



Configuring Local Authentication Using LDAP

Local authentication using Lightweight Directory Access Protocol (LDAP) allows an endpoint to be authenticated using 802.1X, MAC authentication bypass (MAB), or web authentication with LDAP as a backend. Local authentication in Identity-Based Networking Services also supports associating an authentication, authorization, and accounting (AAA) attribute list with the local username. This module provides information about configuring local authentication for Identity-Based Networking Services.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see [Bug Search Tool](#) and 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 table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About Local Authentication Using LDAP

Local Authentication Using LDAP

Local authentication using LDAP allows an endpoint to be authenticated using 802.1X, MAB, or web authentication with LDAP as a backend. Local authentication also supports additional AAA attributes by associating an attribute list with a local username for wireless sessions.

AES Key Wrap

The Advanced Encryption Standard (AES) key wrap feature makes the shared secret between the controller and the RADIUS server more secure. AES key wrap is designed for Federal Information Processing Standards (FIPS) customers and requires a key-wrap compliant RADIUS authentication server.

How to Configure Local Authentication Using LDAP

Configuring Local Authentication Using LDAP

Perform this task to specify the AAA method list for local authentication and to associate an attribute list with a local username.

SUMMARY STEPS

- enable**
- configure terminal**
- aaa new-model**
- aaa local authentication** *{method-list-name | default}* **authorization** *{method-list-name | default}*
- username** *name* **aaa attribute list** *aaa-attribute-list* [**password** *password*]
- exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	aaa new-model Example: Device(config)# aaa new-model	Enables the authentication, authorization, and accounting (AAA) access control model.

	Command or Action	Purpose
Step 4	aaa local authentication <i>{method-list-name default}</i> authorization <i>{method-list-name default}</i> Example: Device(config)# aaa local authentication default authorization default	Specifies the method lists to use for local authentication and authorization from a LDAP server.
Step 5	username <i>name</i> aaa attribute list <i>aaa-attribute-list</i> [password <i>password</i>] Example: Device(config)# username USER_1 aaa attribute list LOCAL_LIST password CISCO	Associates a AAA attribute list with a local username.
Step 6	exit Example: Device(config)# exit	Exits global configuration mode and returns to privileged EXEC mode.

Configuring MAC Filtering Support

Perform this task to set the RADIUS compatibility mode, the MAC delimiter, and the MAC address as the username to support MAC filtering.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **aaa new-model**
4. **aaa group server radius** *group-name*
5. **subscriber mac-filtering security-mode** {*mac* | *none* | *shared-secret*}
6. **mac-delimiter** {*colon* | *hyphen* | *none* | *single-hyphen*}
7. **exit**
8. **username** *mac-address* **mac** [**aaa attribute list** *aaa-attribute-list*]
9. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode.

	Command or Action	Purpose
	Example: Device> enable	Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	aaa new-model Example: Device(config)# aaa new-model	Enables the authentication, authorization, and accounting (AAA) access control model.
Step 4	aaa group server radius group-name Example: Device(config)# aaa group server radius RAD_GROUP1	Groups different RADIUS server hosts into distinct lists.
Step 5	subscriber mac-filtering security-mode {mac none shared-secret} Example: Device(config-sg-radius)# subscriber mac-filtering security-mode mac	Specifies the RADIUS compatibility mode for MAC filtering. The default value is none.
Step 6	mac-delimiter {colon hyphen none single-hyphen} Example: Device(config-sg-radius)# mac-delimiter hyphen	Specifies the MAC delimiter for RADIUS compatibility mode. The default value is none.
Step 7	exit Example: Device(config-sg-radius)# exit	Exits server group configuration mode and returns to global configuration mode.
Step 8	username mac-address mac [aaa attribute list aaa-attribute-list] Example: Device(config)# username 00-22-WP-EC-23-3C mac aaa attribute list AAA_list1	Allows a MAC address to be used as the username for MAC filtering done locally.
Step 9	exit Example: Device(config)# exit	Exits global configuration mode and returns to privileged EXEC mode.

Enabling AES Key Wrap

Advanced Encryption Standard (AES) key wrap makes the shared secret between the controller and the RADIUS server more secure. AES key wrap requires a key-wrap compliant RADIUS authentication server.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **radius-server host** *{hostname | ip-address}* **key-wrap encryption-key** *encryption-key* **message-auth-code-key** *encryption-key* [**format** *{ascii | hex}*]
4. **aaa new-model**
5. **aaa group server radius** *group-name*
6. **server** *ip-address* [**auth-port** *port-number*] [**acct-port** *port-number*]
7. **key-wrap enable**
8. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	radius-server host <i>{hostname ip-address}</i> key-wrap encryption-key <i>encryption-key</i> message-auth-code-key <i>encryption-key</i> [format <i>{ascii hex}</i>] Example: Device(config)# radius-server host 10.10.1.2 key-wrap encryption-key testkey99 message-auth-code-key testkey123	Defines a RADIUS server host.
Step 4	aaa new-model Example: Device(config)# aaa new-model	Enables the authentication, authorization, and accounting (AAA) access control model.
Step 5	aaa group server radius <i>group-name</i> Example: Device(config)# aaa group server radius RAD_GROUP1	Groups different RADIUS server hosts into distinct lists.

	Command or Action	Purpose
Step 6	server <i>ip-address</i> [auth-port <i>port-number</i>] [acct-port <i>port-number</i>] Example: Device(config-sg-radius)# server 10.10.1.2	Specifies the IP address of the RADIUS server in the server group.
Step 7	key-wrap enable Example: Device(config-sg-radius)# key-wrap enable	Enables AES key wrap for this RADIUS server.
Step 8	end Example: Device(config-sg-radius)# end	Exits server group configuration mode and returns to privileged EXEC mode.

Configuration Examples for Local Authentication Using LDAP

Example: Configuring Local Authentication Using LDAP

The following example shows a configuration for local authentication:

```
!
username USER_1 password 0 CISCO
username USER_1 aaa attribute list LOCAL_LIST
aaa new-model
aaa local authentication EAP_LIST authorization EAP_LIST
!
```

Example: Configuring MAC Filtering Support

The following example shows a configuration for MAC filtering:

```
username 00-22-WP-EC-23-3C mac aaa attribute list AAA_list1
!
aaa group server radius RAD_GROUP1
subscriber mac-filtering security-mode mac
mac-delimiter hyphen
```

Example: Configuring AES Key Wrap

The following example shows a configuration with key wrap enabled for a RADIUS server:

```
aaa group server radius RAD_GROUP1
server 10.10.1.2
key-wrap enable
!
```

```
radius-server host 10.10.1.2  
!
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
Identity-Based Networking Services commands	Cisco IOS Identity-Based Networking Services Command Reference
Address Resolution Protocol (ARP) commands	Cisco IOS IP Addressing Services Command Reference
ARP configuration tasks	IP Addressing - ARP Configuration Guide
Authentication, authorization, and accounting (AAA) configuration tasks	Authentication Authorization and Accounting Configuration Guide
AAA commands	Cisco IOS Security Command Reference

Standards and RFCs

Standard/RFC	Title
RFC 5176	Dynamic Authorization Extensions to RADIUS

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for Local Authentication Using LDAP

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [http://www.cisco.com/go/featurenavigator](#). An account on Cisco.com is not required.

Table 1: Feature Information for Local Authentication Using LDAP

Feature Name	Releases	Feature Information
Local Authentication Using LDAP	Cisco IOS XE Release 3.2SE	Introduces support for local authentication using Lightweight Directory Access Protocol (LDAP). In Cisco IOS XE 3.2SE, this feature is supported on the following platforms: • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco 5700 Wireless LAN Controllers The following commands were introduced or modified: aaa local authentication, key-wrap enable, mac-delimiter, radius-server host, subscriber mac-filtering security-mode, username.