

Resetting the LWAPP Configuration on a Lightweight AP (LAP)

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Introduction

This document explains how to manually set or reset the Lightweight Access Point Protocol (LWAPP) static configuration information on a Lightweight Access Point (LAP). This document assumes that the LAP has never joined a wireless LAN controller (WLC) or, if it has previously joined a controller, the default enable password Cisco on the AP has been changed.

Note: The recovery process for an AP that has previously joined a controller, but has not had its enable password changed while joined to the previous controller, is not covered by this document.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic knowledge of the configuration of LAPs and Cisco WLCs
- Basic knowledge of LWAPP

Refer to Understanding the Lightweight Access Point Protocol (LWAPP) for more information.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco 4400 WLC that runs firmware release 4.1.181.0
- Cisco Aironet 1240AG Series AP that runs version 12.3(7)JX5

This document applies only to these LAPs:

- Cisco Aironet 1240 AG Series
- Cisco Aironet 1230 AG Series

- Cisco Aironet 1200 Series
- Cisco Aironet 1130 AG Series
- Cisco Aironet 1100 Series

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Manually Configuring the LAP

In a new installation, when a LAP is unable to find a WLC using the discovery algorithms because DHCP is not enabled on the subnet, you can statically configure the information necessary to join a controller via the console port and the AP's CLI.

Note: The CLI commands in this section can be used on an AP that has never registered to a controller, or on an AP that had its default enable password changed while joined to a previous controller.

In order to manually configure static information on a LAP using the AP CLI interface, you can use these EXEC mode CLI commands:

```
AP#lwapp ap ip address <IP address> <subnet mask>
```

```
AP#lwapp ap ip default-gateway <IP-address>
```

```
AP#lwapp ap controller ip address <IP-address>
```

```
AP#lwapp ap hostname <name>  
(optional)
```

Note: You must issue these commands while in enable mode. The default enable password is Cisco.

The static information configured with the CLI commands is used by the AP to join a controller. After joining the controller, the user can configure new settings on the LAP via the controller.

Resetting the LWAPP Configuration on the LAP

When you move your AP to a different location in your network and the LAP cannot join the previous WLC, or if you want to manually reconfigure the AP to join another WLC, you have to enter the new controller information in order to allow your AP to associate with a different controller.

Once your LAP successfully registers with the WLC, the static LWAPP configuration commands (discussed in the previous section) are locked out and are no longer accessible. In order to re-enable the commands, you must have set the username and password while the LAP was joined to the previous controller.

When the LAP is registered to a controller, use this controller CLI command to set the AP's username and password:

```
config ap username <username> password <password> <ALL / AP Name>
```

Note: Currently, the AP does not use the username entered but will use the password to change the enable password on the AP.

Once you are into enable mode by using the password previously configured, you can use this command from the LAP CLI to clear the LWAPP configuration on the LAP:

```
clear lwapp private-config
```

This allows you to use the AP LWAPP static configuration commands again.

Here is an example:

```
Enable
  (enter password)

AP1240#clear lwapp private-config
AP1240#lwapp ap hostname AP1240
AP1240#lwapp ap ip address 10.77.244.199 255.255.255.224
AP1240#lwapp ap ip default-gateway 10.77.244.220
AP1240#lwapp ap controller ip address 172.16.1.50
```

Note: You cannot use the **clear lwapp private-config** command when the LAP is registered with the controller.

Note: When the LAP is registered to the controller, you can use these commands from the controller in order to reset the configuration on the LAP:

- Use the **clear ap-config <ap-name> keep-ip-config** command to clear all of the AP's configurations to default, except for the AP's static IP configuration.
- Use the **clear ap-config <ap-name>** command to clear all of the AP's configurations to default, which includes the AP's static IP configuration.

How to Disable the Reset Button on the AP Registered to the Controller

In order to disable the reset button on the AP registered to the controller, use this CLI command:

```
(Cisco Controller) >config ap rst-button disable <AP NAME>
```

Verify

You can use the **show lwapp ip config** command in enable mode to view the LWAPP configuration present on the LAP.

Here is an example:

```
AP1240#show lwapp ip config

LWAPP Static IP Configuration
IP Address          10.77.244.199
IP netmask          255.255.255.224
Default Gateway     10.77.244.220
Primary Controller  172.16.1.50
```

Troubleshoot

You can use this **debug** command on the LAP with a console port to troubleshoot the static configuration:

- **debug ip udp**

Note: If the AP has no console port, it is necessary to take a wired sniffer trace of the port that the LAP is plugged into to see what packets are being received by and transmitted to the LAP.

Here is an example of the **debug ip udp** command. This partial output gives an idea of the packets that are sent by the LAP during its boot process to join a controller.

```
UDP: sent src=10.77.244.199(20679), dst=10.77.244.208(12223)

!--- LWAPP Discovery Request sent to a controller to which
!--- the AP was previously registered to.

UDP: sent src=10.77.244.199(20679), dst=172.16.1.50(12223)

!--- LWAPP Discovery Request using the statically configured
!--- controller information.

UDP: sent src=10.77.244.199(20679), dst=255.255.255.255(12223)

!--- LWAPP Discovery Request sent using subnet broadcast.

UDP: sent src=10.77.244.199(20679), dst=172.16.1.51(12223)

!--- LWAPP Join Request sent to AP-Manager interface on
!--- statically configured controller.
```

As you can see from the debug output, the LAP tries to discover the WLC using the LWAPP discovery algorithms before selecting a WLC to join.

With this **debug** command, you can verify if the LAP is sending the discovery request to the controller and if the controller replied. The command also indicates the controller that the AP sends the Join Request to and whether that controller responds or not.

Note: For more information on the WLC discovery algorithms and the LAP registration process, refer to Lightweight AP (LAP) Registration to a Wireless LAN Controller (WLC).

On the WLC, you can use these commands to monitor the LWAPP Discovery and Join messages from the LAP:

- **debug lwapp event enable**
- **debug lwapp packet enable**

If you enter the **clear lwapp private-config** command, you might see this error message:

```
AP0017.5922.f384#clear lwapp private-config
ERROR!!! Command is disabled.
```

This error message indicates that the static configuration commands are locked out because either:

- This command was entered while the LAP is registered to a controller.
- The LAP was previously registered to a WLC, but the username/password was not changed from the

default.

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Related Information

- [Cisco Wireless LAN Controller Configuration Guide, Release 4.1](#)
- [DHCP OPTION 43 for Lightweight Cisco Aironet Access Points Configuration Example](#)
- [Wireless LAN Controller and Lightweight Access Point Basic Configuration Example](#)
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