Configuring Link Latency

Link Latency

You can configure link latency on the controller to measure the link between an access point and the controller. This feature can be used with all access points joined to the controller but is especially useful for FlexConnect and OfficeExtend access points, for which the link could be a slow or unreliable WAN connection.

The following are some guidelines for link latency:

- Link latency monitors the round-trip time of the CAPWAP heartbeat packets (echo request and response) from the access point to the controller and back. This time can vary due to the network link speed and controller processing loads. The access point timestamps the outgoing echo requests to the controller and the echo responses received from the controller. The access point sends this delta time to the controller as the system round-trip time. The access point sends heartbeat packets to the controller at a default interval of 30 seconds.

  Note Link latency calculates the CAPWAP response time between the access point and the controller. It does not measure network latency or ping responses.

- The controller displays the current round-trip time as well as a running minimum and maximum round-trip time. The minimum and maximum times continue to run as long as the controller is up or can be cleared and allowed to restart.
- You can configure link latency for a specific access point using the controller GUI or CLI or for all access points joined to the controller using the CLI.

This section contains the following subsections:

Restrictions for Link Latency

- Link latency is supported for use only with FlexConnect access points in connected mode. FlexConnect access points in standalone mode are not supported.

Configuring Link Latency (GUI)

Step 1 Choose **Wireless > Access Points > All APs** to open the All APs page.

Step 2 Click the name of the access point for which you want to configure link latency.

Step 3 Choose the **Advanced** tab to open the All APs > Details for (Advanced) page.

Step 4 Select the **Enable Link Latency** check box to enable link latency for this access point or unselect it to prevent the access point from sending the round-trip time to the controller after every echo response is received. The default value is unselected.

Step 5 Click **Apply** to commit your changes.

Step 6 Click **Save Configuration** to save your changes.

Step 7 When the All APs page reappears, click the name of the access point again.

Step 8 When the All APs > Details for page reappears, choose the **Advanced** tab again. The link latency and data latency results appear below the Enable Link Latency check box:

- **Current**—The current round-trip time (in milliseconds) of CAPWAP heartbeat packets or data packets from the access point to the controller and back.
- **Minimum**—Since link latency has been enabled or reset, the minimum round-trip time (in milliseconds) of CAPWAP heartbeat packets or data packets from the access point to the controller and back.
- **Maximum**—Since link latency has been enabled or reset, the maximum round-trip time (in milliseconds) of CAPWAP heartbeat packets or data packets from the access point to the controller and back.

Step 9 To clear the current, minimum, and maximum link latency and data latency statistics on the controller for this access point, click **Reset Link Latency**.

Step 10 After the page refreshes and the All APs > Details for page reappears, choose the **Advanced** tab. The updated statistics appear in the Minimum and Maximum text boxes.

Configuring Link Latency (CLI)

Step 1 Enable or disable link latency for a specific access point or for all access points currently associated to the controller by entering this command:

config ap link-latency {**enable** | **disable**} {*Cisco_AP* | **all**}

The default value is disabled.

Note The **config ap link-latency** {**enable** | **disable**} **all** command enables or disables link latency only for access points that are currently joined to the controller. It does not apply to access points that join in the future.

Step 2 See the link latency results for a specific access point by entering this command:

show ap config general *Cisco_AP*

Information similar to the following appears:

```
Cisco AP Identifier.............................. 1
Cisco AP Name.................................... AP1
...
AP Link Latency.................................. Enabled
 Current Delay................................... 1 ms
 Maximum Delay................................... 1 ms
 Minimum Delay................................... 1 ms
 Last updated (based on AP Up Time)............ 0 days, 05 h 03 m 25 s
```

The output of this command contains the following link latency results:

- **Current Delay**—The current round-trip time (in milliseconds) of CAPWAP heartbeat packets from the access point to the controller and back.
- **Maximum Delay**—Since link latency has been enabled or reset, the maximum round-trip time (in milliseconds) of CAPWAP heartbeat packets from the access point to the controller and back.
- **Minimum Delay**—Since link latency has been enabled or reset, the minimum round-trip time (in milliseconds) of CAPWAP heartbeat packets from the access point to the controller and back.

Step 3 Clear the current, minimum, and maximum link latency statistics on the controller for a specific access point by entering this command:

config ap link-latency reset *Cisco_AP*

Step 4 See the results of the reset by entering this command:

show ap config general *Cisco_AP*