



Offload Server Accounting Enhancement

First Published: September 27, 2001

Last Updated: October 19, 2009

The Offload Server Accounting Enhancement feature allows users to maintain authentication and accounting information between their network access servers (NASs) and the offload server.

Although NASs can already synchronize information with an offload server, this feature extends the functionality to include a unique session-id, adding the Acct-Session-Id (attribute 44) before the existing session-id (NAS-IP-Address), and Class (attribute 25) information collected by the NASs.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the “[Feature Information for Offload Server Accounting Enhancement](#)” section on page 7.

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to <http://tools.cisco.com/ITDIT/CFN/jsp/index.jsp>. An account on Cisco.com is not required.

Contents

- [Prerequisites, page 2](#)
- [Information About Offload Server Accounting Enhancement, page 2](#)
- [How to Configure the Offload Server Accounting Enhancement, page 2](#)
- [Configuration Examples for the Offload Server Accounting Enhancement, page 4](#)
- [Additional References, page 5](#)
- [Feature Information for Offload Server Accounting Enhancement, page 7](#)
- [Glossary, page 7](#)



Americas Headquarters:

Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Prerequisites

Before configuring the Offload Server Accounting Enhancement feature, you must perform the following tasks:

- Enable AAA. See the “[Configuring Authentication](#)” feature module for more information.
- Enable VPN. See the *Cisco IOS Security Configuration Guide: Secure Connectivity*, Release 12.4T for more information.

Information About Offload Server Accounting Enhancement

The Offload Server Accounting Enhancement feature allows users to configure their network access servers (NAS) to synchronize authentication and accounting information—NAS-IP-Address (attribute 4) and Class (attribute 25)—with the offload server.

An offload server interacts with a NAS through a Virtual Private Network (VPN) to perform required Point-to-Point Protocol (PPP) negotiation for calls. The NAS performs call preauthentication, whereas the offload server performs user authentication. This feature allows the authentication and accounting data of the NAS to synchronize with the offload server as follows:

- During preauthentication, the NAS generates a unique session-id, adding the Acct-Session-Id (attribute 44) before the existing session-id (NAS-IP-Address), and retrieves a Class attribute. The new session-id is sent in preauthentication requests and resource accounting requests; the Class attribute is sent in resource accounting requests.

**Note**

Unique session-ids are needed when multiple NASs are being processed by one offload server.

- The NAS-IP-Address, the Acct-Session-Id, and the Class attribute are transmitted to the offload server through Layer 2 Forwarding (L2F) options.
- The offload server includes the new, unique session-id in user access requests and user session accounting requests. The Class attribute that is passed from the NAS is included in the user access request, but a new Class attribute is received in the user access reply; this new Class attribute should be included in user session accounting requests.

How to Configure the Offload Server Accounting Enhancement

See the following sections for configuration tasks for the Offload Server Accounting Enhancement feature. Each task in the list is identified as either required or optional.

- [Configuring Unique Session IDs, page 3](#)(required)
- [Configuring Offload Server to Synchronize with NAS Clients, page 3](#)(required)
- [Verifying Offload Server Accounting, page 3](#)(optional)

Configuring Unique Session IDs

To maintain unique session IDs among NASs, use the following global configuration command. When multiple NASs are being processed by one offload server, this feature must be enabled by all NASs and by the offload server to ensure a common and unique session-id.

Command	Purpose
Router(config)# radius-server attribute 44 extend-with-addr	<p>Adds the accounting IP address in front of the existing AAA session ID.</p> <p>Note The unique session-id is different from other NAS session-ids because it adds the Acct-Session-Id (attribute 44) before the existing session-id (NAS-IP-Address).</p>

Configuring Offload Server to Synchronize with NAS Clients

To configure the offload server to synchronize accounting session information with the NAS clients, use the following global configuration command:

Command	Purpose
Router(config)# radius-server attribute 44 sync-with-client	Configures the offload server to synchronize accounting session information with the NAS clients.

Verifying Offload Server Accounting

To verify whether the NAS has synchronized authentication and accounting data with the offload server, use the following commands in privileged EXEC mode:

Command	Purpose
Router# more system:running-config	Displays the contents of the current running configuration file. (Note that the more system:running-config command has replaced the show running-config command.)
Router(config)# debug radius	Displays information associated with RADIUS. The output of this command shows whether attribute 44 is being sent in access requests. The output, however, does not show the entire value for attribute 44. To view the entire value for attribute 44, refer to your RADIUS server log.

Configuration Examples for the Offload Server Accounting Enhancement

This section provides the following configuration examples:

- [Unique Session ID Configuration: Example, page 4](#)
- [Offload Server Synchronization with NAS Clients: Example, page 4](#)

Unique Session ID Configuration: Example

The following example shows how to configure unique session IDs among NASs:

```
aaa new-model
aaa authentication ppp default group radius
radius-server host 10.100.1.34
radius-server attribute 44 include-in-access-req
radius-server attribute 44 extend-with-addr
```

Offload Server Synchronization with NAS Clients: Example

The following example shows how to configure the offload server to synchronize accounting session information with NAS clients:

```
radius-server attribute 44 sync-with-client
```

Additional References

The following sections provide references related to the Offload Server Accounting Enhancement.

Related Documents

Related Topic	Document Title
Enable VPN	Cisco IOS Security Configuration Guide: Secure Connectivity , Release 12.4T.
Enable AAA	“ Configuring Authentication ” module.

Standards

Standard	Title
None	—

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
None	—

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<p>http://www.cisco.com/techsupport</p>

Feature Information for Offload Server Accounting Enhancement

Table 1 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command reference documentation.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://tools.cisco.com/ITDIT/CFN/jsp/index.jsp>. An account on Cisco.com is not required.



Note

Table 1 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 1 Feature Information for Offload Server Accounting Enhancement

Feature Name	Releases	Feature Information
Offload Server Accounting Enhancement	12.2(4)T 12.2(28)SB 12.2(33)SRC	<p>The Offload Server Accounting Enhancement feature allows users to maintain authentication and accounting information between their network access servers (NASs) and the offload server.</p> <p>This feature was introduced in Cisco IOS Release 12.2(4)T.</p> <p>This feature was integrated into Cisco IOS Release 12.2(28)SB.</p> <p>This feature was integrated into Cisco IOS Release 12.2(33)SRC.</p> <p>The following commands were introduced or modified: radius-server attribute 44 extend-with-addr, radius-server attribute 44 sync-with-client</p>

Glossary

AAA—authentication, authorization, and accounting. Suite of network security services that provide the primary framework through which access control can be set up on your Cisco router or access server.

Acct-Session-ID (attribute 44)—A unique accounting identifier that makes it easy to match start and stop records in a log file. Acct-Session ID numbers restart at 1 each time the router is power-cycled or the software is reloaded.

Class (attribute 25)—An accounting attribute. Arbitrary value that the network access server includes in all accounting packets for this user if the attribute is supplied by the RADIUS server.

L2F—Layer 2 Forwarding. A Layer 2 tunneling protocol that enables an ISP or other access service to create a virtual tunnel to link customer remote sites or remote users with corporate home networks. In particular, a network access server (NAS) at the ISP point of presence (POP) exchanges PPP messages with the remote users and communicates by L2F or L2TP requests and responses with the customer tunnel server to set up tunnels.

NAS—network access server. A Cisco platform (or collection of platforms, such as an AccessPath system) that interfaces between the packet world (for example, the Internet) and the circuit world (for example, the public switched telephone network).

NAS-IP Address (attribute 4)—Specifies the IP address of the network access server that is requesting authentication. The default value is 0.0.0.0/0.

PPP—Point-to-Point Protocol. Successor to SLIP that provides router-to-router and host-to-network connections over synchronous and asynchronous circuits. Whereas SLIP was designed to work with IP, PPP was designed to work with several network layer protocols, such as IP, IPX, and ARA. PPP also has built-in security mechanisms, such as CHAP and PAP. PPP relies on two protocols: LCP and NCP.

RADIUS—Remote Authentication Dial-In User Service. RADIUS is a distributed client/server system that secures networks against unauthorized access. In the Cisco implementation, RADIUS clients run on Cisco routers and send authentication requests to a central RADIUS server that contains all user authentication and network service access information.

VPN—A system that permits dial-in networks to exist remotely to home networks, while giving the appearance of being directly connected. VPNs use L2TP and L2F to terminate the Layer 2 and higher parts of the network connection at the LNS instead of the LAC.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

© 2001–2009 Cisco Systems, Inc. All rights reserved.