no** version restores the default value.

From RADIUS Relay Configuration mode, specifies the UDP port on the router where the RADIUS relay authentication or accounting server resides. The router uses this port to communicate with the RADIUS relay servers. The **no** version restores the default value.

- Options**    • *port*—Port number in the range 1–65535
- 1812—Default for RADIUS and RADIUS relay authentication servers
  - 1813—Default for RADIUS and RADIUS relay accounting servers
  - 1700—Default for RADIUS dynamic-request servers

**Mode**    RADIUS Configuration, RADIUS Relay Configuration

**Related Documentation**    • Configuring RADIUS-Based Packet Mirroring

## virtual-router

---

**Syntax** `virtual-router vrName | :vrfName | vrName:vrfName`  
`no virtual-router vrName [ wait-for-completion [ waitSeconds ] ]`

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Creates a virtual router or accesses the context of a previously created virtual router or a VRF. The **no** version deletes the virtual router, and the router defaults to the default virtual router. Issuing a **no** version that specifies an existing VRF only displays the error message: "Cannot delete a VRF with this command." You must use the **no ip vrf** command to remove a VRF.



**NOTE:** In Domain Map Configuration mode, the **virtual-router** command has been replaced by the **router-name** command and may be removed completely from Domain Map Configuration mode in a future release.

- Options**
- *vrName*—Name of the virtual router; a string of 1–32 alphanumeric characters
  - :*vrfName*—Name of a VRF in the current VR context; a string of 1–32 alphanumeric characters
  - *vrName*:*vrfName*—Name of a VRF in the context of a VR other than the current VR
  - wait-for-completion—Specifies (in the absence of *waitSeconds*) that the CLI waits for completion of the **no** version operation before it returns a prompt, regardless of how long that takes
  - *waitSeconds*—Number of seconds, in the range 1–64000, that the CLI waits before it returns a prompt, regardless of whether the **no** version operation has been completed

**Mode** Global Configuration, Privileged Exec

## CHAPTER 12

# Configuration Commands for RADIUS Attributes

## radius override nas-info

---

**Syntax** [ no ] radius override nas-info

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Configures the RADIUS client for a virtual router context to override the standard use of the NAS-IP-Address [4] and NAS-Identifier [32] attributes when the client performs AAA broadcast accounting. Normally, AAA accounting packets include the NAS-IP-Address and NAS-Identifier attributes of the virtual router that generates the accounting information. However, this command specifies that the broadcast accounting packets instead include the authenticating virtual router's NAS-IP-Address and NAS-Identifier attributes. The **no** version restores the standard use of the two attributes in AAA accounting information.

**Mode** Global Configuration

## radius accounting server

---

**Syntax** [ no ] radius accounting server *ipAddress*

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Specifies the IP address of a RADIUS accounting server and puts the E Series router into RADIUS Configuration mode. The **no** version deletes the instance of the RADIUS server.

**Options** • *ipAddress*—IP address of the server

**Mode** Global Configuration

## radius authentication server

---

**Syntax** [ no ] radius authentication server *ipAddress*

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Specifies the IP address of a RADIUS authentication server and puts the E Series router into RADIUS Configuration mode. The **no** version deletes the instance of the RADIUS server.

**Options** • *ipAddress*—IP address of the server

**Mode** Global Configuration



## radius connect-info-format

---

**Syntax** radius connect-info-format { l2tp-connect-speed |  
l2tp-connect-speed-rx-when-equal }  
  
no radius connect-info-format

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Specifies the format and enables the generation of RADIUS attribute 77, Connect-Info, on the LNS. The format uses the received L2TP connect-speed AVPs that the LAC sends to the LNS. The **no** version restores the default, in which the LNS does not generate the Connect-Info attribute.

- Options**
- l2tp-connect-speed—Specifies that the Connect-Info attribute include only the RX speed when the RX speed is different from the TX speed and is greater than zero.
  - l2tp-connect-speed-rx-when-equal—Specifies that the Connect-Info attribute always include the RX speed when the speed is greater than zero.

**Mode** Global Configuration

## radius ignore

---

**Syntax**    radius ignore *attributeName* { enable | disable }

no radius ignore *attributeName*

**Release Information**    Command introduced before JunosE Release 7.1.0.  
                             **pppoe-max-session** keyword added in JunosE Release 9.3.0.  
                             **ipv6-egress-policy-name** and **ipv6-ingress-policy-name** attributes added in JunosE Release 13.0.0.

**Description**    Ignores the specified attribute in RADIUS Access-Accept messages. All attributes are disabled by default except for Framed-Ip-Netmask and Max-Clients-Per-Interface (pppoe-max-session). The **no** version restores the default.

- Options**    • *attributeName*—One of the following RADIUS attributes:
- atm-mbs—Mbs, VSA 26-17
  - atm-pcr—Pcr, VSA 26-15
  - atm-scr—Scr, VSA 26-16
  - atm-service-category—Service-Category, VSA 26-14
  - egress-policy-name—Egress-Policy-Name, VSA 26-11
  - ipv6-egress-policy-name—Ipv6-Egress-Policy-Name, VSA 26-107; when you ignore this attribute, the policy manager will not apply the policy returned from the RADIUS server to the subscriber interface; when you accept this attribute, the policy manager applies the policy returned from the RADIUS server to the subscriber interface
  - framed-ip-netmask—Framed-Ip-Netmask, attribute 9; when you ignore this attribute, the default subnet mask 255.255.255.255 is provided by AAA and used for Internet Protocol Control Protocol (IPCP) negotiations; when you enable this attribute, the router passes the IP address and the subnet mask specified by this attribute to the CPE during IPCP negotiations; ignoring the attribute guards against any breaks in the IPCP negotiation
  - ingress-policy-name—Ingress-Policy-Name, VSA 26-10
  - ipv6-ingress-policy-name—Ipv6-Ingress-Policy-Name, VSA 26-106; when you ignore this attribute, the policy manager will not apply the policy returned from the RADIUS server to the subscriber interface; when you accept this attribute, the policy manager applies the policy returned from the RADIUS server to the subscriber interface
  - virtual-router—Virtual-Router, VSA 26-1

- If you configure the default virtual router as the authentication virtual router for the domain map using the **ip-router-name** command in Domain Map Configuration Mode and the Virtual-Router RADIUS VSA attribute [26-1] is returned from the RADIUS server in the Access-Accept message, the IPv4 virtual router context returned from the RADIUS server overrides the IPv4 virtual router context configured in the AAA domain map. If you configure a nondefault virtual router as the authentication virtual router for the AAA domain map and the Virtual-Router RADIUS VSA attribute [26-1] is returned from the RADIUS server in the Access-Accept message, the IPv4 virtual router context in the AAA domain map takes precedence over the IPv4 virtual router context returned from the RADIUS server.
- **pppoe-max-session**—Max-Clients-Per-Interface, VSA 26-143
- **enable**—Specifies the feature; this is the default setting for **framed-ip-netmask** and **pppoe-max-session**
- **disable**—Disables the feature; this is the default setting for all attributes except **framed-ip-netmask** and **pppoe-max-session**

**Mode**    Global Configuration

## radius include

---

**Syntax**    radius include *attributeName*  
              { access-request | acct-on | acct-off | acct-start | acct-stop } { enable | disable }  
  
              no radius include *attributeName*  
              { access-request | acct-on | acct-off | acct-start | acct-stop }

**Release Information**    Command introduced before JunosE Release 7.1.0.  
                          **l2c-access-loop-parameters** attribute added in JunosE Release 7.2.0.  
                          **l2cd** attributes added in JunosE Release 9.0.0.  
                          **framed-interface-id** and **framed-ipv6-prefix** attributes, and acct-stop support for **framed-ip-addr** attribute added in JunosE Release 9.0.0.  
                          **downstream-calculated-qos-rate** and **upstream-calculated-qos-rate** attributes added in JunosE Release 9.1.0.  
                          **ipv6-accounting**, **delegated-ipv6-prefix**, **framed-ipv6-pool**, **framed-ipv6-route**, **ipv6-local-interface**, **ipv6-nd-ra-prefix**, **ipv6-primary-dns**, **ipv6-secondary-dns**, and **ipv6-virtual-router** attributes added in JunosE Release 10.2.0.  
                          **icr-partition-id** attribute added in JunosE Release 10.3.0.  
                          **framed-route** attribute added in JunosE Release 11.3.0.  
                          **ipv6-egress-policy-name** and **ipv6-ingress-policy-name** attributes added in JunosE Release 13.0.0.  
                          **dhcp-option82-circuitid** and **dhcp-option82-remoteid** attributes added in JunosE Release 13.1.0.  
                          **qos-profile-name**, **ds-lite-tunnel-name**, and **pcp-server-name** attributes added in JunosE Release 13.2.0.

**Description**    Configures the inclusion of RADIUS attributes in RADIUS messages. Not all attributes are available in all message types. The listed attributes are included by default except where noted. The **no** version restores the default.

**Options**    • *attributeName*—One of the following RADIUS attributes; not all attributes are available in all message types.

Attributes available for Access-Request, Acct-Start, and Acct-Stop messages:

- acct-multi-session-id—Includes RADIUS attribute 50, Acct-Multi-Session-Id
- acct-tunnel-connection—Includes RADIUS attribute 68, Acct-Tunnel-Connection
- ascend-num-in-multilink—Includes RADIUS attribute 188, Ascend-Num-In-Multilink
- called-station-id—Includes RADIUS attribute 30, Called-Station-Id
- calling-station-id—Includes RADIUS attribute 31, Calling-Station-Id
- connect-info—Includes RADIUS attribute 77, Connect-Info
- dhcp-options—Includes RADIUS attribute 26-55, DHCP-Options
- dhcp-option82—Includes RADIUS attribute 26-159, DHCP-Option 82

- `dhcp-option82-circuitid`—Includes RADIUS attribute 26-1, DHCP-Option 82
- `dhcp-option82-remoteid`—Includes RADIUS attribute 26-2, DHCP-Option 82
- `dhcp-gi-address`—Includes RADIUS attribute 26-57, DHCP-GI-Address
- `dhcp-mac-address`—Includes RADIUS attribute 26-56, DHCP-MAC Address
- `downstream-calculated-qos-rate`—Excluded by default; includes RADIUS attribute 26-141, Downstream-Calculated-Qos-Rate
- `framed-interface-id`—Excluded by default; includes RADIUS attribute 96, Framed-Interface-Id, if an IPv6 interface ID is assigned to the subscriber
- `framed-ip-addr`—Includes RADIUS attribute 8, Framed-IP-Address, if an IP address is assigned to the subscriber
- `framed-ipv6-prefix`—Excluded by default; includes RADIUS attribute 97, Framed-Ipv6-Prefix, if at least one IPv6 prefix is assigned to the subscriber
- `icr-partition-id`—Excluded by default; includes RADIUS attribute 26-150, ICR-Partition-Id, which is a user-configured value of up to 128 characters
- `interface-description`—Excluded by default; includes RADIUS attribute 26-63, Interface-Desc; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `l2c-downstream-data`—Excluded by default; includes RADIUS attribute 26-92, L2C-Down-Stream-Data
- `l2c-upstream-data`—Excluded by default; includes RADIUS attribute 26-93, L2C-Up-Stream-Data
- `l2cd-acc-loop-cir-id`—Excluded by default; includes RADIUS attribute 26-110, Acc-Loop-Cir-Id; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `l2cd-acc-aggr-cir-id-bib`—Excluded by default; includes RADIUS attribute 26-111, Acc-Aggr-Cir-Id-Bin; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `l2cd-acc-aggr-cir-id-asc`—Excluded by default; includes RADIUS attribute 26-112, Acc-Aggr-Cir-Id-Asc; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `l2cd-act-data-rate-up`—Excluded by default; includes RADIUS attribute 26-113, Act-Data-Rate-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `l2cd-act-data-rate-dn`—Excluded by default; includes RADIUS attribute 26-114, Act-Data-Rate-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages

- l2cd-min-data-rate-up—Excluded by default; includes RADIUS attribute 26-115, Min-Data-Rate-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-min-data-rate-dn—Excluded by default; includes RADIUS attribute 26-116, Min-Data-Rate-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-att-data-rate-up—Excluded by default; includes RADIUS attribute 26-117, Att-Data-Rate-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-att-data-rate-dn—Excluded by default; includes RADIUS attribute 26-118, Att-Data-Rate-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-max-data-rate-up—Excluded by default; includes RADIUS attribute 26-119, Max-Data-Rate-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-max-data-rate-dn—Excluded by default; includes RADIUS attribute 26-120, Max-Data-Rate-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-min-lp-data-rate-up—Excluded by default; includes RADIUS attribute 26-121, Min-LP-Data-Rate-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-min-lp-data-rate-dn—Excluded by default; includes RADIUS attribute 26-122, Min-LP-Data-Rate-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-max-interlv-delay-up—Excluded by default; includes RADIUS attribute 26-123, Max-Interlv-Delay-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-act-interlv-delay-up—Excluded by default; includes RADIUS attribute 26-124, Act-Interlv-Delay-Up; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-max-interlv-delay-dn—Excluded by default; includes RADIUS attribute 26-125, Max-Interlv-Delay-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-act-interlv-delay-dn—Excluded by default; includes RADIUS attribute 26-126, Act-Interlv-Delay-Dn; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- l2cd-dsl-line-state—Excluded by default; includes RADIUS attribute 26-127, DSL-Line-State; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages

- `l2cd-dsl-type`—Excluded by default; includes RADIUS attribute 26-128, DSL-Type; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `mlppp-bundle-name`—Excluded by default; includes RADIUS attribute 26-62, MLPPP-Bundle-Name; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- `nas-port`—Includes RADIUS attribute 5, NAS-Port
- `nas-port-id`—Includes RADIUS attribute 87, NAS-Port-Id



**NOTE:** For subscribers connected over the link aggregation group (LAG) interface in DHCP standalone authenticate mode, RADIUS uses the LAG interface ID for the Nas-Port-Id attribute.

- `nas-port-type`—Includes RADIUS attribute 61, NAS-Port-Type



**NOTE:** For subscribers connected over the LAG interface in DHCP standalone authenticate mode, RADIUS calculates the value of the Nas-Port-Type attribute.

- `pppoe-description`—Includes RADIUS attribute 26-24, Pppoe-Description
- `profile-service-description`—Includes RADIUS attribute 26-53, Service-Description
- `tunnel-client-auth-id`—Includes RADIUS attribute 90, Tunnel-Client-Auth-Id
- `tunnel-client-endpoint`—Includes RADIUS attribute 66, Tunnel-Client-Endpoint
- `tunnel-interface-id`—Excluded by default; includes RADIUS attribute 26-44, Tunnel-Interface-ID
- `tunnel-medium-type`—Includes RADIUS attribute 65, Tunnel-Medium-Type
- `tunnel-server-attributes`—Excluded by default; includes all supported tunnel server attributes; that is, the attributes of the tunnel client when PPP is terminated at the LNS on the router
- `tunnel-server-auth-id`—Includes RADIUS attribute 91, Tunnel-Server-Auth-Id
- `tunnel-server-endpoint`—Includes RADIUS attribute 67, Tunnel-Server-Endpoint
- `tunnel-type`—Includes RADIUS attribute 64, Tunnel-Type
- `upstream-calculated-qos-rate`—Excluded by default; includes RADIUS attribute 26-142, Upstream-Calculated-Qos-Rate

Attributes available for Access-Request messages only:

- access-loop-parameters—Excluded by default; includes RADIUS attribute 26-81, L2c-Information

Attributes available for Acct-Start and Acct-Stop messages only:

- acct-link-count—Includes RADIUS attribute 51, Acct-Link-Count
- class—Includes RADIUS attribute 25, Class
- ds-lite-tunnel-name —Excluded by default; includes RADIUS attribute 144, DS-Lite-Tunnel-Name; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- egress-policy-name—Includes RADIUS attribute 26-11, Egress-Policy-Name
- framed-compression—Includes RADIUS attribute 13, Framed-Compression
- framed-ip-netmask—Includes RADIUS attribute 9, Framed-IP-Netmask
- framed-route—Excluded by default; includes RADIUS attribute 22, Framed-Route
- ingress-policy-name—Includes RADIUS attribute 26-10, Ingress-Policy-Name
- tunnel-assignment-id—Includes RADIUS attribute 82, Tunnel-Assignment-Id
- tunnel-preference—Includes RADIUS attribute 83, Tunnel-Preference
- ipv6-ingress-policy-name—Includes RADIUS attribute 26-106, Ipv6-Ingress-Policy-Name; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- ipv6-egress-policy-name—Includes RADIUS attribute 26-107, Ipv6-Egress-Policy-Name; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- pcp-server-name—Excluded by default; includes RADIUS attribute 26-165, PCP-Server-Name; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages
- qos-profile-name—Excluded by default; includes RADIUS attribute 26-26, QoS-Profile-Name; attribute automatically included in Interim-Acct messages when included in Acct-Stop messages



**NOTE:**

- The QoS profile names configured through the SRC software and CLI are not included in the RADIUS accounting messages. Only the profile name received from the RADIUS server in the Access-Accept messages is included in the RADIUS accounting messages.
- The QoS profile name configured locally is not sent in the authentication Access-Request messages.
- The QoS profile name returned by the RADIUS server is sent in the subsequent RADIUS accounting messages even after the QoS profile name configured through RADIUS is overridden with the QoS profile name configured through the CLI; this is a limitation.

Attributes available for Acct-Stop messages only:

- **delegated-ipv6-prefix**—Excluded by default; includes RADIUS attribute 123, Delegated-Ipv6-Prefix
  - The attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages
  - When prefix delegation occurs, an immediate-update (if enabled) message, which contains the delegated prefix information, is sent to the RADIUS server
  - When the prefix to be delegated to clients is obtained from the IPv6 local address server and not the RADIUS server and the **aaa dhcpv6-delegated-prefix delegated-ipv6-prefix** command is configured, the delegated prefix is sent to the RADIUS server in this attribute in the immediate accounting, Acct-Stop, or Interim-Acct messages
  - When the prefix to be delegated to clients is allocated from the IPv6 local address server and the **aaa dhcpv6-delegated-prefix delegated-ipv6-prefix** command is not configured, the delegated prefix is sent to the RADIUS server in the Framed-Ipv6-Prefix attribute in the immediate accounting, Acct-Stop, or Interim-Acct messages
  - For static interfaces, although the prefix configured using the CLI command is used for DHCPv6 Prefix Delegation instead of the value returned by the RADIUS server, the immediate accounting, Acct-Stop, or Interim-Acct messages contain the prefix returned from the RADIUS server
  - If this attribute is not returned from the RADIUS server, the immediate accounting, Acct-Stop, or Interim-Acct messages do not report this attribute
- **framed-ipv6-pool**—Excluded by default; includes RADIUS attribute 100, Framed-IPv6-Pool; the attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages; if this attribute is configured in the AAA domain map using the CLI and is not returned from RADIUS

server, the Acct-Start, Acct-Stop, or Interim-Acct messages report the value configured in the domain map

- **framed-ipv6-route**—Excluded by default; includes RADIUS attribute 99, Framed-IPv6-Route; the attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages; when this attribute is not returned from the RADIUS server in the Access-Accept message, the immediate accounting, Acct-Stop, or Interim-Acct messages do not report this attribute
- **input-gigapkts**—Includes RADIUS attribute 26-35, Acct-Input-Gigapackets
- **input-gigawords**—Includes RADIUS attribute 52, Acct-Input-Gigawords
- **ipv6-accounting**—Excluded by default; automatically included in Interim-Acct messages when included in Acct-Stop messages; includes the following RADIUS attributes:
  - IPv6-Acct-Input-Octets [26-151]
  - IPv6-Acct-Output-Octets [26-152]
  - IPv6-Acct-Input-Packets [26-153]
  - IPv6-Acct-Output-Packets [26-154]
  - IPv6-Acct-Input-Gigawords [26-155]
  - IPv6-Acct-Output-Gigawords [26-156]
- **ipv6-local-interface**—Excluded by default; includes RADIUS attribute 26-46, Ipv6-Local-Interface; the attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages; if IPv6 local interface is configured in the AAA domain map and is not returned from the RADIUS server, the Acct-Start, Acct-Stop, or Interim-Acct messages report the value configured in the domain map
- **ipv6-nd-ra-prefix**—Excluded by default; includes RADIUS attribute 26-129, Ipv6-NdRa-Prefix; the attribute value received from the RADIUS server in the Access-Accept message is included in the accounting messages; for dynamic interfaces, if the Ipv6-NdRa-Prefix attribute is configured in the profile and is not returned from RADIUS server, this attribute is not included in the Acct-Start, Acct-Stop, and Interim-Acct messages



**NOTE:** When you attempt to configure the Ipv6-NdRa-Prefix attribute using the dynamic configuration manager (DCM) profile, the prefix is not successfully configured and the subscriber does not come up. In this scenario, the RADIUS server rejects the authentication request from the subscriber and records an error message stating that address allocation failed. However, if you attempt to configure the Ipv6-NdRa-Prefix attribute using the RADIUS profile, the prefix is correctly configured and the subscriber comes up successfully. This behavior is expected when the DCM profile is used to configure the Ipv6-NdRa-Prefix attribute.

This scenario occurs when router advertisements are enabled in the DCM profile and the RADIUS server returns only the Framed-Interface-Id attribute. Because the AAA server requires one of the following attributes to authenticate IPv6 subscribers, and none of these attributes are returned from the RADIUS server, the logging in of subscribers fails:

- Ipv6-NdRa-Prefix (VSA 26-129)
  - Framed-IPv6-Prefix (RADIUS IETF attribute 97)
  - Framed-IPv6-Route (RADIUS IETF attribute 99)
  - Framed-IPv6-Pool (RADIUS IETF attribute 100)
  - Delegated-IPv6-Prefix (RADIUS IETF attribute 123)
- 
- ipv6-primary-dns—Excluded by default; includes RADIUS attribute 26-47, Ipv6-Primary-DNS; the attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages; if the IPv6 primary DNS server is configured in the AAA domain map and is not returned from the RADIUS server, the Acct-Start, Acct-Stop, or Interim-Acct messages report the value configured in the AAA domain map
  - ipv6-secondary-dns—Excluded by default; includes RADIUS attribute 26-48, Ipv6-Secondary-DNS; the attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages; if the IPv6 secondary DNS server is configured in the AAA domain map and is not returned from the RADIUS server, the Acct-Start, Acct-Stop, or Interim-Acct messages report the value configured in the AAA domain map
  - ipv6-virtual-router—Excluded by default; includes RADIUS attribute 26-45, Ipv6-Virtual-Router
    - The attribute value received from the RADIUS server in the Access-Accept message is used in the accounting messages
    - If the IPv6 virtual router is configured in the AAA domain map and is not returned from the RADIUS server, the Acct-Start, Acct-Stop, or Interim-Acct messages report the value configured in the domain map

- If IPv6 virtual router is not configured in the AAA domain map and is not returned from the RADIUS server, it is not included in the Acct-Start message because the value is not yet known
  - If the IPv6 virtual router context is configured from the profile, it is reported in the immediate-update message for DHCPv6 prefix delegation
  - If you configure the default virtual router as the authentication virtual router for the domain map using the **ipv6-router-name** command in Domain Map Configuration Mode and the IPv6-Virtual-Router RADIUS VSA attribute [26-45] is returned from the RADIUS server in the Access-Accept message, the IPv6 virtual router context returned from the RADIUS server overrides the IPv6 virtual router context configured in the AAA domain map. If you configure a nondefault virtual router as the authentication virtual router for the AAA domain map and the IPv6-Virtual-Router RADIUS VSA attribute [26-45] is returned from the RADIUS server in the Access-Accept message, the IPv6 virtual router context in the AAA domain map takes precedence over the IPv6 virtual router context returned from the RADIUS server.
- l2tp-ppp-disconnect-cause—Includes RADIUS attribute 26-51, Disconnect-Cause
  - output-gigapkts—Includes RADIUS attribute 26-36, Acct-Output-Gigapackets
  - output-gigawords—Includes RADIUS attribute 53, Acct-Output-Gigawords

Attributes available for Access-Request, Acct-Start, Acct-Stop, Acct-On, and Acct-Off messages:

- nas-identifier—Includes RADIUS attribute 32, NAS-Identifier

Attributes available for Access-Request, Acct-On, and Acct-Off messages:

- acct-session-id—Includes RADIUS attribute 44, Acct-Session-Id; can be optionally included in the change-of-authorization (CoA) message from the RADIUS server or in the user login request if the packet mirroring operation is required; the Acct-Session-Id VSA is used:
  - In the RADIUS-initiated CoA message to start the mirroring session when the user is already logged in
  - As a trigger in user-initiated mirroring to identify the user whose traffic is to be mirrored

Attributes available for Acct-Start, Acct-Stop, Acct-On, and Acct-Off messages:

- event-timestamp—Includes RADIUS attribute 55, Event-Timestamp

Attributes available for Acct-On and Acct-Off messages only:

- acct-authentic—Includes RADIUS attribute 45, Acct-Authentic
- acct-delay-time—Includes RADIUS attribute 41, Acct-Delay-Time

Attributes available for Acct-Off messages only:

- `acct-terminate-cause`—Includes RADIUS attribute 49, Acct-Terminate-Cause
- `access-request`—Specifies RADIUS Access-Request messages
- `acct-on`—Specifies RADIUS Acct-On messages
- `acct-off`—Specifies RADIUS Acct-Off messages
- `acct-start`—Specifies RADIUS Acct-Start messages
- `acct-stop`—Specifies RADIUS Acct-Stop messages
- `enable`—Enables attribute inclusion
- `disable`—Disables attribute inclusion; the attribute is excluded

**Mode**    Global Configuration

## radius nas-port-format

---

**Syntax** radius nas-port-format { 0ssssppp | ssss0ppp }

no radius nas-port-format

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Configures the RADIUS client's use of a specific format for RADIUS attribute 5, NAS-Port. The NAS-Port format attribute is set only for ATM and Ethernet interfaces. The format is a 4-octet integer in which only the bits representing slot and port are changed. The remaining bits are not changed (8 bits VPI and 16 bits VCI; or 12 bits S-VLAN and 12 bits VLAN). The **no** version removes the format.



**NOTE:** For subscribers connected over the link aggregation group (LAG) interface in DHCP standalone authenticate mode, RADIUS derives a unique value from the subscriber's profileHandle and uses the value for the Nas-Port attribute. You cannot use this command to change the value of the Nas-Port attribute.

- Options**
- 0ssssppp—Sets the RADIUS client to use the 0ssssppp format where *s* is slot and *p* is port
  - ssss0ppp—Sets the RADIUS client to use the ssss0ppp format where *s* is slot and *p* is port

**Mode** Global Configuration

## radius nas-port-format extended

**Syntax** For ATM interfaces:

```
radius nas-port-format extended atm [ field-widths [ slot slotWidth ]
[ adapter adapterWidth ] [ port portWidth ] [ vpi vpiWidth ] [ vci vciWidth ] ]
```

```
no radius nas-port-format extended atm
```

For Gigabit and 10-Gigabit Ethernet interfaces:

```
radius nas-port-format extended ethernet [ field-widths [ slot slotWidth ]
[ adapter adapterWidth ] [ port portWidth ] [ svlan svlanWidth ] [ vlan vlanWidth ] ]
```

```
no radius nas-port-format extended ethernet
```

**Release Information** Command introduced in JunosE Release 7.1.0.

**Description** Configures the RADIUS client's use of an extended format for RADIUS attribute 5, NAS-Port, on ATM, Gigabit Ethernet, and 10-Gigabit Ethernet interfaces on the E120 router and the E320 router. If you do not set the extended format for E120 or E320 routers, the RADIUS client uses the default format set through the **radius nas-port-format** command, which 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* ] on E120 and E320 routers. 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. The **no** version removes the format.



### 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.
- If you do not specify a value for a field, the number of bits is set to 0. 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.

- Options**
- **field-widths**—Configures the width of the fields in the NAS-Port attribute
  - *slotWidth*—Number of bits for the slot field; default value is 5
  - *adapterWidth*—Number of bits for the adapter field; default value is 0
  - *portWidth*—Number of bits for the port field; default value is 3
  - *vpiWidth*—Number of bits for the VPI subinterface field on ATM interfaces; default value is 8

- *vciWidth*—Number of bits for the VCI subinterface field on ATM interfaces; default value is 16
- *svlanWidth*—Number of bits for the S-VLAN subinterface field on Gigabit Ethernet and 10-Gigabit Ethernet interfaces; default value is 12



.....

**NOTE:** You must include S-VLAN IDs in the NAS-Port attribute by issuing the **radius vlan nas-port-format stacked** command for setting valid S-VLAN widths.

.....

- *vlanWidth*—Number of bits for the VLAN subinterface field on Gigabit Ethernet and 10-Gigabit Ethernet interfaces; default value is 12

**Mode**    Global Configuration



## radius pppoe nas-port-format unique

---

**Syntax** [ no ] radius pppoe nas-port-format unique

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Allows the E Series RADIUS client to use a unique value for the NAS-Port attribute for subscribers on PPPoE interfaces. The router derives the unique value from the subscriber's profileHandle. The **no** version restores the default value, determined by the interface.



.....

**NOTE:** For subscribers connected over the link aggregation group (LAG) interface in DHCP standalone authenticate mode, RADIUS derives a unique value from the subscriber's profileHandle and uses the value for the Nas-Port attribute. You cannot use this command to change the value of the Nas-Port attribute.

.....

**Mode** Global Configuration

## radius calling-station-delimiter

---

**Syntax**    radius calling-station-delimiter *delimiter*  
              no radius calling-station-delimiter

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Specifies the delimiter for DSL PPP users for RADIUS attribute 31, Calling-Station-Id. The **no** version removes the delimiter.

**Options**    • *delimiter*—Special character to set off items in the Calling-Station-Id's definition (for example, # or %)

**Mode**    Global Configuration

## radius calling-station-format

**Syntax** radius calling-station-format { delimited | fixed-format [ stacked ] |  
fixed-format-adapter-embedded [ stacked ] | fixed-format-adapter-new-field [ stacked  
] }  
  
no radius calling-station-format

**Release Information** Command introduced before JunosE Release 7.1.0.  
**fixed-format-adapter-embedded** and **fixed-format-adapter-new-field** keywords added in JunosE Release 8.1.0.  
**stacked** keyword added in JunosE Release 9.3.0.

**Description** On a virtual router, specifies the format of RADIUS attribute 31, Calling-Station-Id, when the PPP user is terminated at the non-LNS E Series router. Depending on the keyword you use, the virtual router uses the specified format for each interface type, replacing variables in the format with their actual values for your configuration. The **no** version restores the default Calling-Station-Id format, **delimited**.



### NOTE:

- 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.
- For subscribers connected over the LAG interface in DHCP standalone authenticate mode, the **radius override calling-station-id remote-circuit-id** command enables RADIUS to use the PPPoE remote circuit ID for the Calling-Station-Id attribute. By default, RADIUS uses a delimited format for the interface description. You cannot use this command to change the value of the Calling-Station-Id attribute.

- Options**
- **delimited**—Specifies that the RADIUS client uses the delimited format:
    - Format for ATM interfaces:  
*delimiter systemName delimiter interfaceDescription delimiter  
VPI delimiter VCI delimiter*
    - Format for Ethernet interfaces:  
*delimiter systemName delimiter interfaceDescription delimiter VLAN*

Where *interfaceDescription* 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
- *fixed-format*—Specifies that the RADIUS client uses a fixed format of up to 15 characters consisting of all ASCII fields:
  - Format for ATM interfaces:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *port* (1 byte) *VPI* (3 bytes) *VCI* (5 bytes)
  - Format for Ethernet interfaces:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *port* (1 byte) *VLAN* (8 bytes)
  - Format for serial interfaces:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *port* (1 byte) *O* (8 bytes)
- In the case of PPP terminated from LNS, the Calling-Station-Id attribute value is based on the received L2TP calling number AVP
- *fixed-format-adapter-embedded*—Specifies that the RADIUS client uses 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:
  - Format for ATM interfaces:  
*systemName* (up to 4 bytes) *slot* (1 byte) *adapter* (1 byte) *port* (1 byte) *VPI* (3 bytes) *VCI* (5 bytes)
  - Format for Ethernet interfaces:  
*systemName* (up to 4 bytes) *slot* (1 byte) *adapter* (1 byte) *port* (1 byte) *VLAN* (8 bytes)
  - Format for serial interfaces:  
*systemName* (up to 4 bytes) *slot* (1 byte) *adapter* (1 byte) *port* (1 byte) *O* (8 bytes)
- For E120 routers 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 and 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 ERX7xx models, ERX14xx models, and ERX310 routers, *adapter* is always shown as 0.
- 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

Slot Number	ASCII Character	Slot Number	ASCII Character
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.

- **fixed-format-adapter-new-field**—Specifies that the RADIUS client uses 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:
  - Format for ATM interfaces:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *adapter* (1 byte) *port* (2 bytes)  
*VPI* (3 bytes) *VCI* (5 bytes)
  - Format for Ethernet interfaces:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *adapter* (1 byte) *port* (2 bytes) *VLAN* (8 bytes)
  - Format for serial interfaces:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *adapter* (1 byte) *port* (2 bytes)  
*O* (8 bytes)
  - For E120 routers and E320 routers, *adapter* is the number of the bay in which the IOA resides, either 0 or 1. For ERX7xx models, ERX14xx models, and ERX310 routers, *adapter* is always shown as 0.
  - Slot numbers 0 through 16 are shown as integers in the 2-byte *slot* field.



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

- **stacked**—Includes a 4-byte stacked VLAN (S-VLAN ID) for Ethernet interfaces when the RADIUS client uses the fixed-format, fixed-format-adapter-embedded, or fixed-format-adapter-new-field format; by default, these formats do not include the S-VLAN ID unless you specify the optional **stacked** keyword; if you include the stacked keyword, the S-VLAN ID is displayed in decimal format in the range 0–4095

- Format for Ethernet interfaces that use **fixed-format**:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *port* (1 byte) *S-VLAN* (4 bytes) *VLAN* (4 bytes)
- Format for Ethernet interfaces that use **fixed-format-adapter-embedded**:  
*systemName* (up to 4 bytes) *slot* (1 byte) *adapter* (1 byte) *port* (1 byte) *S-VLAN* (4 bytes) *VLAN* (4 bytes)
- Format for Ethernet interfaces that use **fixed-format-adapter-new-field**:  
*systemName* (up to 4 bytes) *slot* (2 bytes) *adapter* (1 byte) *port* (2 bytes) *S-VLAN* (4 bytes) *VLAN* (4 bytes)



---

**NOTE:**

- The use of the **stacked** keyword is not supported for VLAN subinterfaces based on agent-circuit-identifier information, otherwise known as ACI VLANs. When you issue the **radius calling-station-format fixed-format stacked**, **radius calling-station-format fixed-format-adapter-embedded stacked**, or **radius calling-station-format fixed-format-adapter-new-field stacked** command for an ACI VLAN, the values that appear in the 4-byte S-VLAN ID and 4-byte VLAN ID fields are incorrect.
  - The S-VLAN ID field in the Calling-Station-Id [31] attribute is set to 0 (zero) under the following conditions:
    - You do not specify the optional **stacked** keyword.
    - You specify the optional **stacked** keyword but the Ethernet interface does not have an S-VLAN ID.
- 

**Mode**    Global Configuration

## radius include dsl-forum-attributes

**Syntax** radius include dsl-forum-attributes  
 { access-request | acct-start | acct-stop } { enable | disable }  
 no radius include dsl-forum-attributes { access-request | acct-start | acct-stop }

**Release Information** Command introduced in JunosE Release 7.3.0.

**Description** Enables the inclusion of a set of DSL Forum vendor-specific attributes (VSAs) in Access-Request, Acct-Start, or Acct-Stop messages that the router sends to RADIUS. If you specify the Acct-Stop message, the router also includes the DSL Forum VSAs in outgoing RADIUS Interim-Acct messages. The **no** version restores the default behavior, which excludes the DSL Forum VSAs from these outgoing RADIUS messages.

If you enable the inclusion of DSL Forum VSAs in RADIUS messages, the router includes all of the following DSL Forum VSAs in the specified message type, provided that the VSA is available in the information that the router receives from the DSLAM.

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]

- Options**
- access-request—Specifies RADIUS Access-Request messages
  - acct-start—Specifies RADIUS Acct-Start messages
  - acct-stop—Specifies RADIUS Acct-Stop messages and Interim-Acct messages
  - enable—Causes the router to include the DSL Forum VSAs, if available, in the specified outgoing RADIUS message
  - disable—Causes the router to exclude the DSL Forum VSAs from the specified outgoing RADIUS message; this is the default behavior

**Mode** Global Configuration



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

---

**Syntax** radius override calling-station-id remote-circuit-id  
no radius override calling-station-id

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Configures RADIUS to override the standard use of the Calling-Station-Id [31] RADIUS attribute and instead use the PPPoE remote circuit ID transmitted from a DSLAM device. The **no** version restores the default Calling-Station-Id value, which is the telephone number from which the call originated.

**Mode** Global Configuration

## radius override nas-info

---

**Syntax** [ no ] radius override nas-info

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Configures the RADIUS client for a virtual router context to override the standard use of the NAS-IP-Address [4] and NAS-Identifier [32] attributes when the client performs AAA broadcast accounting. Normally, AAA accounting packets include the NAS-IP-Address and NAS-Identifier attributes of the virtual router that generates the accounting information. However, this command specifies that the broadcast accounting packets instead include the authenticating virtual router's NAS-IP-Address and NAS-Identifier attributes. The **no** version restores the standard use of the two attributes in AAA accounting information.

**Mode** Global Configuration

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

---

**Syntax**    radius override nas-ip-addr tunnel-client-endpoint  
              no radius override nas-ip-addr

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Configures the RADIUS client (LNS) to override the standard use of the NAS-IP-Address [4] RADIUS attribute and instead use the tunnel-client-endpoint (LAC) IP address. The **no** version restores the default address.

**Mode**    Global Configuration

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

---

**Syntax**    radius override nas-port-id remote-circuit-id  
              no radius override nas-port-id

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Configures RADIUS to override the standard use of the NAS-Port-Id [87] RADIUS attribute and instead use the PPPoE remote circuit ID transmitted from a DSLAM device. The **no** version restores the default NAS-Port-Id value, which is the physical interface of the network access server (NAS) that is authenticating the user.



.....  
**NOTE:** For subscribers connected over the link aggregation group (LAG) interface in DHCP standalone authenticate mode, RADIUS uses the LAG interface ID for the Nas-Port-Id attribute.  
.....

**Mode**    Global Configuration

## radius remote-circuit-id-format

**Syntax** radius remote-circuit-id-format { [ nas-identifier ] { agent-circuit-id | agent-remote-id | agent-circuit-id agent-remote-id } | dsl-forum-1 }

no radius remote-circuit-id format

**Release Information** Command introduced before JunosE Release 7.1.0.  
**dsl-forum-1** keyword added in JunosE Release 7.2.0.

**Description** Specifies the format of the PPPoE remote circuit ID value sent from a DSLAM and captured on the router. 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, with or without the NAS-Identifier [32] RADIUS attribute. The **no** version restores the default format, agent-circuit-id.

- Options**
- **nas-identifier**—Formats the PPPoE remote circuit ID value to include the NAS-Identifier [32] RADIUS attribute with either or both of the agent-circuit-id and agent-remote-id suboptions. If you include the **nas-identifier** keyword, you must also include either or both of the **agent-circuit-id** and **agent-remote-id** keywords.
  - **agent-circuit-id**—Formats the PPPoE remote circuit ID value to include only the agent-circuit-id suboption; this is the default format
  - **agent-remote-id**—Formats the PPPoE remote circuit ID value to include only the agent-remote-id suboption
  - **agent-circuit-id agent-remote-id**—Formats the PPPoE remote circuit ID value to include both the agent-circuit-id and agent-remote-id suboptions
  - **dsl-forum-1**—Formats the PPPoE remote circuit ID value to 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).

**Mode** Global Configuration

## radius remote-circuit-id-delimiter

---

**Syntax** radius remote-circuit-id-delimiter *delimiter*  
no radius remote-circuit-id-delimiter

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Specifies the delimiter character that sets off components in the PPPoE remote circuit ID value sent from a DSLAM and captured on the router. The **no** version restores the default delimiter character, #.

**Options**

- *delimiter*—Special character (for example, ! or %) to set off components in the PPPoE remote circuit ID value captured from a DSLAM; the default delimiter character is #

**Mode** Global Configuration

## radius rollover-on-reject

---

**Syntax**    radius rollover-on-reject { enable | disable }  
              no radius rollover-on-reject

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    On a virtual router, specifies whether the router should roll over to the next RADIUS server when the router receives an access-reject message for the user it is authenticating. The **no** version restores the default value, disable.

**Options**    • enable—Specifies the feature  
              • disable—Disables the feature; this is the default setting

**Mode**    Global Configuration

## radius tunnel-accounting

---

**Syntax** radius tunnel-accounting { enable | disable }  
no radius tunnel-accounting

**Release Information** Command introduced before JunosE Release 7.1.0.

**Description** Enables or disables tunnel accounting. The **no** version restores the default value, disable.

**Options**

- enable—Specifies the feature
- disable—Disables the feature; this is the default setting

**Mode** Global Configuration



## radius udp-checksum

---

**Syntax**    radius udp-checksum { enable | disable }  
              no radius udp-checksum

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Enables or disables UDP checksum for RADIUS packets on virtual routers that you configure for B-RAS. The **no** version restores the default value, enable.

**Options**    • enable—Specifies the feature; this is the default setting  
              • disable—Disables the feature

**Mode**    Global Configuration



# Examples

- [Example: Configuring RADIUS-Specific Attributes on page 143](#)

## Example: Configuring RADIUS-Specific Attributes

---

In this example, RADIUS-specific attributes are configured for subscribers attached to a specific PPP profile. You can configure this as follows:

1. Create a RADIUS per-profile attribute list, and configure the required RADIUS attributes in the list.

```
host1(config)#radius per-profile-attr-list abc
host1 (config-perprofile-list)#request-type acct-start
host1 (config-perprofile-list)#action-type enable
host1 (config-perprofile-list)#attributes calling-station-id override-nas-ip-addr
```

2. Create an AAA profile.

```
host1(config)#aaa profile aaaprofile1
```

3. Specify the RADIUS attribute list in the AAA profile.

```
host1(config-aaa-profile)#radius-perprofilelist-name abc
```

4. Create a PPP profile.

```
host1(config)#profile pppprofile1
```

5. Attach the AAA profile name to the PPP profile.

```
host1(config-profile)#ppp aaa-profile aaaprofile1
```

6. To view the attributes configured in the RADIUS per-profile attribute list, issue the **show radius per-profile-attr-list** command.

```
host1#show radius per-profile-attr-list abc
```

Attribute Name	AccessRequest	AccountStart	AccountStop
calling-station-id	enabled	disabled	enabled
override-nas-ip-addr	enabled	enabled	enabled

### Related Documentation

- [RADIUS Per-Profile Attribute List Configuration Overview](#)
- [aaa profile](#)
- [action-type](#)

- attributes (RADIUS)
- ppp aaa-profile
- profile
- radius per-profile-attr-list
- radius-perprofilelist-name
- request-type
- show radius per-profile-attr-list

## PART 3

# Administration

- [Monitoring the RADIUS Attribute Settings on page 147](#)
- [Verifying RADIUS Attributes Used in Access and Accounting Messages on page 153](#)
- [Monitoring RADIUS Servers and Services for AAA Features on page 157](#)
- [Monitoring Commands on page 167](#)



# Monitoring the RADIUS Attribute Settings

- [Monitoring Override Settings of RADIUS IETF Attributes on page 147](#)
- [Monitoring the NAS-Port-Format RADIUS Attribute on page 148](#)
- [Monitoring the Calling-Station-Id RADIUS Attribute on page 149](#)
- [Monitoring the NAS-Identifier RADIUS Attribute on page 149](#)
- [Monitoring the Format of the Remote-Circuit-ID for RADIUS on page 149](#)
- [Monitoring the Delimiter Character in the Remote-Circuit-ID for RADIUS on page 150](#)
- [Monitoring the Acct-Session-Id RADIUS Attribute on page 150](#)
- [Monitoring the DSL-Port-Type RADIUS Attribute on page 150](#)
- [Monitoring the Connect-Info RADIUS Attribute on page 151](#)
- [Monitoring the NAS-Port-ID RADIUS Attribute on page 151](#)

## Monitoring Override Settings of RADIUS IETF Attributes

---

- Purpose** Display the current override setting for RADIUS IETF attributes. You can monitor the NAS-IP-Address [4], NAS-Port-Id [87], Calling-Station-Id [31], and NAS-Identifier [32] attributes.
- Action** To display the current setting for all configured RADIUS attributes:
- ```
host1#show radius override
nas-ip-addr:      nas-ip-addr
nas-port-id:      nas-port-id
calling-station-id: calling-station-id
nas-info:         from current virtual router

host1#show radius override
nas-ip-addr: nas-ip-addr
nas-info:    from authentication virtual router
```
- Meaning** [Table 23 on page 148](#) lists the **show radius override** command output fields.

Table 23: show radius override Output Fields

| Field Name         | Field Description                                                                                                                                                                                                                                                      |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nas-ip-addr        | Displays the current setting for the NAS-IP-Address [4] attribute. These settings can be changed with the <b>radius override nas-ip-addr tunnel-client-endpoint</b> and <b>radius override nas-info</b> commands.                                                      |
| nas-port-id        | Displays the current setting for the NAS-Port-Id [87] attribute. Use the <b>radius override nas-port-id remote-circuit-id</b> command to override the standard NAS-Port-Id attribute with the PPPoE remote circuit ID transmitted from the DSLAM.                      |
| calling-station-id | Displays the current setting for the Calling-Station-Id [31] attribute. Use the <b>radius override calling-station-id remote-circuit-id</b> command to override the standard Calling-Station-Id attribute with the PPPoE remote circuit ID transmitted from the DSLAM. |
| nas-info           | Displays the current setting for the NAS-Identifier [32] attribute. This setting can be changed with the <b>radius override nas-info</b> command, which is used for AAA broadcast accounting.                                                                          |

Related Documentation • [show radius override on page 169](#)

## Monitoring the NAS-Port-Format RADIUS Attribute

**Purpose** Display information for the NAS-Port attribute.

**Action** To display the setting for the NAS-Port attribute:

```
host1#show radius nas-port-format
0ssssppp
```

To display information about the NAS-Port attribute on an ATM interface on an E320 Broadband Services Router:

```
host1#show radius nas-port-format extended atm
extended atm field-width slot 5 adapter 0 port 4 vpi 4 vci 12
```

To display the status of NAS-Port attribute settings for PPPoE interfaces:

```
host1#show radius pppoe nas-port-format
unique
```

To display the status of the S-VLAN ID setting for the NAS-Port attribute for VLAN interfaces:

```
host1#show radius vlan nas-port-format
vlan stacked
```



- Related Documentation**
- show radius nas-port-format
  - show radius nas-port-format extended
  - show radius pppoe nas-port-format
  - show radius vlan nas-port-format

## Monitoring the Calling-Station-Id RADIUS Attribute

- Purpose** Display the format and delimiter used for the Calling-Station-Id [31] attribute.
- Action** To display the format configured for the Calling-Station-Id [31] attribute:
- ```
host1#show radius calling-station-format
fixed-format-adapter-new-field (includes SVLAN ID)
```
- To display the delimiter used in the Calling-Station-Id for authenticated ATM PPP users:
- ```
host1#show radius calling-station-delimiter
&
```
- Related Documentation**
- show radius calling-station-format
  - show radius calling-station-delimiter

## Monitoring the NAS-Identifier RADIUS Attribute

- Purpose** Display information about the NAS-Identifier value.
- Action** To display information about the NAS-Identifier value:
- ```
host1#show radius nas-identifier
fox
```
- Related Documentation**
- show radius nas-identifier

## Monitoring the Format of the Remote-Circuit-ID for RADIUS

- Purpose** Display the format configured for the PPPoE remote circuit ID value captured from a DSLAM.
- The default format is agent-circuit-ID. If the PPPoE remote circuit ID value is configured to include any or all of the agent-circuit-id, agent-remote-id, and nas-identifier components, the display lists the components included and the order in which they appear.
- If the PPPoE remote circuit ID value is configured to use the format for the **dsl-forum-1** keyword of **radius remote-circuit-id-format**, the display indicates that this format is in effect.

**Action** To display the format configured for the PPPoE remote circuit ID value captured from a DSLAM:

```
host1#show radius remote-circuit-id-format
nas-identifier agent-circuit-id agent-remote-id
```

**Related Documentation**

- show radius remote-circuit-id-format

---

## Monitoring the Delimiter Character in the Remote-Circuit-ID for RADIUS

**Purpose** Display the delimiter character configured to set off components in the PPPoE remote circuit ID value captured from a DSLAM. The default delimiter character is #.

**Action** To display the delimiter character:

```
host1#show radius remote-circuit-id-delimiter
!
```

**Related Documentation**

- show radius remote-circuit-id-delimiter

---

## Monitoring the Acct-Session-Id RADIUS Attribute

**Purpose** Display the format used for the Acct-Session-Id attribute.

**Action** To display the format used for the Acct-Session-Id attribute:

```
host1#show radius acct-session-id-format
decimal
```

**Related Documentation**

- show radius acct-session-id-format

---

## Monitoring the DSL-Port-Type RADIUS Attribute

**Purpose** Display the DSL port type for NAS-Port-Type attribute for ATM and Ethernet users.

**Action** To display the DSL port type for NAS-Port-Type attribute for ATM users:

```
host1#show radius dsl-port-type
xds1
```

To display the NAS-Port-Type attribute for Ethernet interfaces:

```
host1#show radius ethernet-port-type
virtual
```

**Related Documentation**

- show radius dsl-port-type
- show radius ethernet-port-type

## Monitoring the Connect-Info RADIUS Attribute

---

**Purpose** Display the format for the Connect-Info attribute.

**Action** To display the format for the Connect-Info attribute:

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

**Related Documentation**

- [show radius connect-info-format](#)

## Monitoring the NAS-Port-ID RADIUS Attribute

---

**Purpose** Display whether the router includes or excludes the subinterface number or adapter in the interface description that the router passes to RADIUS for inclusion in the NAS-Port-Id attribute.

**Action** To display information about the interface description for the NAS-Port-ID:

```
host1#show aaa intf-desc-format  
exclude sub-interface  
include adapter
```

**Related Documentation**

- [show aaa intf-desc-format](#)



## CHAPTER 15

# Verifying RADIUS Attributes Used in Access and Accounting Messages

- [Monitoring Included RADIUS Attributes on page 153](#)
- [Monitoring Ignored RADIUS Attributes on page 155](#)
- [Monitoring the Status of ICR Partition Accounting on page 156](#)

## Monitoring Included RADIUS Attributes

**Purpose** Display the RADIUS attributes that are included in and excluded from Acct-On, Acct-Off, Access-Request, Acct-Start, and Acct-Stop messages.

**Action** To display the list of included RADIUS attributes:

host1# show radius attributes-included

Attribute Name	Account On	Account Off	Access Request	Account Start	Account Stop
access-loop-parameters	n/c	n/c	disabled	n/c	n/c
acct-authentic	enabled	enabled	n/c	n/c	n/c
acct-delay-time	enabled	enabled	n/c	n/c	n/c
acct-link-count	n/c	n/c	n/c	enabled	enabled
acct-multi-session-id	n/c	n/c	disabled	enabled	enabled
acct-session-id	enabled	enabled	enabled	n/c	n/c
acct-terminate-cause	n/c	enabled	n/c	n/c	n/c
acct-tunnel-connection	n/c	n/c	enabled	enabled	enabled
ascend-num-in-multilink	n/c	n/c	disabled	disabled	disabled
called-station-id	n/c	n/c	enabled	enabled	enabled
downstream-calculated-qos-rate	n/c	n/c	disabled	disabled	disabled
upstream-calculated-qos-rate	n/c	n/c	disabled	disabled	disabled
calling-station-id	n/c	n/c	enabled	enabled	enabled
class	n/c	n/c	n/c	enabled	enabled
connect-info	n/c	n/c	enabled	enabled	enabled
delegated-ipv6-prefix	n/c	n/c	n/c	disabled	disabled
dhcp-options	n/c	n/c	disabled	disabled	disabled
dhcp-option-82	n/c	n/c	disabled	disabled	disabled
dhcp-option82-circuitid	n/c	n/c	enabled	disabled	disabled
dhcp-option82-remoteid	n/c	n/c	enabled	disabled	disabled
dhcp-mac-address	n/c	n/c	disabled	disabled	disabled
dhcp-gi-address	n/c	n/c	disabled	disabled	disabled
dsl-forum-attributes(vsa)	n/c	n/c	disabled	disabled	disabled
ds-lite-tunnel-name	n/c	n/c	n/c	disabled	disabled
egress-policy-name(vsa)	n/c	n/c	n/c	enabled	enabled
ipv6-egress-policy-name(vsa)	n/c	n/c	n/c	enabled	enabled

event-timestamp	enabled	enabled	n/c	enabled	enabled
framed-compression	n/c	n/c	n/c	enabled	enabled
framed-interface-id	n/c	n/c	n/c	disabled	disabled
framed-ip-address	n/c	n/c	n/c	enabled	enabled
framed-ip-netmask	n/c	n/c	n/c	enabled	enabled
framed-ipv6-pool	n/c	n/c	n/c	disabled	disabled
framed-ipv6-prefix	n/c	n/c	n/c	disabled	disabled
framed-ipv6-route	n/c	n/c	n/c	disabled	disabled
framed-route	n/c	n/c	n/c	disabled	disabled
icr-partition-id(vsa)	n/c	n/c	disabled	disabled	disabled
ingress-policy-name(vsa)	n/c	n/c	n/c	enabled	enabled
ipv6-ingress-policy-name(vsa)	n/c	n/c	n/c	enabled	enabled
input-gigapkts(vsa)	n/c	n/c	n/c	n/c	enabled
input-gigawords	n/c	n/c	n/c	n/c	enabled
interface-description(vsa)	n/c	n/c	enabled	enabled	enabled
ipv6-input-octets(vsa)	n/c	n/c	n/c	n/c	enabled
ipv6-output-octets(vsa)	n/c	n/c	n/c	n/c	enabled
ipv6-input-packets(vsa)	n/c	n/c	n/c	n/c	enabled
ipv6-output-packets(vsa)	n/c	n/c	n/c	n/c	enabled
ipv6-input-gigawords(vsa)	n/c	n/c	n/c	n/c	enabled
ipv6-output-gigawords(vsa)	n/c	n/c	n/c	n/c	enabled
ipv6-local-interface(vsa)	n/c	n/c	n/c	disabled	disabled
ipv6-nd-ra-prefix(vsa)	n/c	n/c	n/c	disabled	disabled
ipv6-primary-dns(vsa)	n/c	n/c	n/c	disabled	disabled
ipv6-secondary-dns(vsa)	n/c	n/c	n/c	disabled	disabled
ipv6-virtual-router(vsa)	n/c	n/c	n/c	disabled	disabled
l2c-downstream-data(vsa)	n/c	n/c	disabled	disabled	disabled
l2c-upstream-data(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-acc-loop-cir-id(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-acc-aggr-cir-id-bin(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-acc-aggr-cir-id-asc(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-act-data-rate-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-act-data-rate-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-min-data-rate-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-min-data-rate-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-att-data-rate-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-att-data-rate-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-max-data-rate-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-max-data-rate-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-min-lp-data-rate-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-min-lp-data-rate-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-max-interlv-delay-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-act-interlv-delay-up(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-max-interlv-delay-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-act-interlv-delay-dn(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-dsl-line-state(vsa)	n/c	n/c	disabled	disabled	disabled
l2cd-dsl-type(vsa)	n/c	n/c	disabled	disabled	disabled
l2tp-ppp-disconnect-cause	n/c	n/c	n/c	n/c	disabled
mlppp-bundle-name	n/c	n/c	enabled	enabled	enabled
nas-identifier	enabled	enabled	enabled	enabled	enabled
nas-port	n/c	n/c	enabled	enabled	enabled
nas-port-id	n/c	n/c	enabled	enabled	enabled
nas-port-type	n/c	n/c	enabled	enabled	enabled
output-gigapkts(vsa)	n/c	n/c	n/c	n/c	enabled
output-gigawords	n/c	n/c	n/c	n/c	enabled
pcp-server-name(vsa)	n/c	n/c	n/c	disabled	disabled
pppoe-description(vsa)	n/c	n/c	enabled	enabled	enabled
profile-service-descr(vsa)	n/c	n/c	disabled	disabled	disabled
qos-profile-name (vsa)	n/c	n/c	n/c	disabled	disabled
tunnel-assignment-id	n/c	n/c	n/c	enabled	enabled
tunnel-client-auth-id	n/c	n/c	enabled	enabled	enabled

tunnel-client-endpoint	n/c	n/c	enabled	enabled	enabled
tunnel-interface-id	n/c	n/c	disabled	disabled	disabled
tunnel-medium-type	n/c	n/c	enabled	enabled	enabled
tunnel-preference	n/c	n/c	n/c	enabled	enabled
tunnel-server-attributes	n/c	n/c	disabled	disabled	disabled
tunnel-server-auth-id	n/c	n/c	enabled	enabled	enabled
tunnel-server-endpoint	n/c	n/c	enabled	enabled	enabled
tunnel-type	n/c	n/c	enabled	enabled	enabled

**Meaning** [Table 24 on page 155](#) lists the **show radius attributes-included** command output fields.

**Table 24: show radius attributes-included Output Fields**

Field Name	Field Description
Attribute Name	Name of the RADIUS attribute
Account On	Include status of the attribute in Acct-On messages: enabled, disabled, not configurable (n/c)
Account Off	Include status of the attribute in Acct-Off messages: enabled, disabled, n/c
Access Request	Include status of the attribute in Access Request messages: enabled, disabled, n/c
Account Start	Include status of the attribute in Acct-Start messages: enabled, disabled, n/c
Account Stop	Include status of the attribute in Acct-Stop messages: enabled, disabled, n/c

**Related Documentation**

- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
- [CLI Commands Used to Include ANCP-Related Juniper Networks VSAs in Access and Accounting Messages on page 77](#)
- [CLI Commands Used to Include or Exclude Attributes in RADIUS Messages on page 72](#)
- `show radius attributes-included`

## Monitoring Ignored RADIUS Attributes

**Purpose** Display the RADIUS attributes that are ignored in Access-Accept messages.

**Action** To display the RADIUS attributes that are ignored:

```
host1#show radius attributes-ignored
attribute framed-ip-netmask ignored from RADIUS server
attribute atm-service-category (vsa) accepted from RADIUS server
attribute atm-mbs (vsa) accepted from RADIUS server
attribute atm-pcr (vsa) accepted from RADIUS server
attribute atm-scr (vsa) accepted from RADIUS server
attribute egress-policy-name (vsa) accepted from RADIUS server
attribute ingress-policy-name (vsa) accepted from RADIUS server
```

attribute ipv6-egress-policy-name (vsa) accepted from RADIUS server  
attribute ipv6-ingress-policy-name (vsa) accepted from RADIUS server  
attribute virtual-router (vsa) accepted from RADIUS server  
attribute pppoe-max-session (vsa) ignored from RADIUS server

- Related Documentation**
- [CLI Commands Used to Configure Juniper Networks VSAs on page 83](#)
  - [CLI Commands Used to Ignore Attributes when Receiving Access-Accept Messages on page 79](#)
  - `show radius attributes-ignored`

---

## Monitoring the Status of ICR Partition Accounting

---

**Purpose** Display the status of ICR partition accounting.

**Action** To display the status of ICR partition accounting:

```
host1#show radius icr-partition-accounting
enabled
```

**Meaning** ICR partition accounting status is either enabled or disabled.

- Related Documentation**
- `show radius icr-partition-accounting`



## CHAPTER 16

# Monitoring RADIUS Servers and Services for AAA Features

- [Monitoring the RADIUS Server Algorithm on page 157](#)
- [Monitoring the RADIUS Attribute Used for DHCPv6 Prefix Delegation on page 157](#)
- [Monitoring the RADIUS Attribute Used for IPv6 Neighbor Discovery Router Advertisements on page 158](#)
- [Monitoring the RADIUS Rollover Configuration on page 158](#)
- [Monitoring RADIUS Override Settings on page 158](#)
- [Monitoring RADIUS Server Information on page 159](#)
- [Monitoring RADIUS Accounting for L2TP Tunnels on page 161](#)
- [Monitoring RADIUS Services Statistics on page 161](#)
- [Monitoring RADIUS SNMP Traps on page 165](#)
- [Monitoring RADIUS UDP Checksums on page 165](#)
- [Monitoring RADIUS Server IP Addresses on page 165](#)

### Monitoring the RADIUS Server Algorithm

---

**Purpose** Display information about the currently configured RADIUS server algorithm.

**Action** To display the RADIUS server algorithm:

```
host1#show radius algorithm
direct
```

**Related Documentation** • [show radius algorithm on page 168](#)

### Monitoring the RADIUS Attribute Used for DHCPv6 Prefix Delegation

---

**Purpose** Display the RADIUS attribute used for DHCPv6 Prefix Delegation.

**Action** To display the RADIUS attribute used for DHCPv6 Prefix Delegation:

```
host1#show aaa dhcpv6-delegated-prefix
DHCPv6 Delegated Prefix : Framed-IPv6-Prefix
```

**Related Documentation** • [show aaa dhcpv6-delegated-prefix](#)

## Monitoring the RADIUS Attribute Used for IPv6 Neighbor Discovery Router Advertisements

**Purpose** Display the RADIUS attribute used for IPv6 Neighbor Discovery router advertisements.

**Action** To display the RADIUS attribute used for IPv6 Neighbor Discovery router advertisements:

```
host1#show aaa ipv6-nd-ra-prefix
IPv6 ND RA Prefix      : IPv6-NdRa-Prefix (Juniper VSA)
```

**Related Documentation** • [show aaa ipv6-nd-ra-prefix](#)

## Monitoring the RADIUS Rollover Configuration

**Purpose** Display the configuration of the RADIUS rollover-on-reject feature.

**Action** To display the RADIUS rollover configuration:

```
host1#show radius rollover-on-reject
rollover-on-reject enabled
```

**Meaning** RADIUS rollover-on-reject is enabled.

**Related Documentation** • [show radius rollover-on-reject on page 170](#)

## Monitoring RADIUS Override Settings

**Purpose** Display the current RADIUS override settings.

**Action** To display the RADIUS override settings:

```
host1:vrXyz7#show radius override
nas-ip-addr: nas-ip-addr
nas-info:    from authentication virtual router
```

**Meaning** [Table 25 on page 158](#) lists the **show radius override** command output fields.

**Table 25: show radius override Output Fields**

Field Name	Field Description
nas-ip-addr	Either the NAS-IP-Address [4] attribute is used, or it is overridden with the Tunnel-Client-Endpoint [66] attribute.
nas-info	Either the NAS-IP-Address [4] and NAS-Identifier [32] attributes of the virtual router generating the accounting information are used, or they are overridden with the respective attributes of the authentication virtual router.

Related Documentation • [show radius override on page 169](#)

## Monitoring RADIUS Server Information

**Purpose** Display RADIUS server information.

Use with the optional **accounting**, **authentication**, **dynamic-request**, **route-download**, or **pre-authentication** keywords to limit output to the specific type of server.

**Action** To display RADIUS server configuration information:

host1#show radius servers

RADIUS Authentication Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
172.28.30.117	1812	3	3	255	30	radius	dead
172.28.30.118	1812	3	3	255	30	radius	active
172.28.30.119	1812	3	3	255	30	radius	alive
RADIUS Accounting Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
172.28.30.117	1813	3	3	255	30	radius	dead
172.28.30.118	1813	3	3	255	30	radius	active
172.28.30.119	1813	3	3	255	30	radius	alive
RADIUS Pre-Authentication Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
172.28.30.117	1812	3	3	255	30	radius	dead
172.28.30.118	1812	3	3	255	30	radius	active
172.28.30.119	1812	3	3	255	30	radius	alive
RADIUS Route-Download Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
192.168.30.16	1812	3	3	255	30	radius	dead
192.168.30.17	1812	3	3	255	30	radius	active
192.168.30.18	1812	3	3	255	30	radius	alive

**Meaning** If a RADIUS server was never configured on the virtual router, the command displays the following message:

```
host1#show radius servers
no radius servers configured
```

If a RADIUS server was configured previously and then removed on the virtual router, the command displays the following information:

```
host1#show radius servers
RADIUS Authentication Configuration
```

IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
RADIUS Accounting Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
RADIUS Pre-Authentication Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status
RADIUS Route-Download Configuration							
IP Address	Udp Port	Retry Count	Timeout	Maximum Sessions	Dead Time	Secret	Status

Table 26 on page 160 lists the **show radius servers** command output fields.

**Table 26: show radius servers Output Fields**

Field Name	Field Description
IP Address	IP address of RADIUS server
Udp Port	Number of the UDP port of the RADIUS server
Retry Count	Maximum number of times that the router retransmits a RADIUS packet to the RADIUS server
Timeout	Interval (in seconds) before the router retransmits a RADIUS packet to the RADIUS server
Maximum Sessions	Number of outstanding requests to the RADIUS server
Dead Time	Amount of time to remove the authentication server or accounting server from the available list when a timeout occurs
Secret	Configured authentication server or accounting server secret

Table 26: show radius servers Output Fields (*continued*)

Field Name	Field Description
Status	<p>Status of the configured RADIUS server:</p> <ul style="list-style-type: none"> <li>• <b>dead</b>-The status displayed if the server does not respond within the configured number of retransmit counts, and if Dead Time is configured to a non-zero value.</li> <li>• <b>active</b>-The status displayed of the earliest configured, non-dead server if the server is accessed using the direct algorithm. The status displayed of all non-dead servers if the server is accessed using the round-robin algorithm.</li> <li>• <b>alive</b>-The status displayed of all non-dead servers except the earliest configured non-dead server, if the server is accessed using the direct algorithm. The status of none of the servers if the server is accessed using the round-robin algorithm.</li> </ul>

**Related Documentation** • [show radius servers on page 171](#)

## Monitoring RADIUS Accounting for L2TP Tunnels

**Purpose** Display the status for RADIUS accounting for L2TP tunnels.

**Action** To display RADIUS accounting for L2TP tunnels:

```
host1#show radius tunnel-accounting
disabled
```

**Meaning** RADIUS accounting is either enabled or disabled.

**Related Documentation** • [show radius tunnel-accounting on page 173](#)

## Monitoring RADIUS Services Statistics

**Purpose** Use to display statistics for RADIUS services.

Use with the optional **accounting**, **authentication**, **dynamic-request**, **route-download**, or **pre-authentication** keywords to limit output to the specific type of statistics. Use the optional **delta** keyword to specify that baselined statistics are to be shown.

**Action** To display RADIUS authentication and accounting statistics:

```
host1#show radius statistics
RADIUS Authentication Statistics
-----
Statistic          10.10.121.128
-----
UDP Port            1812
Round Trip Time     0
Access Requests     0
```

Rollover Requests	0
Retransmissions	0
Access Accepts	0
Access Rejects	0
Access Challenges	0
Malformed Responses	0
Bad Authenticators	0
Requests Pending	0
Request Timeouts	0
Unknown Responses	0
Packets Dropped	0

#### RADIUS Accounting Statistics

Statistic	10.10.121.128
UDP Port	1646
Round Trip Time	2
Requests	1
Start Requests	1
Interim Requests	0
Stop Requests	0
Reject Requests	0
Rollover Requests	0
Retransmissions	3
Responses	1
Start Responses	1
Interim Responses	0
Stop Responses	0
Reject Responses	0
Malformed Responses	0
Bad Authenticators	0
Requests Pending	0
Request Timeouts	3
Unknown Responses	0
Packets Dropped	0

To display RADIUS pre-authentication statistics:

host1#show radius pre-authentication statistics

#### RADIUS Pre-Authentication Statistics

Statistic	172.28.30.117
UDP Port	1812
Round Trip Time	0
Access Requests	2809
Rollover Requests	0
Retransmissions	56
Access Accepts	2809
Access Rejects	0
Access Challenges	0
Malformed Responses	0
Bad Authenticators	0
Requests Pending	0
Request Timeouts	72
Unknown Responses	0
Packets Dropped	2

To display RADIUS route-download statistics:

```
host1#show radius route-download statistics
```

```

RADIUS Route-Download Statistics
-----
Statistic          192.168.30.16
-----
UDP Port           1812
Round Trip Time    0
Access Requests    1613
Rollover Requests  0
Retransmissions    6
Access Accepts     1612
Access Rejects     1
Access Challenges  0
Malformed Responses 0
Bad Authenticators 0
Requests Pending   0
Request Timeouts   6
Unknown Responses  0
Packets Dropped    5

```

**Meaning** Table 27 on page 163 lists the **show radius statistics** command output fields.



**NOTE:** All descriptions apply to the primary, secondary, and tertiary RADIUS authentication and accounting servers.

**Table 27: show radius statistics Output Fields**

Field Name	Field Description
UDP Port	Number of the UDP port of a RADIUS server
Round Trip Time	Hundreds of seconds from request to response
Access Requests	Number of access requests sent to server
Rollover Requests	Number of requests coming into server as a result of the previous server timing out
Retransmissions	Number of retransmissions
Access Accepts	Number of Access-Accepts received from the server
Access Rejects	Number of Access-Rejects received from the server
Access Challenges	Number of access challenges received from the server
Malformed Responses	Number of responses with attributes having an invalid length or unexpected attributes (such as two attributes when the response is required to have at most one)

Table 27: show radius statistics Output Fields (*continued*)

Field Name	Field Description
Bad Authenticators	Number of responses in which the authenticator is incorrect for the matching request. This can occur if the RADIUS secret for the client and server does not match.
Requests Pending	Number of requests waiting for a response
Request Timeouts	Number of requests that timed out
Unknown Responses	Number of unknown responses. The RADIUS response type in the header is invalid or unsupported.
Packets Dropped	Number of packets dropped either because they are too short or the E Series router receives a response for which there is no corresponding request. For example, if the router sends a request and the request times out, the router removes the request from the list and sends a new request. If the server is slow and sends a response to the first request after the router removes the request, the packet is dropped.
Requests	Total number of accounting requests sent, which is the combined total of Start Requests, Interim Requests, Stop Requests, and Reject Requests
Start Requests	Number of accounting start requests sent; includes Acct-On, Acct-Start, Acct-Link-State, and Acct-Tunnel-Start requests
Interim Requests	Number of interim accounting requests
Stop Requests	Number of accounting stop requests sent; includes Acct-Off, Acct-Stop, Acct-Link-Stop, and Acct-Tunnel-Stop requests
Reject Requests	Number of accounting reject requests sent; includes Acct-Link-Reject and Acct-Tunnel-Reject requests
Responses	Number of accounting responses received from the server
Start Responses	Number of accounting start responses received; includes Acct-On, Acct-Start, Acct-Link-Start, and Acct-Tunnel-Start responses
Interim Responses	Number of interim accounting responses
Stop Responses	Number of accounting stop responses received; includes Acct-Off, Acct-Stop, Acct-Link-Stop, and Acct-Tunnel-Stop responses



Table 27: show radius statistics Output Fields (*continued*)

Field Name	Field Description
Reject Responses	Number of accounting reject responses received; includes Acct-Link-Reject and Acct-Tunnel-Reject responses

**Related Documentation**

- [show radius statistics on page 172](#)

## Monitoring RADIUS SNMP Traps

**Purpose** Display the configuration of RADIUS SNMP traps.

**Action** To display RADIUS SNMP traps configuration information:

```
host1#show radius trap
trap for auth-server-not-responding enabled
trap for no-auth-server-responding disabled
trap for auth-server-responding enabled
trap for acct-server-not-responding enabled
trap for no-acct-server-responding disabled
trap for acct-server-responding disabled
```

**Meaning** A list of the configured RADIUS-related SNMP traps is displayed.

**Related Documentation**

- [show radius trap](#)

## Monitoring RADIUS UDP Checksums

**Purpose** Display information about UDP checksums.

**Action** To display the status of RADIUS UDP checksums:

```
host1#show radius udp-checksum
enabled
```

**Meaning** RADIUS checksums status is either enabled or disabled.

**Related Documentation**

- [show radius udp-checksum](#)

## Monitoring RADIUS Server IP Addresses

**Purpose** Display the IP address of the RADIUS servers.

**Action** To display the RADIUS server IP address:

```
host1#show radius update-source-address
192.168.1.228
```

**Related Documentation**

- [show radius update-source-addr](#)

## CHAPTER 17

# Monitoring Commands

## show radius algorithm

---

**Syntax**    show radius algorithm [ *filter* ]

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Displays the RADIUS algorithm that the RADIUS servers use.

**Options**    • *filter*—See Filtering show Commands

**Mode**    Privileged Exec

## show radius override

---

**Syntax**    show radius override [ *filter* ]

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Displays the current override settings configured on the RADIUS client (LNS) for the NAS-IP-Address [4], NAS-Port-Id [87], Calling-Station-Id [31], and NAS-Identifier [32] RADIUS attributes. The nas-info field in the command output indicates the virtual router that generates the NAS-IP-Address and NAS-Identifier attributes for AAA broadcast accounting packets.

**Options**    • *filter*—See Filtering show Commands

**Mode**    Privileged Exec

## show radius rollover-on-reject

---

**Syntax**    show radius rollover-on-reject [ *filter* ]

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Displays the configuration of the rollover-on-reject feature.

**Options**    • *filter*—See Filtering show Commands

**Mode**    Privileged Exec

---

## show radius servers

---

<b>Syntax</b>	show radius [ <i>serverType</i> ] servers [ <i>filter</i> ]
<b>Release Information</b>	Command introduced before JunosE Release 7.1.0. <b>pre-authentication</b> keyword added in JunosE Release 8.1.0.
<b>Description</b>	Displays information about the RADIUS servers configured on the router.
<b>Options</b>	<ul style="list-style-type: none"><li>• <i>serverType</i>—One of the following RADIUS server types:<ul style="list-style-type: none"><li>• authentication—Displays authentication information only</li><li>• accounting—Displays accounting information only</li><li>• dynamic-request—Displays dynamic-request information only</li><li>• pre-authentication—Displays preauthentication information only</li></ul></li><li>• <i>filter</i>—See Filtering show Commands</li></ul>
<b>Mode</b>	Privileged Exec
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• Monitoring RADIUS Dynamic-Request Server Information</li></ul>

## show radius statistics

---

<b>Syntax</b>	show radius [ <i>serverType</i> ] statistics [ delta ] [ <i>filter</i> ]
<b>Release Information</b>	Command introduced before JunosE Release 7.1.0. <b>pre-authentication</b> keyword added in JunosE Release 8.1.0.
<b>Description</b>	Displays statistics for the RADIUS servers configured on the router.
<b>Options</b>	<ul style="list-style-type: none"><li>• <i>serverType</i>—One of the following RADIUS server types:<ul style="list-style-type: none"><li>• authentication—Displays authentication statistics only</li><li>• accounting—Displays accounting statistics only</li><li>• dynamic-request—Displays dynamic-request statistics only</li><li>• pre-authentication—Displays preauthentication statistics only</li></ul></li><li>• delta—Displays baselined statistics</li><li>• <i>filter</i>—See Filtering show Commands</li></ul>
<b>Mode</b>	Privileged Exec
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• Monitoring RADIUS Dynamic-Request Server Information</li></ul>



## show radius tunnel-accounting

---

**Syntax**    show radius tunnel-accounting [ *filter* ]

**Release Information**    Command introduced before JunosE Release 7.1.0.

**Description**    Displays information about RADIUS accounting for L2TP tunnels.

**Options**    • *filter*—See Filtering show Commands

**Mode**    Privileged Exec



## PART 2

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