Monitor Wi-Fi 6E and 6 Readiness

About Wi-Fi 6E and 6 Readiness and Its Benefits

You use the Wi-Fi 6E and 6 Readiness feature to determine the following:

- The percentage of clients that are Wi-Fi 6E and 6 capable.

- The percentage of AP infrastructure that is Wi-Fi 6E and 6 ready.

- Based on the preceding information, recommendations are provided about the actions that you can take to experience the full benefits of the Wi-Fi 6E and 6 network.

To provide these recommendations, Catalyst Center does the following:

- Assesses the Wi-Fi capabilities of wireless clients.

- Collects AP inventory to determine which of the APs are managed by Catalyst Center, and then assesses the Wi-Fi capabilities of those APs.

- Determines the types of wireless controllers that are in the network and whether the software that is installed on the wireless controllers is Wi-Fi 6E and 6 ready.

- Determines the wireless LAN configuration and whether are not Wi-Fi 6E and 6 features are enabled.

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Note Under certain conditions, Wi-Fi 6E wireless client latency or airtime efficiency data might be less optimal than Wi-Fi 6 or legacy Wi-Fi, regardless of the capability of the AP platforms. For example, Wi-Fi 6E might be less optimal when:

- Significantly more clients are connected to Wi-Fi 6E APs than to non-Wi-Fi 6E APs.

- There is more interference from poor RF design in the Wi-Fi 6E environment than in the non-Wi-Fi 6E environment.

- Clients connected to Wi-Fi 6E are positioned to have poor signal strength (RSSI).
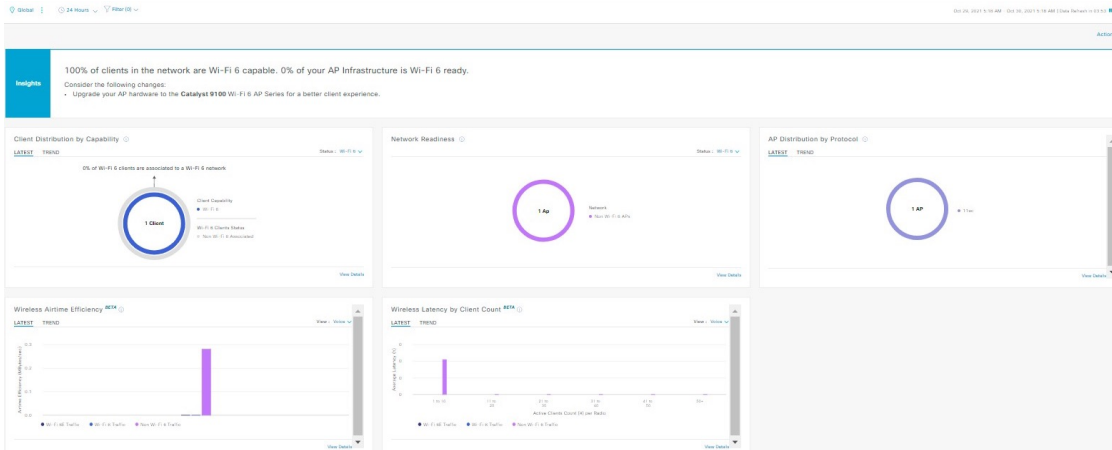
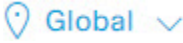The preceding scenarios also apply to Wi-Fi 6 versus legacy Wi-Fi.

Assure the Readiness of Your Wi-Fi 6E and 6 Network

Use this procedure to assure the readiness of your Wi-Fi 6E and Wi-Fi 6 network.

Step 1   From the top-left corner, click the menu icon and choose **Assurance** > **Wi-Fi 6**.

The **Wi-Fi 6** dashboard appears.

Step 2   Use the top-menu bar for the following functionality:

Item	Description
Global ⌄ **Location** pane	Click to display the following icons: • ☰ ▥ : Click this toggle button to display the **Hierarchical Site View** table. It provides the percentage of wireless clients and wireless network devices in a site. To view information for a particular building, choose **Building View** from the drop-down list. • ☰ ▥ : Click this toggle button to display the health of all the network sites on a geographic location-oriented network health map. By default, the network sites that are represented are color coded according to the severity of the problem.
🕐 **Time Range** setting	Enables you to display data within a specified time range on the dashboard. Do the following: a. From the drop-down menu, choose the length of the range: **3 Hours**, **24 Hours**, or **7 Days**. b. Specify the **Start Date** and time; and the **End Date** and time. c. Click **Apply**.
Filter icon	Contains the **SSID** and **Band** options. Choose the SSIDs and band frequency from the drop-down list by selecting the check boxes adjacent to them, and then click **Apply**. Depending on your selection, the information in the dashboard is refreshed.

Item	Description
Actions drop-down list	Enables you to export the dashboard to PDF format. Click **Export Dashboard** to view the preview page and click **Save**.
	Enables you to customize the dashboard display when you choose **Edit Dashboards** from the drop-down list. See Change the Position of a Dashlet and Create a Custom Dashboard.

Step 3   Use the **Insights** area to get an insight about your network. It provides the following information:

- The percentage of clients that are Wi-Fi 6E and Wi-Fi 6 capable.

- The percentage of AP infrastructure that is Wi-Fi 6E and Wi-Fi 6 ready.

- Based on the above information, recommendations on what actions you can take to enjoy the full benefits of the Wi-Fi 6E and Wi-Fi 6 network are provided.

Step 4   Use the **Client Distribution By Capability** dashlet to compare the distribution capability of clients between Wi-Fi 6E and Wi-Fi 6 and to determine if the Wi-Fi 6E or Wi-Fi 6 capable clients joined to the network.

Based on the AP to which the clients are associated, the clients might function at their Wi-Fi 6 capability or at a lesser capability. For example, a Wi-Fi 6 client associated to a 11ac AP will function as an 11ac client.

Client Distribution By Capability Dashlet

You can view all the clients that are associated with the wireless network based on the following status: **Wi-Fi 6E** and **Wi-Fi 6E**.

This dashlet includes the following tabs:

- **Latest**: Displayed by default.

    - The **outer** segment of the circle shows the number of Wi-Fi 6E capable clients joined (are associated with) the Wi-Fi 6E, Wi-Fi 6 and non Wi-Fi 6 network.

    - The **outer** segment of the circle shows the number of Wi-Fi 6 capable clients joined (are associated with) the Wi-Fi 6 and non Wi-Fi 6 network.

    - The **inner** circle shows the actual wireless capability of the clients joined to the network. The wireless clients are capable of functioning in one of the following protocols:

        - **Wi-Fi 6E**: 802.11ax 6 GHz capable client(s).

        - **Wi-Fi 6**: 802.11ax capable client(s).

        - **11ac**: 802.11ac Wave1 and Wave2 capable client(s).

        - **11n**: 802.11n capable client(s).

        - **11abg**: 802.11a, b, or g capable client(s).

        - **Unclassified**: The client is listed under **Unclassified** due to the following reasons:

            - The capabilities of the client device is not reported due to network delay.

            - The AP or wireless controller to which the client device is connected, does not have the correct software version installed.

    Hover your cursor over a color in the chart to display the number of clients associated with that color.

- **Trend**: Click the **Trend** tab to display a trend chart. This color-coded trend chart shows the number of the clients that are associated to Wi-Fi 6E, Wi-Fi 6, or non-Wi-Fi 6 protocols over a time range based on the chosen status (Wi-Fi 6E or Wi-Fi 6).

    Hover your cursor over the chart to display the total number of clients and their protocol for that specific day and time.

Click **View Details** to open a slide-in pane with additional details. From the slide-in pane, you can click a color segment in the chart to refresh the data in the table that is displayed below the chart.

Step 5 Use the **Network Readiness** dashlet to determine how many APs are Wi-Fi 6E and Wi-Fi 6 capable and are configured (enabled) to operate in Wi-Fi 6E or Wi-Fi 6 mode.

Network Readiness Dashlet

You can view all the clients that are associated with the wireless network based on a status of **Wi-Fi 6E** or **Wi-Fi 6E**.

- The **outer** segment of the circle shows the number of Wi-Fi 6E APs with the 6-GHz band enabled or Wi-Fi 6 APs with 11ax disabled.

  Note   Wi-Fi 6E APs can operate in Wi-Fi 6E mode only if the wireless controllers and APs are running a software version that supports 6 GHz band.

- The **inner** circle shows the number of APs that are Wi-Fi 6E, Wi-Fi 6, and non-Wi-Fi 6 (11ac/n/a/b/g) capable.

  Note   Wi-Fi 6 APs can operate in Wi-Fi 6 mode under the following conditions:

  - The 11ax configuration on the Wi-Fi 6 APs is enabled.

  - The wireless controllers and APs are running a software version that supports Wi-Fi 6 (11ax).

Click **View Details** to open a slide-in pane with additional details. From the slide-in pane, click a color segment in the chart; **AP** and **WLC** tabs display. Click the **AP** and **WLC** tabs to display Wi-Fi 6 readiness at radio and band levels, respectively.

Step 6   Use the **AP Distribution by Protocol** dashlet to determine the number of APs that have the hardware capability to support the Wi-Fi standards: Wi-Fi 6E, Wi-Fi 6, and 11 ac/n/a/b/g.

AP Distribution by Protocol Dashlet

This dashlet includes the following tabs:

- **Latest**: Displayed by default. It shows the number of APs that support Wi-Fi 6E, Wi-Fi 6 (11ax) protocol and the number of APs that support non-Wi-Fi 6 (11ac/n/a/b/g) protocols:

  - **Wi-Fi 6E**: 802.11ax 6 GHz band capable AP(s).

  - **Wi-Fi 6**: 802.11ax capable AP(s).

  - **11ac**: 802.11ac capable AP(s).

  - **11n**: 802.11n capable AP(s).

  - **11abg**: 802.11a/b/g capable AP(s).

  Hover your cursor over a color in the chart to display the number of APs associated with that color.

- **Trend**: Click the **Trend** tab to display a trend chart. This color-coded trend chart shows the number of the APs that are associated to the different protocols (Wi-Fi 6E, Wi-Fi 6 or non-Wi-Fi 6) over a time range.

  Hover your cursor over the chart to display the total number of APs and their protocol for that specific day and time.

Click **View Details** to open a slide-in pane with additional details. From the slide-in pane, you can click a color segment in the chart to refresh the data in the table that is displayed below the chart.

Step 7   Use the **Wireless Airtime Efficiency** dashlet to compare the Average Airtime Efficiency between Wi-Fi 6E, Wi-Fi 6 traffic and non-Wi-Fi 6 traffic for each of the access categories (voice, video, best effort, and background).

Wireless Airtime Efficiency Dashlet

You can view the wireless airtime efficiency for the following access categories: **Voice**, **Video**, **Best Effort**, **Background**, and **All**. Default is **Voice**.

This dashlet includes the following tabs:

- **Latest**: Displayed by default. The bar graph allows you to compare the average airtime efficiency (in units of Bytes per mill-seconds) between Wi-Fi 6E, Wi-Fi 6 traffic and non-Wi-Fi 6 traffic for the chosen access category.

  The spectrum is efficiently used if the APs radios can send more traffic (successful Bytes transmitted to the client) in less airtime (microseconds) than other networks under similar RF conditions. An efficient network might allow more video or voice calls.

  Traffic is classified as the following:

  - Wi-Fi 6E traffic is the traffic sent from Wi-Fi 6E APs to clients that are associated as Wi-Fi 6E.

  - Wi-Fi 6 traffic is the traffic sent from Wi-Fi 6 APs to clients that are associated as Wi-Fi 6.

  - Non-Wi-Fi 6 Traffic is the aggregate of the following:

    - Wi-Fi 6 APs to non-Wi-Fi 6 capable clients.

    - Non-Wi-Fi 6 APs to non-Wi-Fi 6 capable clients.

    - Non-Wi-Fi 6 APs to Wi-Fi 6 capable clients.

  Note   A Wi-Fi 6 capable client operates in non-Wi-Fi 6 mode when it connects to a non-Wi-Fi 6 AP.

- **Trend**: Click the **Trend** tab to display a trend chart. This color-coded trend chart shows the number of clients that are associated to the different wireless network modes (Wi-Fi 6E, Wi-Fi 6 or non-Wi-Fi 6) over a time range.

  Hover your cursor over the chart to display the total number of clients and their protocol for that specific day and time.

Click **View Details** to open a slide-in pane with additional details. From the slide-in pane, you can click a color segment in the chart to refresh the data in the table that is displayed below the chart.

Step 8   Use the **Wireless Latency by Client Count** dashlet to compare the Average Wireless Latency between Wi-Fi 6E, Wi-Fi 6 traffic and non-Wi-Fi 6 traffic for each of the access categories (voice, video, best effort, and background).

Typically, AP radios with a higher client count have more latency compared to radios with a lower client count under similar RF conditions.

Wireless Latency by Client Count Dashlet

You can view the wireless latency for the following traffic: **Voice**, **Video**, **Best Effort**, and **Background**. Default is **Voice**.

This dashlet includes the following tabs:

- **Latest**: Displayed by default. It provides the Average Wireless Latency comparison between the Wi-Fi 6E, Wi-Fi 6 and non-Wi-Fi 6 AP radios serving similar number of "active" clients. Wireless latency is measured by the time (microseconds) it takes for a packet to be successfully transmitted from an AP to the client.

  Note   Active clients count include those clients that are actively sending traffic for a given Access category and not just Associated clients.

- **Trend**: Click the **Trend** tab to display a trend chart. The trend chart displays the average wireless latency across all access categories.

Click **View Details** to open a slide-in pane with additional details. From the slide-in pane, you can click a color segment in the chart to refresh the data in the table that is displayed below the chart.