Configuring Aggressive Load Balancing

Information About Configuring Aggressive Load Balancing

Enabling aggressive load balancing on the controller allows lightweight access points to load balance wireless clients across access points. You can enable aggressive load balancing using the controller.

Note   Clients are load balanced between access points on the same controller. Load balancing does not occur between access points on different controllers.

When a wireless client attempts to associate to a lightweight access point, association response packets are sent to the client with an 802.11 response packet including status code 17. The code 17 indicates that the AP is busy. The AP responds with an association response bearing 'success' if the AP threshold is not met, and with code 17 (AP busy) if the AP utilization threshold is reached or exceeded and another less busy AP heard the client request.

For example, if the number of clients on AP1 is more than the number of clients on AP2 plus the load-balancing window, then AP1 is considered to be busier than AP2. When a client attempts to associate to AP1, it receives an 802.11 response packet with status code 17, indicating that the access point is busy, and the client attempts to associate to a different access point.

You can configure the controller to deny client associations up to 10 times (if a client attempted to associate 11 times, it would be allowed to associate on the 11th try). You can also enable or disable load balancing on a particular WLAN, which is useful if you want to disable load balancing for a select group of clients (such as time-sensitive voice clients).

Note   Cisco 600 Series OfficeExtend Access Points do not support client load balancing.

With the 7.4 release, FlexConnect access points do support client load balancing.

You can configure the controller to analyze the WAN interface utilization of neighboring APs and then load balance the clients across the lightly loaded APs. You can configure this by defining a load balancing threshold. By defining the threshold, you can measure the WAN interface utilization percentage. For example, a threshold value of 50 triggers the load balancing upon detecting utilization of 50% or more on an AP-WAN interface.

Configuring Aggressive Load Balancing (GUI)

Step 1 Choose **Wireless** > **Advanced** > **Load Balancing** to open the Load Balancing page.

Step 2 In the Client Window Size text box, enter a value between 1 and 20.
The window size becomes part of the algorithm that determines whether an access point is too heavily loaded to accept more client associations:

load-balancing window + client associations on AP with the lightest load = load-balancing threshold

In the group of access points accessible to a client device, each access point has a different number of client associations. The access point with the lowest number of clients has the lightest load. The client window size plus the number of clients on the access point with the lightest load forms the threshold. Access points with more client associations than this threshold is considered busy, and clients can associate only to access points with client counts lower than the threshold.

Step 3 In the Maximum Denial Count text box, enter a value between 0 and 10.
The denial count sets the maximum number of association denials during load balancing.

Step 4 Click **Apply**.

Step 5 Click **Save Configuration**.

Step 6 To enable or disable aggressive load balancing on specific WLANs, do the following:
  a) Choose **WLANs** > **WLAN ID**. The WLANs > Edit page appears.
  b) In the **Advanced** tab, select or unselect the **Client Load Balancing** check box.
  c) Click **Apply**.
  d) Click **Save Configuration**.

Configuring Aggressive Load Balancing (CLI)

Step 1 Set the client window for aggressive load balancing by entering this command:
config load-balancing window *client_count*

You can enter a value between 0 and 20 for the *client_count* parameter.

Step 2 Set the denial count for load balancing by entering this command:
config load-balancing denial *denial_count*

You can enter a value between 1 and 10 for the *denial_count* parameter.

Step 3   Enter the **save config** command to save your changes.

Step 4   Enable or disable aggressive load balancing on specific WLANs by entering this command:
config wlan load-balance allow {**enable** | **disable**} *wlan_ID*

You can enter a value between 1 and 512 for *wlan_ID* parameter.

Step 5   Verify your settings by entering this command:
show load-balancing

Step 6   Enter the **save config** command to save your changes.

Step 7   Configure the load balance mode on a WLAN by entering this command:
config wlan load-balance mode {*client-count* | *uplink-usage*} *wlan-id*

This feature requires the AP to upload its uplink usage statistics to the controller periodically. Check these statistics by entering this command:

show ap stats system *cisco-AP*