



Troubleshooting

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About Troubleshooting

Cisco Extensible Network Controller (XNC) includes a variety of tools that you can use to troubleshoot your network connections. From the **Troubleshoot** tab, you can do the following:

- View all of the nodes in the network.
- View detailed information about the ports for each node in the network.
- View detailed information about the flows for each node in the network.
- View when the nodes were discovered by Cisco Extensible Network Controller (XNC) in the **Uptime** tab.
- View detailed information about TIF policies in the **Policy Analyzer** tab.
- Run analytics on selected flows and TIF policies.

Viewing Flow and Port Detail Statistics

- Step 1** On the menu bar, choose **Troubleshoot**, and then click the **Flow Check** tab.
- Step 2** In the **Existing Nodes** tab, locate the node for which you want to view statistics. Enter a value in the **Search** combo box and click the search icon to limit the number of entries that appear.
- Step 3** Perform one of the following tasks:
- Click **Flows** to view detailed information about all flows programmed on the node.
 - Click **Ports** to view detailed information about all ports of the node.

Note The statistics are updated every 120 seconds.

Viewing Inconsistent Controller Flows or Inconsistent Node Flows

- Step 1** In the menu bar, choose **Troubleshoot**, and then click the **Flow Check** tab.
- Step 2** From the **Select a node** drop-down list, choose a node. The node is displayed, with the number of **Inconsistent Controller Flows** and **Inconsistent Node Flows**, if any, next to each type.
- Step 3** Click either **Inconsistent Controller Flows** or **Inconsistent Node Flows** to view details for any inconsistent flows. Details are displayed in the **Statistics** tab.
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What to Do Next

Fix inconsistent controller flows or inconsistent node flows.

Exporting Inconsistent Flow Details

In order to view and save inconsistent controller or inconsistent node flow details for reference, you can export them to a comma-delimited file.

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- Step 1** In the menu bar, choose **Troubleshoot**, and then click the **Flow Check** tab.
- Step 2** Choose a node from the **Select a node** drop-down list.
The node is displayed, with the number of **Inconsistent Controller Flows** and **Inconsistent Node Flows** next to each type.
- Step 3** Choose either **Inconsistent Controller Flows** or **Inconsistent Node Flows**.
The list of **Inconsistent Controller Flows** or **Inconsistent Node Flows** is displayed in the **Statistics** tab.
- Step 4** Check the check box next to one or more inconsistent flows, or check the check box at the top of the list to choose all flows in the list.
- Step 5** Click **Export All**, and then click **Export Flow Details**.
- Step 6** Save the inconsistent flow detail information as a `.csv` file that you can open later for analysis.
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Fixing Inconsistent Flows



Note When you fix an inconsistent controller flow, the flow is installed on the switch. When you fix an inconsistent node flow, the flow is removed from the switch, because the controller is the authoritative source of flow information.

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- Step 1** In the menu bar, choose **Troubleshoot**, and then click the **Flow Check** tab.
- Step 2** Choose a node from the **Select a node** drop-down list.
The node is displayed, with the number of **Inconsistent Controller Flows** and **Inconsistent Node Flows** next to each type.
- Step 3** Click either **Inconsistent Controller Flows** or **Inconsistent Node Flows**.
The list of **Inconsistent Controller Flows** or **Inconsistent Node Flows** is displayed in the **Statistics** tab.
- Step 4** Check the check box next to one or more inconsistent flows, or check the check box at the top of the list to choose all flows in the list.
- Step 5** Click **Fix Inconsistent Flows**.
- Step 6** In the **Fix Flows** confirmation dialog box, click **Fix Inconsistent Flows**.
The **Flow Check** tab redisplayes **Inconsistent Controller Flows** and **Inconsistent Node Flows** with the updated number of each type.
- Note** If you chose all inconsistent flows in Step 4, the number displayed is 0.

Policy Analyzer

The Policy Analyzer allows you to view detailed information about TIF policies. You can use the Policy Analyzer to perform the following tasks:

- Monitor selected flows.
- Run a software-defined networking (SDN) trace against a flow.
- View the status of the last SDN trace.
- View aggregated statistics for the TIF policy.

Using the Policy Analyzer

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- Step 1** On the menu bar, choose **Troubleshoot**, and then click the **Policies** tab.
- Step 2** Choose the TIF policy that you want to analyze.
Enter a value in the **Search** combo box and click the search icon to limit the number of entries that appear.
- Step 3** Monitor the TIF policy flows as follows:
- a) Check the check box for one or more flows.
 - b) Click **Start Monitor**.
 - c) When you have finished collecting flow data, click **Stop Monitor**.
- Step 4** Run an SDN trace on a TIF policy flow as follows:
- a) Check the check box for the flow that you want to trace.
 - b) Click **SDN Trace**.
- Step 5** Click **SDN Trace Status** to view the information from the last SDN trace that was run.
- Step 6** Click **Policy Statistics** to view statistics for the selected TIF policy.
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SDN Analyzer

The SDN Analyzer downloads packet capture (pcap) files for the interface that you select. The individual pcap files are consolidated into one zip file.

By default, the SDN Analyzer captures 5 pcap files with 100 MB of network data each. If more than the set amount of data is captured, the earlier data is overwritten. You can change the amount of data collected in the `config.ini` file.

Using the SDN Analyzer

The SDN Analyzer captures packets that come to Cisco Extensible Network Controller (XNC) and outputs the results to a zip file. The location of the zip file depends upon your browser settings.

Before You Begin

You must have root privileges on the server that is running Cisco Extensible Network Controller (XNC) to run the SDN Analyzer.

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- Step 1** On the menu bar, click **Troubleshoot**, and then click the **SDN Analyzer** tab.
- Step 2** Click the interface that you want to view, and then click **Start Analyzer**.
- Step 3** When you have finished collecting data, click **Stop Analyzer**.
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Changing the Default Values for the SDN Analyzer

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- Step 1** Navigate to the `xnc/configuration` directory that was created when you installed the software.
- Step 2** Use any text editor to open the `config.ini` file.
- Step 3** Locate the following parameters:
- `troubleshoot.fileSize = 100`
 - `troubleshoot.number = 5`
- Step 4** Change the files as appropriate. We recommend that you use a file size of no more than 100mb, and increase the number of pcap files.
- Step 5** Save the file and exit the editor.
- Step 6** Restart Cisco Extensible Network Controller (XNC).
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