# Network

This chapter contains the following sections:



# Overview of the Topology Map and Tools

### About the Topology Map

Cisco Business Dashboard Lite looks for discovered devices for network connectivity details and then builds a graphical representation or topology from the information it gathered. The data collected includes:

- CDP & LLDP neighbor information
- Multicast DNS and DNS Service Discovery (aka Bonjour)

This information determines how the network is constructed. When the network contains network infrastructure devices that are not manageable for any reason, Cisco Business Dashboard Lite will attempt to understand the topology based on the information that can be collected.

Click on devices or links in the topology to display the **Basic Info** panel for that device or link. This panel provides more detailed information about the device or link, and allows you to carry out different actions on a device.

**Overlays** and **Filters** are displayed on top of the Topology Map, allowing you to limit the devices displayed in the topology by device type or by tag. It also allows you to enhance the topology to show additional information such as the traffic load on links or how a particular VLAN is configured in the network.

### Accessing the Topology Map

To access the **Topology Map** open the **Network** panel from the **Navigation** pane.

The **Topology** is displayed in the work pane.

### Topology Controls

The Topology controls are located to the left of the **Topology Map**.

| Icon | Description |
|---|---|
|  | **Zoom in** - Adjusts the **Topology** window's view. Click the **+** (plus) icon on the menu bar to increase the size of the network in the viewing area. |
|  | **Zoom out** - Adjusts the **Topology** window's view. Click the **−** (minus) icon to reduce the size of the network in the viewing area. |
|  | Click **Re-layout Topology** to redraw the topology using the automatic layout algorithm.<br>If a device is selected in the topology when the button is clicked, then that device will be designated as the root of the topology tree when the layout is calculated. To select a device, click on the device icon and an orange circle will be shown around the device. |
|  | Click **Fit stage** to zoom until the entire network fills the viewing area. |
|  | Click **Enter full screen mode** to fill the screen with the Cisco Business Dashboard user interface. |
|  | Click **Export Topology** to export the current topology view as an image in PNG format. The image will be saved to the default download location for the browser. |
|  | Click **Topology Settings** to adjust labels displayed for topology icons and to select layout (Vertical Tree, Horizontal Tree, Star), link line style (Curve or Straight), and link line thickness (Consistent or Link Speed Based). |

### Topology Icons

The following icons appear in the **Topology** window:

| Icon | Description |
|---|---|
|  | **Access Point** |
|  | **Access Point - Primary** |
|  | **Access Point - Mesh Extender** |
|  | **Cloud** - This represents a network or part of a network that is not managed by Cisco Business Dashboard. |

| Icon | Description |
|---|---|
|  | **Links** - Links are connection lines between devices. Click a link to display the target and the source device names and other basic details such as speed and so on. |
|  | **Router** |
|  | **Switch** |
|  | **Switch Stack** |

### Overlays & Filters

It is at the top of the Topology screen, next to the **Search** box.

| Item | Description |
|---|---|
| **Select Overlay** | This feature enhances the **Topology** map with additional information based on the view selection. It can be one of the following:<br>• The **Link Utilization View** identifies current network performance by monitoring the amount of traffic. This traffic is displayed using the color coded links in the **Topology** map. The color coding changes based on the percentage utilization of the link. Green represents links that are only moderately loaded, while orange and red represent links that are approaching capacity limits.<br>Controls are provided to allow you to adjust the thresholds for different colors.<br>• The **VLAN View** displays where a VLAN is enabled in the network. This can be used to identify a partitioned VLAN or other misconfiguration.<br>When you select **VLAN View** in the Overlay drop-down, a second drop-down box appears below this field where you can select the VLAN ID to be displayed.<br>• The **POE View** highlights links in the topology map which indicates devices that are currently being powered from a POE-enabled switch. |
| **Select Tag** | Specify a **Device Tag** in the text box below the **Select Tag** to filter the topology to show devices matching the specified tag. Device tags are assigned in the **Detailed Info** panel. |

| Item | Description |
|---|---|
| **Show only:**<br>• **Routers**<br>• **Switches**<br>• **Wireless**<br>• **Unmanaged Networks**<br>• **Hosts**<br>• **Others** | Check the check box against the devices in the list that you want to view in the **Topology** map. This feature helps you filter the devices you want to view in the map and removes the ones that are unchecked in the device list. |

### Network Actions

Use the **Network Actions** drop-down list to select actions that can be performed on all devices in the network that support that action. For example, you can backup all network device configurations with a single click. Network actions may optionally be scheduled to take place at a later time. Available network actions which can be performed on all network devices are as follows:

- Backup Network Config
- Upgrade All Devices Firmware
- Save Network Running Config
- Delet Offline Devices

# Viewing Basic Device Information

Click on a network device such as a switch or a router, or a link connecting two devices, to view basic information about the device including outstanding notifications, and actions that may be performed.

The **Basic Info** panel also provides access to more detailed information for a device, and allows you to directly access the administration interface of the device.

The table in the following section provides the type of device details that are displayed. To view the basic device information follow the steps below.

### Procedure

**Step 1** In the Topology map, click on a network device such as a switch or a router to view the details.

**Step 2** In the **Basic Info** panel, the device details are displayed under the **Overview** tab. Each of these items are described in the following table.

| **Information Panel** | |
|---|---|
| **Model** | Model name of the device. |

| | |
|---|---|
| **Description** | Device or product description. |
| **Firmware Version** | The firmware version of the device. |
| **PID VID** | Product ID and the Version ID. |
| **MAC Address** | The *Media Access Control (MAC)* address is a standardized data link layer address that is required for certain network interface types. These addresses are specific and unique to each device and are not used by other devices in the network. |
| **Serial Number** | The device serial number. |
| **Status** | The online / offline status of the device. |
| **Domain** | The domain name of the device. |
| **Vendor** | The manufacturer of the device. |

| | |
|---|---|
| **Notification Panel** | **Notifications Panel Header**—The notifications panel header shows summary counts of the outstanding notifications for the device.<br>**Notifications Panel Body**—The body of the notifications panel lists the outstanding notifications for the device. Check the check box against a notification to acknowledge it and remove it from the list of notifications. You may use notification filtering to display acknowledged notifications if needed. |
| **Events Panel** | The Events Panel shows a list of all notifications and other events that have occurred over the past 24 hours for this device. To view and filter a complete list of all events for all devices, visit the Event Log. |
| **POE Panel** | The POE Panel is displayed on POE enabled switches and provides a summary of the power usage across each of the ports in the device. |
| **Stack Information Panel** | The Stack Information panel is displayed for switch stacks, and shows the hardware details for each member of the stack, including model information, serial number and MAC address |
| **Connected Device Panel** | Host, AP, IP Phone and IP Camera devices include the **Connected Device** panel. This panel shows how the device is attached to the network, listing the upstream network device and, where applicable, port that the device is connected to. |

In addition to the **Overview** tab, the **Basic Info** panel also has an **Actions** tab that allows you to perform various operational tasks on the device.

# Viewing Detailed Device Information

### Procedure

**Step 1** On the **Topology** or **Inventory** page, click on a network device such as a switch or a router for which you want to view detailed information.

**Step 2** In the **Basic Info** panel, click **Details** at the upper right corner.

**Step 3** In the **Detailed Info** panel, you will find a detailed list of device information on the left, and additional functions under the following tabs:

- **Dashboard**—Displays a series of dashboard widgets specific to the device
- **Port Management**—Allows you to manage the configuration of the switch ports

  **Note**
  This information is available only for devices with switch ports.

- **Wireless LANs**—Allows you to view the Wireless LANs and manage the radio configuration on the device.

  Each radio may be enabled or disabled, and the channel and transmit power controlled from this tab.

  **Note**
  This information is available only for wireless devices.

- **Notifications**— Provides a list of active notifications for this device.
- **Event Log**—Provides a list of past actions and notifications for this device
- **Config Backups**—Allows you to view a list of backup configuration of the devices and perform actions such as restore, save or delete configuration

  **Note**
  This information is available only for devices that support the Backup Configuration operation

- **Pending Config**—Compares the desired configuration based on the configuration profiles defined with the current configuration on the device and highlights any differences.

  **Note**
  This panel is only displayed for devices supported for configuration operations.

- IP Interfaces - Allows you to view all IP interfaces and associated IP addresses.

  **Note**
  This information is available only for Cisco Catalyst 1200/1300 series switches, Cisco Business 220/250/350 series switches, and Cisco 250/350/550 series switches.

Each of these are described in the following steps:

**Step 4** A detailed list of information about the device is displayed on the left. This list contains the following information:

| Item Name | Description |
|---|---|
| **Hostname** | Click **Edit** next to the device name to modify the device hostname. Click **Save** to save the changes. |
| **Model** | Model name of the device. |
| **MAC Address** | The *Media Access Control (MAC)* address is a standardized data link layer address that is required for certain network interface types. These addresses are specific and unique to each device and are not used by other devices in the network. |
| **Status** | Displays the current status of the device. For example, online or offline. |
| **Actions** | The **Actions** drop-down and **Open Device GUI** icon allow you to act on the device from the **Detailed Info** panel. |
| **IP** | The IP Addresses of the device. |
| **Domain** | The domain name of the device. |
| **PID VID** | Product ID and the Version ID. |
| **Serial Number** | The serial number of the device. |
| **Vendor** | The manufacturer of the device. |
| **Description** | Device or product description. |
| **TAGs** | In the TAGs field, enter any alphanumeric characters and then press **Enter** to create new tags for this device. To delete an existing tag, click on the ✖ in the tag. Click **Save** to save the changes.<br>Tags may be used to help identify devices with common characteristics. You may use tags elsewhere in Cisco Business Dashboard Probe to restrict views of the network to displaying a subset of devices. |
| **Discovery Method** | Displays the protocols and devices by which this device was discovered. |
| **Pending Config** | Displays the status of the device configuration and whether there are any differences between the current config for the device and the expected config. |

**Step 5** Click **Dashboard** to display a set of widgets showing the current state of the device.

**Step 6** Use the form to make changes, then click **Save** to apply the changes.

**Step 7** Click **Port Management** to view and manage the configuration of the switch ports on the device. A visual representation of the device is displayed, similar to that shown in the **Port Management** page.

This window specifies the port details of the device in a visual representation. The model and serial number of the device are displayed above the image and a tabular view of the ports is displayed underneath.

**Step 8** Click **WLAN** to manage the radio settings and view the Wireless LANs configured on this device.

**Step 9** Click **Event Log** to see a list of historical notifications and other events that are recorded for this device. You can use filters to limit the entries that are displayed.

**Step 10** Click **Config Backups** to view and manage configuration backups for this device. On this tab, you will see a table listing each backup stored on the Probe, with the following details:

*Table 1: Config Backups*

| Item | Description |
|---|---|
| **Timestamp** | The date and time the configuration backup was taken. |
| **Comment** | The notes entered by the user at the time the backup was performed. |
| **Backed up by** | The user who performed the configuration. |
| **Actions** | Choose one of the following backup actions:<br>• **Restore configuration to device**—Restores the selected backup to the device<br>• **Save configuration to PC**—Saves the backup as a zip file to your local drive on your PC<br>• **Delete configuration**—Removes the backup<br>• **View configuration**—Helps view the contents of the configuration backup in the browser |

You may also trigger a config backup from the tab by clicking **Backup Configuration**.

**Step 11** Click **Pending Config** to view a side-by-side comparison between the current device config and the expected configuration based on the configuration profiles applied to the device. Configurations are represented in a device-independent format and any differences are highlighted. You may use the buttons at the top of the page to apply any outstanding changes, accept the current device configuration, or re-read the current device configuration. You may click the Reapply Network Configuration button to reapply selected network configuration profiles to this device.