



## Manage Reports

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## Reports Overview

Cisco EPN Manager reports provide information about system and network health as well as fault information. You can customize and schedule reports to run on a regular basis. Reports can present data in a tabular, or graphical format (or a mixture of these formats). You can also save reports in CSV or PDF format. The CSV or PDF files can be saved on the Cisco EPN Manager server for later download, or sent to an e-mail address.

Cisco EPN Manager provide the following type of data:

- **Current**—Provides a snapshot of data that is not time-dependent.
- **Historical**—Periodically retrieves data from the device and stores it in the Cisco EPN Manager database.
- **Trend**—Generates a report using aggregated data, which is collected and summarized as minimums, maximums, and averages.

With Cisco EPN Manager, you can filter these reports based on a specific criteria. For example, IPSLA Y.1731 reports can be filtered based on probes and PWE3 reports can be filtered based on Virtual Connection Identifier (VCID). You can also export reports, sort reports into logical groups, and archive reports for long-term storage.

## Compress Report Files

You can choose to compress reports that exceed a particular file size limit. By default, any report that is larger than 5 MB is compressed in a zip format. To change the file size limit, update the variable `minSizeToCompressFile` in the `ReportResources.properties` file.

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- Step 1** Log in to Cisco EPN Manager as a CLI admin user (see [Establish an SSH Session With the Cisco EPN Manager Server](#)).
- Step 2** Open the `ReportResources.properties` file.  
File path - `/opt/CSColumos/conf/rfm/classes/com/cisco/server/resources/ReportResources.properties`
- Step 3** Update the `minSizeToCompressFile` with the required value (in bytes).  
For example, if you wish to compress files larger than 7MB, update the variable as:  
`minSizeToCompressFile=7340032`
- Step 4** Save the file.
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You need to restart Cisco EPN Manager for this change to take effect.

## Available Reports

The Reports Launch Pad provides access to the following Cisco EPN Manager reports:

- [Carrier Ethernet Performance Reports, on page 2](#)
- [Optical Performance Reports, on page 10](#)
- [Performance Reports, on page 15](#)
- [Network Summary Reports, on page 15](#)
- [Device Reports, on page 16](#)

## Carrier Ethernet Performance Reports

This section lists the Carrier Ethernet (CE) Performance reports supported by Cisco EPN Manager. It also includes the monitoring policies that must be enabled so that the proper report data is collected. For more information about monitoring policies, see [How Device Health and Performance Is Monitored: Monitoring Policies](#).

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
IPSLA Graphs	Graphical representation of average delay backward, average delay forward, average delay two-way, jitter forward, jitter backward, average backward packet loss ratio, average forward packet loss ratio, and availability.	<i>IPSLA</i> For details about the IPSLA monitoring policy, see <a href="#">IP SLA Monitoring Policy</a> .	Response Time Avg, Response Time Max, Response Time Min, Jitter Neg DS Avg, Jitter Neg SD Avg, Jitter Pos DS Avg, Jitter Pos SD Avg, Packet Loss Overall Util Avg, Packet Loss DS Util Avg, Packet Loss SD Util Avg, Latency One Way SD Avg, Latency One Way SD Max, Latency One Way SD Min, Latency One Way DS Avg, Latency One Way DS Max, Latency One Way DS Min

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
IPSLA Statistics	Tabular representation of probe index, IPSLA probe type, TOS, target IP, VRF name, average delay two-way, average delay forward, average delay backward, packet loss ratio forward, packet loss ratio backward, average jitter forward, average jitter backward, average backward packet loss ratio, average forward packet loss ratio, and availability.	<i>IPSLA</i> For details about the IPSLA monitoring policy, see <a href="#">IP SLA Monitoring Policy</a> .	Jitter Neg DS Avg, Jitter Neg SD Avg, Jitter Pos DS Avg, Jitter Pos SD Avg, Packet Loss Overall Util Avg, Packet Loss DS Util Avg, Packet Loss SD Util Avg, Latency One Way SD Avg, Latency One Way SD Max, Latency One Way SD Min, Latency One Way DS Avg, Latency One Way DS Max, Latency One Way DS Min
IPSLA Top N	Tabular representation of probe index, IPSLA probe type, TOS, target IP, VRF name, average delay two-way, maximum delay two-way, minimum delay two-way, average delay forward, maximum delay forward, minimum delay forward, average delay backward, maximum delay backward, minimum delay backward, average forward packet loss ratio, average backward packet loss ratio, jitter forward, jitter backward and availability.	<i>IPSLA</i> For details about the IPSLA monitoring policy, see <a href="#">IP SLA Monitoring Policy</a> .	Response Time Avg, Response Time Max, Response Time Min, Jitter Neg DS Avg, Jitter Neg SD Avg, Jitter Pos DS Avg, Jitter Pos SD Avg, Packet Loss Overall Util Avg, Packet Loss DS Util Avg, Packet Loss SD Util Avg, Latency One Way SD Avg, Latency One Way SD Max, Latency One Way SD Min, Latency One Way DS Avg, Latency One Way DS Max, Latency One Way DS Min

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
IPSLA Y.1731 Graphs	<p>Graphical representation of average delay backward, average delay forward, jitter two-way, jitter forward, jitter backward, average backward frame-loss ratio, average forward frame-loss ratio, and availability of the Y.1731 probe.</p> <p><b>Note</b> A value of –1 in <i>Probe Index</i> column indicates that the device does not have a Probe Index configured.</p>	<p><i>IPSLA Y.1731</i></p> <p>For details about the IPSLA Y.1731 monitoring policy, see <a href="#">IP SLA Y.1731 Monitoring Policy</a>.</p>	<p>Average Delay Two Way, Average Delay Forward, Average Delay Backward, Average Positive Jitter Forward, Average Negative Jitter Forward, Average Positive Jitter Backward, Average Negative Jitter Backward, Average Forward Frame Loss Ratio, Average Backward Frame Loss Ratio</p>
IPSLA Y.1731 Statistics	<p>Tabular representation of operation type, CFM domain, source, destination, frame type, average delay two-way, average delay forward, average delay backward, average jitter, forward frame loss ratio, backward frame loss ratio, average forward jitter, average backward jitter, and availability of the Y.1731 probe.</p>	<p><i>IPSLA Y.1731</i></p> <p>For details about the IPSLA Y.1731 monitoring policy, see <a href="#">IP SLA Y.1731 Monitoring Policy</a>.</p>	<p>Average Delay Two Way, Average Delay Forward, Average Delay Backward, Average Forward Frame Loss Ratio, Average Backward Frame Loss Ratio, Average Jitter</p>

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
IPSLA Y.1731 Top N	Tabular representation of operation type, CFM domain, source, destination, frame type, average delay two-way, maximum delay two-way, minimum delay two-way, average delay forward, maximum delay forward, minimum delay forward, average delay backward, maximum delay backward, minimum delay backward, average forward frame loss ratio, maximum forward frame loss ratio, minimum forward frame loss ratio, average backward frame loss ratio, maximum backward frame loss ratio, minimum backward frame loss ratio, jitter forward, jitter backward, and availability of the devices that are configured using the Y.1731 technology.	<i>IPSLA Y.1731</i> For details about the IPSLA Y.1731 monitoring policy, see <a href="#">IP SLA Y.1731 Monitoring Policy</a> .	Average Delay Two Way, Average Delay Forward, Average Delay Backward, Average Positive Jitter Forward, Average Negative Jitter Forward, Average Positive Jitter Backward, Average Negative Jitter Backward, Average Forward Frame Loss Ratio, Average Backward Frame Loss Ratio
Interface Availability	Displays the interface details for the devices in the network.	<i>Interface Health</i> For details about the Interface Health monitoring policy, see <a href="#">Interface Health Monitoring Policy</a> .	Statistics
Interface Graphs	Graphical representation of the interface traffic statistics over time: in traffic, out traffic, in utilization and out utilization.	<i>Interface Health</i> For details about the Interface Health monitoring policy, see <a href="#">Interface Health Monitoring Policy</a> .	Statistics

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Interface Top N	Tabular representation of Top N reports of interface traffic statistics: maximum in traffic, average in traffic, maximum out traffic, average out traffic, maximum in utilization, maximum out utilization and current in utilization, current out utilization, in errors, out errors, in discards, out discards and interface availability.	<i>Interface Health</i> For details about the Interface Health monitoring policy, see <a href="#">Interface Health Monitoring Policy</a> .	Statistics
Interface Traffic	Tabular representation of interface traffic statistics: in traffic rate, out traffic rate, in utilization, out utilization, in errors, out errors, in discards, out discards, in packets rate, out packets rate (including L3 packets), CRC errors and percentage.	<i>Interface Health</i> For details about the Interface Health monitoring policy, see <a href="#">Interface Health Monitoring Policy</a> .	Statistics and CRC
Link Optical SFP Power Level	Tabular representation of the A end device, A end interface, Z end device, Z end interface, and their Tx and Rx power levels.  <b>Note</b> The prerequisite for this report is to have CDP/LLDP enabled links in the network.	<i>Optical SFP</i> For more details about the Optical SFP monitoring policy, see <a href="#">Optical SFP Monitoring Policy</a> .	Optical Tx Power, Optical Rx Power

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Link Utilization	<p>Tabular representation of A device name, A interface name, A member of, A end in utilization, A end out utilization, A end capacity, Z device name, Z interface name, Z member of, Z end in utilization, Z end out utilization, Z end capacity, event time, and the interface utilization of the interfaces participating in the link, including the link aggregate group they belong to.</p> <p><b>Note</b> The prerequisite for this report is to have CDP/LLDP enabled links in the network.</p>	<p><i>Interface Health</i></p> <p>For details about the Interface Health monitoring policy, see <a href="#">Interface Health Monitoring Policy</a>.</p>	Statistics
MPLS Link Statistics	Representation of link delay and jitter in MPLS segment routing.	<p><i>MPLS Link Performance</i></p> <p>For more details about the MPLS monitoring policy, see <a href="#">MPLS Link Performance Monitoring Policy</a>.</p>	Average Delay, Min Delay, Max Delay, RX Packets, TX Packets
Optical SFP interface	Tabular representation of transmit/receive power levels of the devices for interfaces. Includes device name, interface name, RxPower, TxPower, EVENTTIME.	<p><i>Optical SFP</i></p> <p>For more details about the Optical SFP monitoring policy, see <a href="#">Optical SFP Monitoring Policy</a>.</p>	Optical Tx Power, Optical Rx Power

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
PWE3 Statistics	Tabular representation of PWE3 traffic and availability statistics including device name, IP address, VC ID, peer address, VC type, current in bit rate, current out bit rate, current in byte rate, current out byte rate, current in packet rate, current out packet rate, global availability, in availability and out availability.	<i>Pseudowire Emulation Edge to Edge</i>  For details about the Pseudowire Emulation Edge to Edge monitoring policy, see <a href="#">Pseudowire Emulation Edge to Edge Monitoring Policy</a> .	PW VC Perf Total In HC Packets Rate, PW VC Perf Total In HC Bytes Rate, PW VC Perf Total Out HC Packets Rate, PW VC Perf Total Out HC Bytes Rate, PW VC Oper Status Up, PW VC Inbound Oper Status Up, PW VC Outbound Oper Status Up, PW VC Oper Status Down, PW VC Perf Total In HC Packets, PW VC Perf Total In HC Bytes, PW VC Perf Total Out HC Packets, PW VC Perf Total Out HC Bytes, PW VC Inbound Oper Status Down, PW VC Outbound Oper Status Down
PWE3 Top N	Tabular representation of Top N reports of PWE3 statistics including device name, IP address, VC ID, peer address, VC type, average in byte rate, average out byte rate, maximum in byte rate, maximum out byte rate, average in bit rate, average out bit rate, maximum in bit rate, maximum out bit rate, average in packet rate, average out packet rate, maximum in packet rate, maximum out packet rate, global inbound availability and global outbound availability.	<i>Pseudowire Emulation Edge to Edge</i>  For details about the Pseudowire Emulation Edge to Edge monitoring policy, see <a href="#">Pseudowire Emulation Edge to Edge Monitoring Policy</a> .	PW VC Perf Total In HC Packets Rate, PW VC Perf Total In HC Bytes Rate, PW VC Perf Total Out HC Packets Rate, PW VC Perf Total Out HC Bytes Rate, PW VC Oper Status Up, PW VC Inbound Oper Status Up, PW VC Outbound Oper Status Up, PW VC Oper Status Down, PW VC Perf Total In HC Packets, PW VC Perf Total In HC Bytes, PW VC Perf Total Out HC Packets, PW VC Perf Total Out HC Bytes, PW VC Inbound Oper Status Down, PW VC Outbound Oper Status Down

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
PWE3 Traffic Graphs	Graphical representation of PWE3 traffic including average in bit rate, average out bit rate, average in byte rate, average out byte rate, average in packet rate, average out packet rate, global availability, in availability and out availability.	<p><i>Pseudowire Emulation Edge to Edge</i></p> <p>For details about the Pseudowire Emulation Edge to Edge monitoring policy, see <a href="#">Pseudowire Emulation Edge to Edge Monitoring Policy</a>.</p>	PW VC Perf Total In HC Packets Rate, PW VC Perf Total In HC Bytes Rate, PW VC Perf Total Out HC Packets Rate, PW VC Perf Total Out HC Bytes Rate, PW VC Oper Status Up, PW VC Inbound Oper Status Up, PW VC Outbound Oper Status Up, PW VC Oper Status Down, PW VC Perf Total In HC Packets, PW VC Perf Total In HC Bytes, PW VC Perf Total Out HC Packets, PW VC Perf Total Out HC Bytes, PW VC Inbound Oper Status Down, PW VC Outbound Oper Status Down
QoS Policing	Tabular representation of the details about the policy map: ClassMap. The details include, direction of the policy map, average exceed byte rate, maximum exceed byte rate, maximum exceed date, average violate byte rate, maximum violate byte rate, maximum violate date, average conformed byte rate, maximum conformed byte rate, maximum conformed date, CIR current rate and PIR current rate. Also, graphical representation of exceed, violate and conformed byte rates.	<p><i>Quality of Service</i></p> <p>For details about the Quality of Service monitoring policy, see <a href="#">Quality of Service Monitoring Policy</a>.</p>	Conformed Bytes Rate, Exceeded Bytes Rate, Violated Bytes Rate, Exceeded Packets, Violated Bytes, CIR, Conformed Bytes, Exceeded Bytes, PIR

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
QoS Policy	Graphical and tabular representation of the details about the policy map: ClassMap. The details include, direction of the policy map, average pre-policy byte rates, maximum pre-policy byte rates, average post-policy byte rates, maximum post-policy byte rates, maximum pre-policy dates, maximum post-policy dates, average drop in percentage, maximum drop in percentage, maximum drop date, average pre-policy of CIR, average interface speed in percentage, maximum pre-policy of CIR, maximum interface speed in percentage, average pre-policy of CIR, maximum pre-policy of CIR and interface speed date. Also, graphical representation of pre-policy, post-policy, drop bit rate, and drop percentage.	<i>Quality of Service</i> For details about the Quality of Service monitoring policy, see <a href="#">Quality of Service Monitoring Policy</a> .	Drop Bytes Rate, Drop Percent, Post-Policy Bytes Rate, Pre-Policy Bytes Rate, Pre-Policy Percent of CIR, Post-Policy Percent of CIR, CIR, Post-Policy Rate (Bytes/Sec),Pre-Policy Bytes

## Optical Performance Reports

**Table 1: Optical Performance Reports** lists the Optical Performance reports supported by Cisco EPN Manager. For all graphical reports, ensure that you select a maximum of four interfaces when you schedule or run these reports. For all tabular reports, use the Show field to specify the number of records to be displayed in a page when you schedule or run these reports.

The performance data displayed in the generated reports depends on the monitoring policy parameter that you activate when you enable the monitoring policy. For a detailed list of monitoring type and the associated performance counters, see [Monitoring Policies Reference](#). For more information about monitoring policies, see [Monitor Device and Network Health and Performance](#). For information about how to interpret the report results, see [Report Output Examples: Web GUI Output and CSV File Output, on page 28](#).



**Note** Enable the *Optical 1 day*, *Optical 15 mins*, or *Optical 30 secs* monitoring policies to populate data for these reports.

**Table 1: Optical Performance Reports**

Report	Report Type	Provides:	Monitoring Policy Parameters That Must Be Activated	Parameters That Must Be Polled
Ethernet	Ethernet Reports—IOS-XR devices	<p>Graphical and tabular reports that list the total number of packets that are requested by the higher-level protocols to be transmitted, and which were not addressed to a multicast or broadcast address at this sublayer, including those that were discarded or not sent. The details also include the total number of multicast frames transmitted error free, the total number of packets requested by higher-level protocols, the total number of transmitted octets, the total number of octets received on the interface, and the number of received packets that were discarded because of errors.</p> <p>To customize the report output for a new report, choose <b>Reports &gt; Report Launch Pad &gt; Optical Performance &gt; Ethernet</b>, click <b>New</b>, and click <b>Customize</b> in the <b>Settings</b> area.</p> <p>To customize the report output for an existing report, choose <b>Reports &gt; Report Launch Pad &gt; Optical Performance &gt; Ethernet</b>, click the required report link, and click <b>Customize</b> in the <b>Settings</b> area.</p>	<p><i>Optical 1 day</i>, <i>Optical 15 mins</i>, or <i>Optical 30 secs</i></p> <p>For details about the information collected by optical monitoring policies, see <a href="#">Monitoring Policies Reference</a>.</p> <p>For information about how to interpret the report results, see <a href="#">Report Output Examples: Web GUI Output and CSV File Output</a>, on page 28.</p>	Ethernet

Report	Report Type	Provides:	Monitoring Policy Parameters That Must Be Activated	Parameters That Must Be Polled
OTN	Section Monitoring NEnd & FEnd Reports- NCS1K, NCS2K, and NCS4K	Graphical and tabular reports that list the OTN section monitoring details of devices and interfaces in the OTN circuit type. The details include number of background block errors and its ratio, number of errored seconds and its ratio, number of severely errored seconds and its ratio, number of unavailable seconds, and number of failure counts.	<p><i>Optical 1 day,</i> <i>Optical 15 mins,</i> <i>or Optical 30 secs</i></p> <p>For details about the information collected by optical monitoring policies, see <a href="#">Monitoring Policies Reference</a>.</p> <p>For information about how to interpret the report results, see <a href="#">Report Output Examples: Web GUI Output and CSV File Output</a>, on page 28.</p>	OTN DWDM Infrastructure <sup>1</sup>
	Path Monitoring NEnd & FEnd Reports	Graphical and tabular reports that list the OTN path monitoring details of devices and interfaces in OTN circuit type. They provide details such as number of background block errors and its ratio, number of errored seconds and its ratio, number of severely errored seconds and its ratio, number of unavailable seconds, and number of failure counts.		
	Forward Error Correction Reports- NCS1K, NCS2K, and NCS4K	Graphical and tabular reports that list the OTN forward error correction details of devices and interfaces in the OTN circuit type. The details include ECW, UCW, the number of bit errors that are corrected, number of uncorrectable words, and Preforward error correction-based bit error counts detected during the performance monitoring time interval.		
	Tandem Connection Monitoring NEnd & FEnd Reports	Graphical and tabular reports that provide the tandem connection monitoring details for the devices and interfaces in the OTN circuit type. The details include number of background block errors and its ratio, number of errored seconds and its ratio, number of severely errored seconds and its ratio, number of unavailable seconds, and number of failure counts.		OTN
	GFP Statistics Reports–NCS2K and NCS4K	Graphical and tabular reports that provide the Generic Framing Procedure (GFP) statistics for the devices in the OTN circuit type. The GFP statistics include number of GFP frames and bytes received and transmitted, number of single and multiple bit errors received, number of packets received with CRC errors, invalid GFP type, and invalid CID, number of CMF frames received and transmitted, and number of cHEC and tHEC multiple bit errors.		OTN DWDM Infrastructure <sup>1</sup>

Report	Report Type	Provides:	Monitoring Policy Parameters That Must Be Activated	Parameters That Must Be Polled
Physical	Optical Power Reports-NCS1K, NCS2K, SVO, and NCS4K	Graphical and tabular reports that provide the average, minimum, and maximum percentage of optical input and output power of the received and transmitted signal for devices in a physical circuit type.  <b>Note</b> Graphical reports are not supported for SVO devices.	<i>Optical 1 day,</i> <i>Optical 15 mins,</i> <i>or Optical 30 secs</i>  For details about the information collected by optical monitoring policies, see <a href="#">Monitoring Policies Reference</a> .	Physical DWDM Infrastructure <sup>1</sup>
	Laser Bias Current Reports- NCS1K, NCS2K, SVO, and NCS4K	Graphical and tabular reports that provide the average, minimum, and maximum percentage of laser bias current. The laser bias current is the normalized value expressed as the integer percentage.  <b>Note</b> Graphical reports are not supported for SVO devices.	For information about how to interpret the report results, see <a href="#">Report Output Examples: Web GUI Output and CSV File Output, on page 28</a> .	
	Optical Physical Report -NCS1K, NCS2K, SVO, and NCS4K	Graphical and tabular reports that provide the average, minimum, and maximum value of optical power on the unidirectional port. The details include the average, minimum and maximum Optical Service Channel power level. The details of average, minimum and maximum optical signal-to-noise ratio, optical power warning, chromatic dispersion, second order polarization mode dispersion, polarization dependent loss, differential group delay, polarization change rate, and phase noise.  <b>Note</b> Graphical reports are not supported for SVO devices.	<b>Note</b> <i>Optical 30 secs</i>  is not applicable for SVO devices	

Report	Report Type	Provides:	Monitoring Policy Parameters That Must Be Activated	Parameters That Must Be Polled
SDH Or SONET	SDH Regenerator Section Report	Graphical and tabular reports that provide the performance monitoring details of the SDH regenerator section layer for the devices in your network. The details include the number of background block errors and its ratio, number of errored seconds and its ratio, number of severely errored seconds and its ratio, number of unavailable seconds, number of errored blocks, and number of out-of-frame seconds.	<i>Optical 1 day</i> or <i>Optical 15 mins</i> For details about the information collected by optical monitoring policies, see <a href="#">Monitoring Policies Reference</a> .	SDH/SONET DWDM Infrastructure <sup>1</sup>
	SDH Multiplex Section NEnd & FEnd Reports - NCS2K	Graphical and tabular reports that provide the performance monitoring details of SDH multiplex section layer for the devices in your network. The details include number of background block errors and its ratio, number of errored seconds and its ratio, number of severely errored seconds and its ratio, number of unavailable seconds, number of errored blocks, number of failure counts, protection switching—Switching count, ring count, span count, working count, duration, ring duration, span duration and working duration.	For information about how to interpret the report results, see <a href="#">Report Output Examples: Web GUI Output and CSV File Output</a> , on page 28.	
	SDH Multiplex Section NEnd & FEnd Reports - NCS4K	Graphical and tabular reports that provide the performance monitoring details of SDH multiplex section layer for the devices in your network. The details include number of background block errors and its ratio, number of errored seconds and its ratio, number of severely errored seconds and its ratio, number of unavailable seconds, and number of errored blocks.		
	SONET Section Report	Graphical and tabular reports that provide performance monitoring details of SONET section layer for the devices in your network. The details include number of coding violations, number of errored seconds, number of severely errored seconds, and number severely errored frame seconds.		
	SONET Line NEnd & FEnd Reports - NCS2K	Graphical and tabular reports that provide performance monitoring details of SONET line layer for the devices in your network. The details include number of coding violations, number of errored seconds, number of severely errored seconds, number of unavailable seconds, number of failure counts, protection switching—Switching count, ring count, span count, working count, duration, ring duration, span duration and working duration.		
	SONET Line NEnd & FEnd Reports - NCS4K			

Report	Report Type	Provides:	Monitoring Policy Parameters That Must Be Activated	Parameters That Must Be Polled
		Graphical and tabular reports that provide performance monitoring details of SONET line layer for the devices in your network. The details include number of coding violations, number of errored seconds, number of severely errored seconds, number of unavailable seconds, and number of failure counts.		

1. You must activate this parameter for all Cisco Optical Networking Services (ONS) and Cisco Network Convergence System (NCS) 2000 series devices.

## Performance Reports

This section lists the basic performance reports supported by Cisco EPN Manager. It also lists the monitoring policies and parameters that must be enabled for each of the report type. These reports are applicable for both Optical and Carrier Ethernet technologies.



**Note** Report types marked with an asterisk (\*) are applicable for SVO and Cisco NCS 2000 series devices.

For more information about monitoring policies, see [Monitor Device and Network Health and Performance](#).

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Environmental Temperature *	Tabular representation of Device IP Address, name, Sensor Name, Sensor Type, Maximum Inlet Temp, Maximum Other Temp, and Eventtime for network devices.	<i>Device Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	Environment Temperature
Threshold Violations	Lists the threshold violation alarms data (source, event type, category and description) for your network in a table.	<i>Interface Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	Admin Status Up/Down Operational Status Up/Down Admin Status Up and Operational Status Down Percentage

## Network Summary Reports

This section lists the Network Summary reports supported by Cisco EPN Manager. These reports provide information about the health of the network.

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Polled
Link Flap Report	Tabular representation of the A end device, A end interface, Z end device, Z end interface, link name and the number of flaps.	NA	NA

## Device Reports

This section lists the device reports supported by Cisco EPN Manager. It also lists the monitoring policies and parameters that must be enabled for each of the report type. These reports are applicable for both Optical and Carrier Ethernet technologies.



**Note** Report types marked with an asterisk (\*) are applicable for SVO and Cisco NCS 2000 series devices.

For more information about monitoring policies, see [Monitor Device and Network Health and Performance](#).

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Alarm	List of alarms for devices in the network. Includes severity, message, status, failure source, time stamp, creation time, device timestamp, owner, category, condition, location, service affecting, satellite ID.	NA	NA
CPU Utilization	Table listing all devices with their average CPU usage for a specified time period.	<i>Device Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	CPU Utilization
Detailed Hardware *	Hardware information for the entire inventory or device types (for example, Switches and Hubs, Routers, and Optical Transport).	NA	NA
Detailed Software *	Software information for the entire inventory or device types (for example, Switches and Hubs, Routers, and Optical Transport).	NA	NA

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Device Availability	Table listing all the available devices in the network and their reachability percentage.	NA	NA
Device Credential Verification	The credential status of the devices in your network. Includes the login, reachability, and protocol statuses of each device. Also, includes the last modified date and time for the device.	NA	NA
Device Health	CPU utilization, memory utilization, and availability information of the network devices for a specified time period. Includes minimum, maximum, and average for all CPU modules and memory pools on a device.	<i>Device Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	CPU Utilization
Device Serial Number	Lists the serial number of devices present on your network.	NA	NA
Event	List of events for devices in your network. Includes description, failure source, time stamp, device timestamp, severity, category, condition.	Lists the serial number of devices present on your network.	NA
Identity Capability	Identity capability summary information for the switches in the network.	NA	NA
<i>IP Interface Report</i> : Logical port data of the devices in your network. Includes device name, port name, port IP address, port description, admin status, and operational status.			

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Inventory *	<p>Basic inventory data for the devices in your network. Includes count of controllers by model, count of controllers by software version, controller inventory, count of APs by model, count of APs by software version, AP inventory, disassociated AP(s), autonomous AP inventory, maintenance mode AP(s), count of MSEs by version, MSEs, count of switches by model, count of switches by version, switch inventory, switch devices software images, count of routers by model, count of routers by version, router inventory, router devices software images, count of Cisco Interfaces and Modules devices by model, count of Cisco Interfaces and Modules devices by software version, Cisco Interfaces and Modules devices inventory, Cisco Interfaces and Modules - software images, count of storage networking devices by model, count of storage networking devices by software version, storage networking devices inventory, storage networking devices - software images, count of security and VPN by model, count of security and VPN by software version, security, and VPN inventory.</p>	NA	NA
Link	Link Utilization for OTU, OTS, ODU, and OMS enabled link in network.	<p><i>Device Health</i></p> <p>For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a>.</p>	NA

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Memory Utilization	Memory utilization information for a specified time period. Includes information for all memory pools/modules.	<i>Device Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	Memory Pool Utilization
Network Inventory Detail	Network inventory information in the network includes device name, equipment type, operation status, actual equipment type, physical location, CLEI code, hardware part number, manufactured date, serial number, product ID, version ID, and also UDFs (if selected from the column list under Settings tab).	<i>Device Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	NA
Optical SFP Threshold	Optical SFP Threshold information of your network. Includes device name, device IP, interface name and description, warning data such as transmit power warning low (mW), transceiver temp alarm low (C/F), laser bias warning high (mA), transceiver temp warning low (C/F), transceiver voltage alarm high (V), laser bias alarm low (mA), laser bias alarm high (mA), transceiver temp alarm high (C/F), transmit power alarm high (mW), receive power warning high (mW), transceiver voltage warning high (V), transmit power alarm low (mW), transmit power warning high (mW), receive power alarm high (mW), laser bias warning low (mA), transceiver voltage alarm low (V), transceiver voltage warning low (V), receive power warning low (mW), transceiver temp warning high (C/F), and receive power alarm low (mW).	NA	NA

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
PTP State	PTP Clock Class, PTP Servo, Port Index, and PTP Boundary Clock data.	PTP/SyncE Monitoring Policy For details about the PTP/SyncE Monitoring Policy, see <a href="#">PTP/SyncE Monitoring Policy</a> .	NA
PWID Inventory	Displays and exports the PWID of the local device and peer device. Lists all PWID for all services per domain and per router.	<i>Device Health</i> For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a> .	NA
Port Capacity	Interface utilization percentages for the devices in the network.	NA	NA
SFP Port and Module Details	Lists the small form-factor pluggable and module details on your network.	NA	NA
Third Party Devices Detail	Lists the details of the third-party devices on your network.	NA	NA
VLAN Detailed	Detailed VLAN information for the switches in the network. Includes VLAN ID, VLAN name, VTP domain name, admin status, device IP address, device name, Interface IP address, operational VLAN mode, and operational status.	NA	NA
VLAN	VLAN information for the switches in the network.	NA	NA

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Wired Detailed Device Inventory *	<p>Detailed inventory data for the wired devices in your network. Includes system information, chassis information, module information, module port interfaces, VLAN interfaces, software image information, memory pool information, flash devices, flash partition, flash file.</p> <p><b>Note</b> Up to 5 devices can be selected if you want to run the report immediately without saving it. To include more than 5 devices, save or schedule the report.</p>	NA	NA
Wired Device Availability *	<p>List of wired devices with the highest availability in your network. Includes device name, average availability (%).</p> <p><b>Note</b> This report is not applicable for SVO devices.</p>	NA	NA
Wired Module Detail *	<p>Table listing detailed module information for wired devices in the network including device name, device IP, equipment name, number of ports, operational status, vendor equipment type, manufacturer, serial number, and UDI.</p>	NA	NA

Report Type	Provides:	Monitoring Policies That Must Be Enabled	Parameters That Must Be Activated
Wired Port Attribute	<p>Port attribute information such as admin status, operational status, MAC address, and so on. Includes VLAN ID, access mode VLAN, device IP address, Interface IP address, description, MAC address, Admin status, operational status, type, MTU, speed, duplex, IsTrunk, and trunk encapsulation</p> <p><i>Wired Port Pluggable Attribute</i> is a sub-report type available under the Wired Port Attribute. It includes port pluggable attribute information, such as pluggable model information, pluggable description, pluggable type, port name, device IP address, interface IP address, MAC address, operational status, MTU, and speed.</p>	<p><i>Device Health</i></p> <p>For details about the Device Health monitoring policy, see <a href="#">Device Health Monitoring Policy</a>.</p>	NA

## Configure a SFTP Repository

You can configure an external SFTP repository (local or remote) to which you can export reports.

- 
- Step 1** Navigate to **Administration > Settings > System Settings > General > Reports**
  - Step 2** Enter details of the SFTP sever in the fields listed under the **External Server Settings** area.
  - Step 3** Click **Save**.
- 

## Create, Schedule, and Run a New Report

The Report Launch Pad provides access to all Cisco EPN Manager reports from a single page. From this page, you can perform all report operations: Create, save, view, schedule, and customize.

To see more report details, hover the cursor over the tooltip next to the report type.

To create, schedule, and run a new report:

### Before you begin

Ensure that you have configured an external server if you are planning on exporting the report to an external SFTP repository. See [Configure a SFTP Repository, on page 22](#) for more information.

**Step 1** From the left sidebar, choose **Reports > Report Launch Pad**.

**Step 2** Locate the report you want to launch, then click **New**.

A new text box, **Last**, is added as part of the **Reporting Period** field which allows you to generate reports for the last 24 hours.

**Note** Enter a value between 1–24, i.e. for the last 24 hours.

**Step 3** In the Report Details page, enter the report title.

You can edit the **Report Title** field.

**Step 4** Choose the appropriate **Report By** category from the drop down list.

**Step 5** The **Report Criteria** field allows you to sort your results depending on the previous **Report By** selection made.

**Note** If you select the virtual domain checkbox at the top, edit button is enabled when one or more values present in the report criteria filter.

**Step 6** Click Edit to open the device selection wizard and select the required device. Click on Preview tab to confirm the selected devices and click Ok. You can also remove the selected devices.

The parameters shown in the Report Details page depend on the report type you chose. With some reports, you are required to customize the report results. For more information about how to customize a report result, see [Customize Report Results, on page 24](#).

**Step 7** If you plan to run this report later or as a recurring report, select the **Scheduling** check box and enter the required Schedule parameters. If you have enabled Scheduling, all the options except **Save** will be hidden.

**Step 8** To run the report, choose one of the following options:

- **Run**—Runs the report without saving the report setup.
- **Save**—Saves this report setup without immediately running the report. If you have entered Schedule parameters, the report runs automatically at the scheduled date and time.
- **Run and Save**—Saves this report setup and runs the report immediately.
- **Save and Export**—Saves the report, runs it, and exports the results to a file. You will be prompted to select the export and email options for the report. The export options available are:

- **Export Format** - Select the CSV or PDF format. The CSV file is a single .csv file which can have upto 1 million records. If the number of records exceeds 1 million, Cisco EPN Manager generates another CSV file to accommodate the remaining records. Both the CSV files are exported in zip format.

**Note** This condition applies to the reports listed under Reports Launchpad, also called as simple reports. Custom reports do not have this conditional check.

- **Export Delimiter** - This field is available only if you have selected the CSV format to export the report. Enter any one of the following characters \* # @ % ^ & | , ! \$ to view the exported data separated by a delimiter.
- **Export to File** - Select this option to export the report to the on-demand repository /localdisk/ftp/reportsOnDemand/

- **Export to SFTP** - Select this option to export the report to a SFTP repository.

**Note** Ensure that you have configured a SFTP repository before selecting this option.

- **Email** - Select this option to send an email once Cisco EPN Manager generates the report. Enter the destination email address, the subject line content and if you would like to include the exported file as an attachment.

When you are finished, click **OK**.

- **Save and Email**—Saves the report, runs it, exports the results as a file, and emails the file. You will be prompted to:
  - Select the exported report file format.
  - Enter the destination email address and the email subject line content.

**Note** In Cisco EPN Manager, selecting the **Export Format** as CSV and clicking the **Save and Email** option will send the CSV file in the zip format, if the file holds more than 15k records. A file with less than 15k records will be sent as a plain CSV file.

When you are finished, click **OK**.

- **Cancel**—Returns to the previous page without running or saving this report.

## Customize Report Results

Many reports allow you to customize their results, letting you include or exclude different types of information. Reports that support this feature display a **Customize** button. Click this button to access the **Create Custom Report** page and customize the report results.

To customize a report result:

- Step 1** Choose the report you want to customize:
- a) Create a new report. Click **Reports > Report Launch Pad**.
  - b) Customize a recurring report. Click **Reports > Saved Report Templates** and, then click the report name hyperlink.
- Step 2** In the Report Details page, click **Customize**.
- Step 3** On the Create Custom Report page, complete the required information, then click **Apply** to confirm the changes.
- Step 4** Click **Save** in the Report Details page.

## Filter and Customize Report Data Using User Defined Fields

You can create custom attributes and assign values to them. See [Create User Defined Fields for Custom Values](#) for information about how to create user defined fields (UDF). You can then use the UDFs to filter and customize the report results.

Cisco EPN Manager scans the values of UDFs created every two minutes and generates a UDF.json file, in which the metadata are saved. You can access this file from the

`/opt/CSColumos/conf/rfm/classes/com/cisco/server/reports/conf/UDF.json` location.

Here is an example of how the metadata for the UDFs are displayed in the UDF.json file:

```
[
  {
    "label": "internal",
    "hidden": true,
    "displayName": "Internal",
    "fixedColumn": false
  },
  {
    "label": "location",
    "hidden": true,
    "displayName": "Location",
    "fixedColumn": false
  },
  {
    "label": "quality",
    "hidden": true,
    "displayName": "Quality",
    "fixedColumn": false
  },
]
```

In this example:

- the attribute, *label* is the user defined field created in the **Administration > Settings > System Settings > General > User Defined Fields** page.
- the attribute, *hidden* is set to False, by default. If this attribute is set to True, the UDF is hidden on the Reports page. You need to set this attribute to False so that the UDF is available for selection when you customize the report results.
- the attribute, *displayName* is used to change the UDF name that will be displayed in the report results.
- The attribute, *fixedColumn* is applicable only when the hidden attribute is set to False.

After you have made the required changes in the UDF.json file, you can customize the report results. See [Customize Report Results, on page 24](#).

You can filter and customize reports based on UDFs for the following reports:

Report Category	Report Name	Report Type
CE Performance	Interface Graphs	Interface In Utilization Graph
		Interface In Traffic Graph
		Interface Out Utilization Graph
		Interface Out Traffic Graph
	Interface Top N	Interface TopN In Utilization
		Interface TopN In Traffic
		Interface TopN Out Utilization
		Interface TopN Out Traffic
		Interface Bottom N Availability
	Interface Traffic	Interface Errors and Discards
		Interface Traffic Report
		Interface CRC Errors Report
	Performance	Environmental Temperature
Current Environmental Temperature		
Device	CPU Utilization	CPU Utilization
		Top CPU Utilization
		Bottom CPU Utilization
	Memory Utilization	Memory Utilization
		Top Memory Utilization
		Bottom Memory Utilization
	Wired Module Detail	Wired Module Detail Report Details
	Wired Detailed Device Inventory	Wired Detailed Device Inventory Report Details

You can also change the filter type of the UDF in the UDF.json file. The default filter type is String.

Here are few examples of filter types and their definitions:

```
[
  {
    "label": "internal",
    "displayName": "Internal",
```

```

    "hidden": false,
    "fixedColumn": false,
    "filterMetadata": {
      "sqlDataType": "Boolean",
      "attr": "internal",
      "label": "UDF: Internal Used",
      "filterType": "boolean"
    }
  },
  {
    "label": "location",
    "displayName": "Location",
    "hidden": false,
    "fixedColumn": false
  },
  {
    "label": "quality",
    "displayName": "Quality",
    "hidden": false,
    "fixedColumn": false,
    "filterMetadata": {
      "sqlDataType": "Number",
      "selectItems": {
        "1": "High Quality",
        "2": "Mid Quality",
        "3": "Low Quality"
      }
    },
    "attr": "quality",
    "label": "UDF: Quality",
    "filterType": "enumeration"
  }
},
{
  "label": "sapid",
  "displayName": "SAP ID",
  "hidden": false,
  "fixedColumn": true,
  "filterMetadata": {
    "sqlDataType": "Number",
    "attr": "sapid",
    "label": "UDF: SAP ID",
    "filterType": "numeric"
  }
},
{
  "label": "startTime",
  "displayName": "Start Time",
  "hidden": false,
  "fixedColumn": false,
  "filterMetadata": {
    "sqlDataType": "Timestamp",
    "attr": "startTime",
    "label": "UDF: Start Time",
    "filterType": "datetime"
  }
},
{
  "label": "vendor",
  "displayName": "Vendor",
  "hidden": false,
  "fixedColumn": true,
  "filterMetadata": {
    "sqlDataType": "String",
    "selectItems": {

```

```

    "huawei": "Hua Wei",
    "alu": "Alcatel Lucent",
    "cisco": "Cisco"
  },
  "attr": "vendor",
  "label": "UDF: Vendor",
  "filterType": "enumeration"
}
}
]

```

After you have made the required changes in the UDF.json file, use the **Advanced Filter** option in the Report Details page to filter the report data.

## Report Output Examples: Web GUI Output and CSV File Output

In this example, a section monitoring report is generated for Cisco NCS 2000 series devices that are available in the near end of the network. You can choose to view the result, either at the bottom of the Report Details page, or export the results to a CSV or PDF file. For more information about how to create and run a report, see [Create, Schedule, and Run a New Report, on page 22](#).

The following figure shows how the results are displayed at the bottom of the Report Details page.

SectionMonitoringNearEndNCS2K Cisco EPN Manager

Generated: 2015-Apr-02, 17:52:03 IST

Report By: Interfaces By Device

Devices: M6-235-140;nmtgte-m6-159;M6-235-139

Report Interval: 15 minutes

Reporting Period: Last 6 hours

Show: All records

**Section Monitoring NEnd Report**

Device Name	Device IP Address	Interface	DateTime	BBE-SM	BBER-SM	ES-SM	ESR-SM	SES-SM	SESR-SM	UAS-SM	FC-SM
M6-235-140	10.59.235.140	CHAR-2-2-2	2015-Apr-02, 12:00:00 IST	0	0.00000	0	0.00000	0	0.00000	0	0
M6-235-140	10.59.235.140	CHAR-2-2-2	2015-Apr-02, 12:15:00 IST	0	0.00000	0	0.00000	0	0.00000	0	0
M6-235-140	10.59.235.140	CHAR-2-2-2	2015-Apr-02, 12:30:00 IST	0	0.00000	0	0.00000	0	0.00000	0	0
M6-235-140	10.59.235.140	CHAR-2-2-2	2015-Apr-02, 13:00:00 IST	0	0.00000	0	0.00000	0	0.00000	0	0

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If scheduling is enabled and you choose to export the result to a CSV file, the report is saved in the repository named /localdisk/ftp/reports. You can adjust the location of the report repository. For more information, see [Report Purgin](#).



**Note** If scheduling is disabled and you choose to export the result to a CSV file, the report is saved in the repository named /localdisk/ftp/reportsOnDemand.

The file naming convention for the CSV file is *ReportTitle\_yyyymmdd\_hhmmss.csv*, where *yyymmdd* is the year, month, and date, and *hhmmss* is the hours, minutes, and seconds when the report result was exported.

The following figure shows how the results are displayed in a CSV file.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Section Monitoring Report for Cisco NCS 2000 Series Devices											
2	Generated: 2015-04-02 17:52:03 IST											
3	Report By: Interfaces By Device											
4	Devices: M6-235-140;nmtgte-m6-159;M6-235-139											
5	Report Interval: 15 minutes											
6	Reporting Period: Last 6 hours											
7	Show: All records											
8												
9	Section Monitoring NEnd Report											
10	Device Name	Device IP Address	Interface	DateTime	BBE-SM	BBER-SM	ES-SM	ESR-SM	SES-SM	SESR-SM	UAS-SM	FC-SM
11	M6-235-140	10.58.235.140	CHAN-2-2-2	2015-Apr-02, 12:00:00 IST	0	0	0	0	0	0	0	0
12	M6-235-140	10.58.235.140	CHAN-2-2-2	2015-Apr-02, 12:15:00 IST	0	0	0	0	0	0	0	0
13	M6-235-140	10.58.235.140	CHAN-2-2-2	2015-Apr-02, 12:30:00 IST	0	0	0	0	0	0	0	0
14	M6-235-140	10.58.235.140	CHAN-2-2-2	2015-Apr-02, 13:00:00 IST	0	0	0	0	0	0	0	0

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The following table explains how you can interpret the section monitoring report result.

Column Name	Description
Device Name	Name of the device that is in the near end of the network.
Device IP Address	IP address of the device.
Interface	Interface name of the device.
DateTime	Date and time when the section monitoring data was collected for the device. The value in this column depends on the report interval that you chose when you created the report. The report interval can be 15 minutes or 24 hours.
BBE-SM	Number of background block errors for the device.
BBER-SM	Background block error ratio for the device.
ES-SM	Number of errored seconds for the device.
ESR-SM	Errored seconds ratio for the device.
SES-SM	Number of severely errored seconds for the device.
SESR-SM	Severely errored seconds ratio for the device.
UAS-SM	Number of unavailable seconds for the device.
FC-SM	Number of failure counts (AIS/RFI detected) for the device.

For detailed descriptions of performance counters that are displayed in the results of other optical performance reports, see [Performance Counters for Optical Monitoring Policies](#).

## Troubleshooting Tips for an Empty Report

If the report was run successfully but you do not have an output file that can be exported, you can try one of the following troubleshooting tips:

Check if you have...	For example:
...enabled the correct monitoring policy. For details on what monitoring policies must be enabled, see <a href="#">Monitoring Policies Reference</a> .	For QoS reports, QoS monitoring policy must be enabled.
... enabled the periodic collection.	For any System Monitoring Periodic reports (CPU/Disk/Memory), the periodic collection must be enabled. Once enabled, the report must be generated after 12 hours to see the output.  <b>Note</b> Periodic collection can be enabled by clicking <b>Periodic Collection Enable</b> button under System Monitoring Setting in <code>https://&lt;Server IP&gt;/webacs/ncsDiag.do</code> .
... chosen the correct device type for a particular report.	Do not choose NCS devices for generating CE Performance reports as they are optical devices.
... selected the correct time period while generating a report.	You cannot choose a 2-week time period if you enabled the policy only 2 days ago.
... configured the device properly. For more details, see <a href="#">Configure Devices So They Can Be Modeled and Monitored</a> .	For QoS reports, QoS must be configured/enabled on the device.
... successful device inventory collection. For more details, see <a href="#">Find Devices With Inventory Collection or Discovery Problems</a>	For the reports to have data, the inventory collection status must be <b>Completed</b> .