Configuring LDAP

LDAP

An LDAP backend database allows the controller to query an LDAP server for the credentials (username and password) of a particular user. These credentials are then used to authenticate the user. For example, local EAP may use an LDAP server as its backend database to retrieve user credentials.

Note From Release 8.0, IPv6 can also be used to configure the LDAP server on the controller.

Fallback LDAP Servers

The LDAP servers are configured on a WLAN for authentication. You require at least two LDAP servers to configure them for fallback behavior. A maximum of three LDAP servers can be configured for the fallback behavior per WLAN. The servers are listed in the priority order for authentication. If the first LDAP server becomes irresponsive, then the controller switches to the next LDAP server. If the second LDAP server becomes irresponsive, then the controller switches again to the third LDAP server.

The LDAP backend database supports these local EAP methods: EAP-TLS, EAP-FAST/GTC, and PEAPv1/GTC. LEAP, EAP-FAST/MSCHAPv2, EAP-FAST/EAP-GTC and PEAPv0/MSCHAPv2 are also supported, but only if the LDAP server is set up to return a clear-text password.

Controllers support Local EAP authentication against external LDAP databases such as Microsoft Active Directory and Novell's eDirectory.

This section contains the following subsections:

Configuring LDAP (GUI)

Step 1 Choose **Security** > **AAA** > **LDAP** to open the LDAP Servers page.

- If you want to delete an existing LDAP server, hover your cursor over the blue drop-down arrow for that server and choose **Remove**.
- If you want to make sure that the controller can reach a particular server, hover your cursor over the blue drop-down arrow for that server and choose **Ping**.

Step 2 Perform one of the following:

- To edit an existing LDAP server, click the index number for that server. The **LDAP Servers > Edit** page is displayed.
- To add an LDAP server, click **New**. The **LDAP Servers > New** page is displayed. If you are adding a new server, choose a number from the Server Index (Priority) drop-down list to specify the priority order of this server in relation to any other configured LDAP servers. You can configure up to 17 servers. If the controller cannot reach the first server, it tries the second one in the list and so on.

Step 3 If you are adding a new server, enter the IP address of the LDAP server in the **Server IP Address** field. Both IPv4 and IPv6 addresses are supported.

Step 4 If you are adding a new server, enter the LDAP server's TCP port number in the **Port Number** field. The valid range is 1 to 65535, and the default value is 389.

Note Only LDAP port 389 is supported on Cisco WLC. No other ports are supported for LDAP.

Step 5 From the **Server Mode** drop-down list, choose **None**.

Step 6 Check the **Enable Server Status** check box to enable this LDAP server or unselect it to disable it. The default value is disabled.

Step 7 From the **Simple Bind** drop-down list, choose **Anonymous** or **Authenticated** to specify the local authentication bind method for the LDAP server. The Anonymous method allows anonymous access to the LDAP server. The Authenticated method requires that a username and password be entered to secure access. The default value is Anonymous.

Step 8 If you chose **Authenticated** in the previous step, follow these steps:

a) In the **Bind Username** field, enter a username to be used for local authentication to the LDAP server. The username can contain up to 80 characters.

Note If the username starts with "cn=" (in lowercase letters), the controller assumes that the username includes the entire LDAP database path and does not append the user base DN. This designation allows the authenticated bind user to be outside the user base DN.

b) In the **Bind Username** field, enter a username to be used for local authentication to the LDAP server. The username can contain up to 80 characters.

Step 9 In the **User Base DN** field, enter the distinguished name (DN) of the subtree in the LDAP server that contains a list of all the users. For example, ou=organizational unit, .ou=next organizational unit, and o=corporation.com. If the tree containing users is the base DN, type.

o=*corporation*.com

or

dc=*corporation*, **dc=com**

Step 10 In the **User Attribute** field, enter the name of the attribute in the user record that contains the username. You can obtain this attribute from your directory server.

Step 11 In the **User Object Type** field, enter the value of the LDAP objectType attribute that identifies the record as a user. Often, user records have several values for the objectType attribute, some of which are unique to the user and some of which are shared with other object types.

Step 12 In the **Server Timeout** field, enter the number of seconds between retransmissions. The valid range is 2 to 30 seconds, and the default value is 2 seconds.

Step 13 Click **Apply** to commit your changes.

Step 14 Click **Save Configuration** to save your changes.

Step 15 Specify LDAP as the priority backend database server for local EAP authentication as follows:

a) Choose **Security** > **Local EAP** > **Authentication Priority** to open the **Priority Order > Local-Auth** page.

b) Highlight **LOCAL** and click **<** to move it to the left **User Credentials** field.

c) Highlight **LDAP** and click **>** to move it to the right **User Credentials** field. The database that is displayed at the top of the right **User Credentials** field is used when retrieving user credentials.

Note If both LDAP and LOCAL appear in the right **User Credentials** field with LDAP on the top and LOCAL on the bottom, local EAP attempts to authenticate clients using the LDAP backend database and fails over to the local user database if the LDAP servers are not reachable. If the user is not found, the authentication attempt is rejected. If LOCAL is on the top, local EAP attempts to authenticate using only the local user database. It does not fail over to the LDAP backend database.

d) Click **Apply** to commit your changes.

e) Click **Save Configuration** to save your changes.

Step 16 (Optional) Assign specific LDAP servers to a WLAN as follows:

a) Choose **WLANs** to open the WLANs page.

b) Click the ID number of the desired WLAN.

c) When the **WLANs > Edit** page is displayed, choose the **Security** > **AAA Servers** tabs to open the **WLANs > Edit (Security > AAA Servers)** page.

d) From the **LDAP Servers** drop-down lists, choose the LDAP server(s) that you want to use with this WLAN. You can choose up to three LDAP servers, which are tried in priority order.

Note These LDAP servers apply only to WLANs with web authentication enabled. They are not used by local EAP.

e) Click **Apply** to commit your changes.

f) Click **Save Configuration** to save your changes.

Step 17 Specify the LDAP server fallback behavior, as follows:

a) Choose **WLAN** > **AAA Server** to open the **Fallback Parameters** page.

b) From the **LDAP Servers** drop-down list, choose the LDAP server in the order of priority when the controller attempts to authenticate management users. The order of authentication is from server.

c) Choose **Security** > **AAA** > **LDAP** to view the list of global LDAP servers configured for the controller.

Configuring LDAP (CLI)

Procedure

- Configure an LDAP server by entering these commands:
  - **config ldap add** *index server_ip_address port# user_base user_attr user_type* — Adds an LDAP server.

- **config ldap delete** *index*—Deletes a previously added LDAP server.
- **config ldap** {**enable** | **disable**} *index*—Enables or disables an LDAP server.
- **config ldap simple-bind** {**anonymous** *index* | **authenticated** *index* **username** *username* **password** *password*}—Specifies the local authentication bind method for the LDAP server. The anonymous method allows anonymous access to the LDAP server whereas the authenticated method requires that a username and password be entered to secure access. The default value is anonymous. The username can contain up to 80 characters.

  If the username starts with "cn=" (in lowercase letters), the controller assumes that the username includes the entire LDAP database path and does not append the user base DN. This designation allows the authenticated bind user to be outside the user base DN.
- **config ldap retransmit-timeout** *index timeout*—Configures the number of seconds between retransmissions for an LDAP server.

• Specify LDAP as the priority backend database server by entering this command:

config local-auth user-credentials ldap

If you enter the **config local-auth user-credentials ldap local command**, local EAP attempts to authenticate clients using the LDAP backend database and fails over to the local user database if the LDAP servers are not reachable. If the user is not found, the authentication attempt is rejected. If you enter the **config local-auth user-credentials local ldap command**, local EAP attempts to authenticate using only the local user database. It does not fail over to the LDAP backend database.

• (Optional) Assign specific LDAP servers to a WLAN by entering these commands:

- **config wlan ldap add** *wlan_id server_index*—Links a configured LDAP server to a WLAN.

  The LDAP servers specified in this command apply only to WLANs with web authentication enabled. They are not used by local EAP.
- **config wlan ldap delete** *wlan_id* {*all* | *index*}—Deletes a specific or all configured LDAP server(s) from a WLAN.

• View information pertaining to configured LDAP servers by entering these commands:

- **show ldap summary**—Shows a summary of the configured LDAP servers.

```
Idx  Server Address   Port  Enabled
---  ---------------  ----  -------
1    2.3.1.4           389    No
2    10.10.20.22       389    Yes
```

- **show ldap** *index*—Shows detailed LDAP server information. Information like the following appears:

```
Server Index..................................... 2
Address.......................................... 10.10.20.22
Port............................................ 389
Enabled......................................... Yes
User DN........................................... ou=active,ou=employees,ou=people,

    o=cisco.com
User Attribute................................... uid
User Type........................................ Person
Retransmit Timeout............................... 2 seconds
Bind Method ..................................... Authenticated
Bind Username................................ user1
```

- **show ldap statistics**—Shows LDAP server statistics.

```
Server Index..................................... 1
Server statistics:
  Initialized OK................................. 0
  Initialization failed.......................... 0
  Initialization retries......................... 0
  Closed OK...................................... 0
Request statistics:
  Received....................................... 0
  Sent........................................... 0
  OK............................................. 0
  Success........................................ 0
  Authentication failed.......................... 0
  Server not found............................... 0
  No received attributes......................... 0
  No passed username............................. 0
  Not connected to server........................ 0
  Internal error................................. 0
  Retries........................................ 0

Server Index..................................... 2
..
```

- **show wlan** *wlan_id*—Shows the LDAP servers that are applied to a WLAN.

- Make sure the controller can reach the LDAP server by entering this command:
  ping *server_ip_address*
- Save your changes by entering this command:
  save config
- Enable or disable debugging for LDAP by entering this command:
  debug aaa ldap {**enable | disable**}