Optimized Roaming

Optimized roaming

Optimized roaming is a Wi-Fi network feature that

- 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
- disassociates clients based on the RSSI of the client data packets and data rate when the RSSI alarm condition is met and the current data rate of the client is lower than the optimized roaming data rate threshold, and
- prevents client association when the client's RSSI is low by checking the RSSI of the incoming client against the RSSI threshold.

Additional optimized roaming information

You can disable the data rate option so that only RSSI is used for disassociating clients.

This feature checks the RSSI of the incoming client against the RSSI threshold, which is configured in the same place as the Coverage Hole Detection. 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 useful in these scenarios:

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

Restrictions for optimized roaming

Lists the restrictions that apply when using the optimized roaming feature on Cisco wireless controllers.

- When basic service set (*BSS*) transition is sent to 802.11v-capable clients, and if the clients are not transitioned to other BSS before the disconnect timer expires, the corresponding client is disconnected forcefully. BSS transition is enabled by default for 802.11v-capable clients.
- The Cisco Catalyst 9800 controller increments the 80211v smart roam failed counter while disconnecting the client due to optimized roaming.
- We recommend that you do not use the optimized roaming feature with RSSI low check.

Configure optimized roaming (GUI)

Optimized roaming helps maintain optimal wireless client connectivity by managing when clients are disassociated based on RSSI and data rate thresholds.

Procedure

Step 1 Choose **Configuration** > **Wireless** > **Advanced**.

Step 2 Click the **Optimized Roaming** tab.

Step 3 Check the **Optimized Roaming Mode** check box in the **6 GHz Band**, **5 GHz Band**, or, **2.4 GHz Band** sections to enable the feature.

Note
Modifying the default settings for the **Optimized Roaming data rate** and CHDM RSSI configurations could result in unintended client connectivity problems. Ensure that you cautiously make updates to the default settings.

Step 4 Choose the required **Optimized Roaming Date Rate Threshold**. The threshold value options are different for 802.11a, 802.11b, and 802.11ax networks.

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.

Step 5 In the **Optimized Roaming Hysteresis** field, enter the hysteresis value. The the range is from 0 to 10. The default is 6.

Step 6 Click **Apply** to save the configuration.

Optimized roaming is configured and will manage client disassociation based on the specified thresholds and settings.

Configure optimized roaming (CLI)

Enable optimized roaming to improve client connectivity and reduce roaming delays by automatically triggering roaming decisions based on data rate thresholds.

Optimized roaming helps wireless clients move seamlessly between access points when their connection quality degrades below specified thresholds. This feature is particularly useful in high-density environments where clients need to maintain optimal connectivity.

Procedure

Step 1 Enter global configuration mode.

Example:

```
Device# configure terminal
```

Step 2 Configure 802.11a, 802.11b, or 802.11 6-GHz optimized roaming.

Example:

```
Device(config)# ap dot11 band rrm optimized-roam
```

Example:

```
Device(config)# ap dot11 24ghz rrm optimized-roam
```

By default, optimized roaming is disabled. The *band* can be 24-GHz, 5-GHz, or 6-GHz.

Step 3 Configure the data rate threshold for 802.11b for optimized roaming.

Example:

```
Device(config)# ap dot11 24ghz rrm monitor optimized-roam data-rate-threshold threshold-value
```

Example:

```
Device(config)# ap dot11 24ghz rrm monitor optimized-roam data-rate-threshold 18M
```

Valid threshold values for 24-GHz: 1M, 2M, 5_5M, 6M, 9M, 11M, 12M, 18M, 24M, 36M, 48M, 54M, or disable.

Step 4 Configure the data rate threshold for 802.11a or 802.11 6-GHz optimized roaming.

Example:

```
Device(config)# ap dot11 band rrm monitor optimized-roam data-rate-threshold threshold-value
```

Example:

```
Device(config)# ap dot11 6ghz rrm monitor optimized-roam data-rate-threshold 18M
```

Valid threshold values for 5-GHz and 6-GHz: 6M, 9M, 12M, 18M, 24M, 36M, 48M, 54M, or disable.

Step 5 Display the 802.11a, 802.11b, or 802.11 6-GHz optimized roaming configurations.

Example:

```
Device# show ap dot11 band optimized-roaming statistics
```

Example:

```
Device# show ap dot11 24ghz optimized-roaming statistics
```

Optimized roaming is now configured with the specified data rate thresholds, enabling automatic client roaming when connection quality degrades below the configured values.