



Configuring Optimized Roaming

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Information About Optimized Roaming

Optimized roaming resolves the problem of sticky clients that remain associated to access points that are far away and outbound clients that attempt to connect to a Wi-Fi network without having a stable connection. This feature disassociates clients based on the RSSI of the client data packets and data rate. The client is disassociated if the RSSI alarm condition is met and the current data rate of the client is lower than the optimized roaming data rate threshold. You can disable the data rate option so that only RSSI is used for disassociating clients.

Optimized roaming also prevents client association when the client's RSSI is low. This feature checks the RSSI of the incoming client against the RSSI threshold. This check prevents the clients from connecting to a Wi-Fi network unless the client has a viable connection. In many scenarios, even though clients can hear beacons and connect to a Wi-Fi network, the signal might not be strong enough to support a stable connection.

You can also configure the client coverage reporting interval for a radio by using optimized roaming. The client coverage statistics include data packet RSSIs, Coverage Hole Detection and Mitigation (CHDM) pre-alarm failures, retransmission requests, and current data rates.

Optimized Roaming is implemented in the following scenarios:

- Addresses the sticky client challenge by pro-actively disconnecting clients.
- Actively monitors Data RSSI packets.
- Disassociates client when the RSSI is lower than the set threshold.

Restrictions for Optimized Roaming

- You cannot configure the optimized roaming interval until you disable the 802.11a/b network.

Configuring Optimized Roaming (GUI)

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- Step 1** Choose **Wireless > Advanced > Optimized Roaming**. The Optimized Roaming page is displayed.
- Step 2** To enable optimized roaming for an 802.11 band, check the **Enable** check box. You can configure the optimized roaming interval and data rate threshold values only after you enable optimized roaming for an 802.11 band.
- Step 3** In the **Optimized Roaming Interval** text box, enter a value for the interval at which an access point reports the client coverage statistics to the controller. The client coverage statistics include data packet RSSIs, Coverage Hole Detection and Mitigation (CHDM) pre-alarm failures, retransmission requests, and current data rates. The range is from 5 to 90 seconds. The default value is 90 seconds.
- Note** You must disable the 802.11a/b network before you configure the optimized roaming reporting interval. If you configure a low value for the reporting interval, the network can get overloaded with coverage report messages. The access point sends the client statistics to the controller based on the following conditions:
- When **Optimized Roaming Interval** is set to 90 seconds by default.
 - When **Optimized Roaming Interval** is configured (for instance to 10 secs) only during optimized roaming failure due to Coverage Hole Detection (CHD) RED ALARM.
- Step 4** In the **Optimized Roaming Data Rate Threshold** text box, enter a value for the threshold data rate of the client. The following data rates are available:
- 802.11a—6, 9, 12, 18, 24, 36, 48, and 54.
 - 802.11b—1, 2, 5.5, 11, 6, 9, 12, 18, 24, 36, 48, and 54.

Optimized roaming disassociates clients based on the RSSI of the client data packet and data rate. The client is disassociated if the current data rate of the client is lower than the Optimized Roaming Data Rate Threshold.

What to Do Next

Optimized roaming checks the client RSSI at the time of an association. This RSSI value is verified against the configured CHDM RSSI with a 6 db hysteresis. To verify the RSSI threshold configured for coverage hole detection, choose **Wireless > 802.11a/n/ac** or **802.11b/g/n > RRM > Coverage** to open the 802.11a/ac (or 802.11b/g/n) > RRM > Coverage page.

Configuring Optimized Roaming (CLI)

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- Step 1** Enable optimized roaming by entering this command:
ap dot11 5ghz rrm optimized-roam

By default, optimized roaming is disabled.

Step 2 Configure the client coverage reporting interval for 802.11a networks by entering this command:

ap dot11 5ghz rrm optimized-roam reporting-interval *interval-seconds*

The range is from 5 to 90 seconds. The default value is 90 seconds.

Note You must disable the 802.11a network before you configure the optimized roaming reporting interval.

The access point sends the client statistics to the controller based on the following conditions:

- When the **reporting-interval** *interval-seconds* is set to 90 seconds by default.
- When the **reporting-interval** *interval-seconds* is configured (for instance to 10 secs) only during optimized roaming failure due to the Coverage Hole Detection (CHD) RED ALARM.

Step 3 Configure the threshold data rate for 802.11a networks by entering this command:

ap dot11 5ghz rrm optimized-roam data-rate-threshold *mbps*

For 802.11a, the configurable data rates are 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54. You can configure DISABLE to disable the data rate.

Step 4 View information about optimized roaming for each band by entering this command:

show ap dot11 5ghz optimized-roaming

```
(Cisco Controller) > show ap dot11 5ghz optimized-roaming
802.11a OptimizedRoaming
```

```
Mode : Disabled
Reporting Interval : 90 seconds
Rate Threshold : Disabled
```

Step 5 View information about optimized roaming statistics by entering this command:

show ap dot11 5ghz optimized-roaming statistics

```
(Cisco Controller) > show ap dot11 5ghz optimized-roaming statistics
802.11a OptimizedRoaming statistics
```

```
Disassociations : 0
Rejections : 0
```

