Configuring Authentication, Authorization, and Accounting

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Configuring the AAA Authentication Server

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About the Authentication Order

The AAA policy specifies the failover functionality that you can optionally configure for the authentication server. You can use these two types of failover functionality separately or in combination:

- Authentication failover
- Unreachable failover

Related Topics
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About Authentication Failover

The authentication failover feature enables you to optionally use a remote RADIUS server for user login authentication, in addition to the local database. The procedure in this section configures the order in which authentication is resolved. You can configure authentication to use:

- The local database only
- The remote server only
- The local database first, then the remote server
- The remote server first, then the local database

When using both local and remote authentication, you can also configure whether you want the user attributes that are retrieved from a remote RADIUS AAA server to be merged with the attributes found in the local user database for the same username.

Note

When using AAA authentication, a user configured only on the remote radius server (and not on the local Cisco Unified SIP Proxy user database) will have low privilege levels and limited GUI access upon logging into Cisco Unified SIP Proxy. To enable higher privilege levels for this user, configure a local user with the same username as that on the Radius server, and assign the appropriate authorization levels. For detailed information, see Application Note on AAA based Authentication.

Note

The authentication failover feature has the following limitations:

- Authentication with a RADIUS server is available only when accessing the GUI or CLI interface and requires only a user ID and password. The auto-attendant interface does not require authentication because it is user independent.
- Login information is not synchronized between the local system and the remote server. Therefore:
  - Any security features such, as password expiration, must be configured separately for Cisco Unified SIP Proxy and the RADIUS server.
  - Cisco Unified SIP Proxy users are not prompted when security events, such as password expiration or account lockout, occur on the RADIUS server.
  - RADIUS server users are not prompted when security events, such as password expiration or account lockout, occur on Cisco Unified SIP Proxy.

Related Topics

- Back to the Configuring Authentication, Authorization, and Accounting menu page
- Back to the Configuring the AAA Authentication Server menu page
- Next topic: About Unreachable Failover

About Unreachable Failover

The Unreachable Failover feature is used only with RADIUS servers. This feature enables you to configure up to two addresses that can be used to access RADIUS servers.
As Cisco Unified SIP Proxy attempts to authenticate a user with the RADIUS servers, the system sends messages to users to notify them when a RADIUS server either cannot be reached or fails to authenticate the user.

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- Back to the Configuring the AAA Authentication Server menu page
- Next topic: Example of Authentication Sequence

Example of Authentication Sequence

In this example, authentication is performed by the remote server first, then by the local database. Also, two addresses are configured for the remote RADIUS server.

This sequence of events could occur during authentication for this example:

1. Cisco Unified SIP Proxy tries to contact the first remote RADIUS server.
2. If the first RADIUS server does not respond or does not accept the authentication credentials of the user, Cisco Unified SIP Proxy tries to contact the second remote RADIUS server.
3. If the second RADIUS server does not respond or does not accept the authentication credentials of the user, the user receives the appropriate error message and Cisco Unified SIP Proxy tries to contact the local database.
4. If the local database does not accept the authentication credentials of the user, the user receives an error message.

Related Topics
- Back to the Configuring Authentication, Authorization, and Accounting menu page
- Back to the Configuring the AAA Authentication Server menu page
- Next topic: Configuring Connection Parameters for the AAA Authentication Server

Configuring Connection Parameters for the AAA Authentication Server

Procedure

**Step 1**
Choose Configure > AAA > Authentication.

The system displays the Configure AAA Authentication page.

**Step 2**
Enter the following information in the appropriate fields for the primary server, and optionally, for the secondary server:
- Authentication order
- Number of login retries
- Length of login timeout
- Hostname
- Port
- Password
Specifying the Policy that Controls the Behavior of Authentication and Authorization

Procedure

Step 1
Choose Configure > AAA > Authorization.
The system displays the Configure AAA Authorization page.

Step 2
Select or deselect whether you want to merge the attributes of the remote AAA server with the attributes in the local database.

Step 3
Click Apply.

Step 4
Click OK to save your changes.

Related Topics
Back to the Configuring Authentication, Authorization, and Accounting menu page

Configuring the AAA Accounting Server

- Overview
- AAA Accounting Event Logging
- Configuring the AAA Accounting Server and Event Logging

Related Topics
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Overview

You can configure up to two AAA accounting servers. Automatic failover functionality is provided if you have two accounting servers configured. If the first server is unreachable, the accounting information is sent to the second server. If both accounting servers are unreachable, accounting records are cached until a server becomes available. If a server cannot be reached before the cache is full, the oldest accounting packets are dropped to make room for the new packets.
Because the configuration of the AAA accounting server is completely independent of the AAA authentication server, you can configure the AAA accounting server to be on the same or different machine from the AAA authentication server.

If you use a syslog server, it is not affected by the AAA configuration and continues to use the existing user interfaces. When the RADIUS server sends AAA accounting information to a syslog server, it is normalized into a single string before being recorded. If no syslog server is defined, the AAA accounting logs are recorded by the syslog server running locally on Cisco Unity Express.

Note
Only RADIUS servers are supported.

Related Topics
- Back to the Configuring Authentication, Authorization, and Accounting menu page
- Back to the Configuring the AAA Accounting Server menu page
- Next topic: AAA Accounting Event Logging

AAA Accounting Event Logging

AAA accounting logs contain information that enables you to easily:
- Audit configuration changes.
- Maintain security.
- Accurately allocate resources.
- Determine who should be billed for the use of resources.

You can configure AAA accounting to log the following types of events:

<table>
<thead>
<tr>
<th>Log Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>login</td>
<td>All forms of system access when a login is required.</td>
</tr>
<tr>
<td>logout</td>
<td>All forms of system access when a login is required before logout.</td>
</tr>
<tr>
<td>login-fail</td>
<td>Failed login attempts for all forms of system access when a login is required.</td>
</tr>
<tr>
<td>config-commands</td>
<td>Any changes made to the system configuration using any interface.</td>
</tr>
<tr>
<td>exec-commands</td>
<td>Any commands entered in EXEC mode using any interface.</td>
</tr>
<tr>
<td>system-startup</td>
<td>System startups, which include information about the system’s software version, installed licenses, installed packages, installed languages, and so on.</td>
</tr>
<tr>
<td>system-shutdown</td>
<td>System shutdowns, which include information about the system’s software version, installed licenses, installed packages, installed languages, and so on.</td>
</tr>
</tbody>
</table>

In addition to information specific to the type of action performed, the accounting logs also indicate the following:
Configuring the AAA Accounting Server and Event Logging

Use this procedure to configure the information used to log into the accounting server.

Procedure

Step 1 Choose **Configure > AAA > Accounting**.

The system displays the Configure AAA Accounting page.

Step 2 Enter the following information in the appropriate fields:

- If accounting is enabled
- Number of login retries
- Length of login timeout, in seconds
- Server IP address or DNS name for the primary server
- Port number used for the primary server
- Password for the primary server
- Server IP address or DNS name for the secondary server
- Port number used for the secondary server
- Password for the secondary server

Step 3 Select the log events to include in the log and deselect those to not include.

Step 4 Click **Apply**.

Step 5 Click **OK** to save your changes.

Related Topics

- Back to the Configuring Authentication, Authorization, and Accounting menu page
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