Frequently Requested Information to Troubleshoot Optical Issues

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Contents

Introduction

This document provides information that customers often request in order to effectively troubleshoot their network issues. The information that customers request can vary based on the severity of the issue.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

ONS 15454 Multi−service Provisioning Platforms (MSPP)

15454 Outage Data Collection

In order to troubleshoot an outage, you must collect the diagnostic files and list of failed circuits during the outage. You can collect the other items listed in this section after the outage clears.

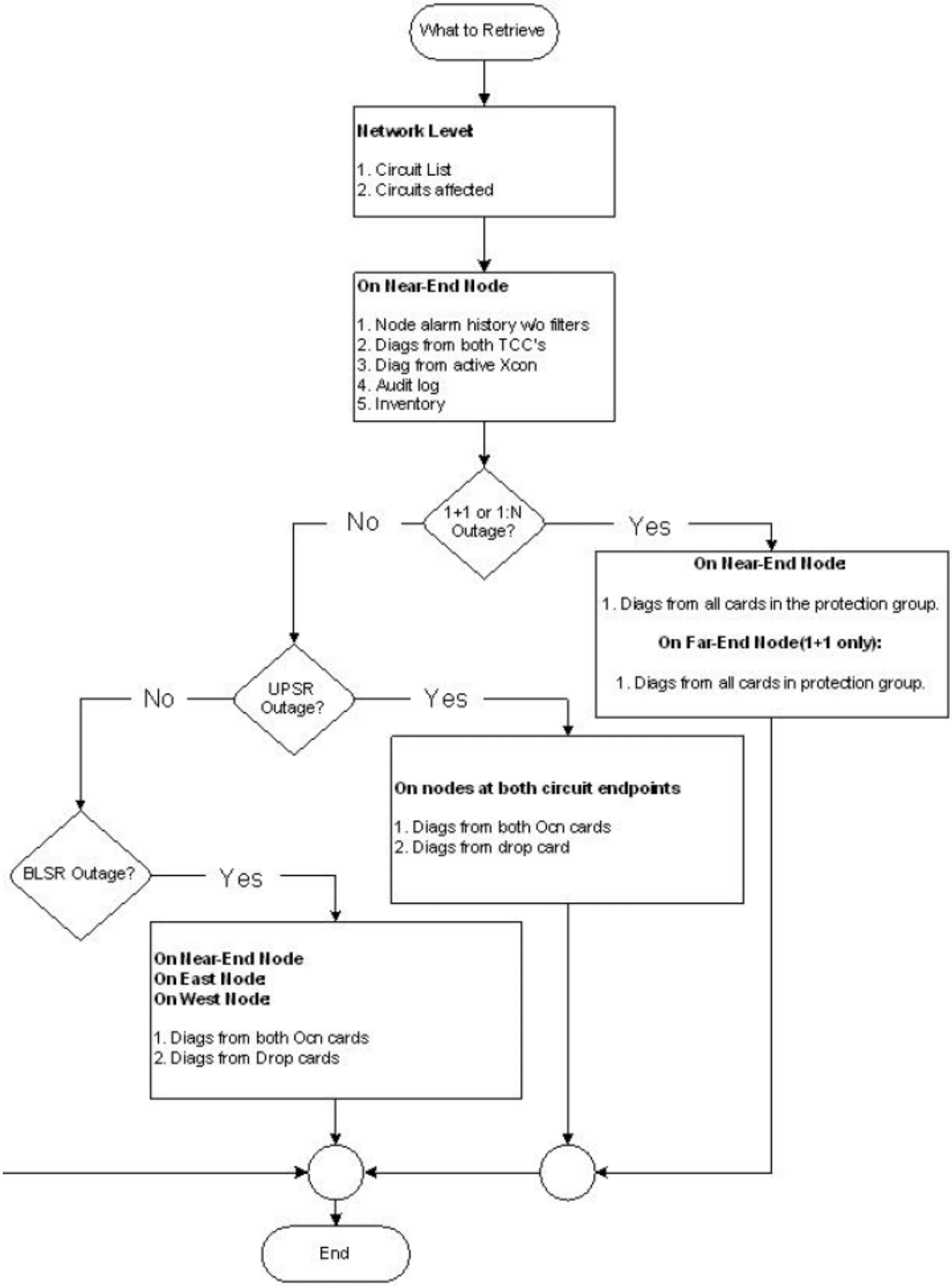
Identify which circuits failed, and gather detailed information about the source and destination of each circuit. Select the **Circuits** tab and save the circuit list in the HTML format. Highlight the failed circuits. Save the file. The suggested file name is failed_circuits.html.

Collect detailed information on the source, destination and route on several of the failed circuits. Complete these steps:

1. Select one of the failed circuits from the Circuits list.
2. Click **Edit**.
3. Check the **Show Detailed Map** check box.
4. Use the PRINT SCRN key to capture the screen that displays the detailed circuit map.
5. Save the screen capture file as **failed_curcuit_x.jpg**, where x represents the number to identify the failed circuit.
6. Repeat Steps 1 through 5 for each failed circuit.

Figure 1 indicates the procedure to troubleshoot the issue.

Figure 1 Flow Chart


What to Retrieve
Network Level
1. Circuit List
2. Circuits affected
On Near-End Node
1. Node alarm history w/o filters
2. Diags from both TCC's
3. Diag from active Xcon
4. Audit log
5. Inventory
1+1 or 1:N Outage?
No
Yes
On Near-End Node
1. Diags from all cards in the protection group.
On Far-End Node(1+1 only):
1. Diags from all cards in protection group.
UPSR Outage?
No
Yes
On nodes at both circuit endpoints
1. Diags from both Ocn cards
2. Diags from drop card
BLSR Outage?
Yes
On Near-End Node
On East Node
On West Node
1. Diags from both Ocn cards
2. Diags from Drop cards
End

Tech−support.exe

Cisco TAC provides the **Tech−support.exe** utility.

Tech−support.exe is a command line utility that enables you to retrieve diagnostic information from Cisco ONS 15454/SONET, 15454/SDH and 15327 nodes. You can retrieve diagnostics or debug information from any card that is plugged into the node. The **Tech−support.exe** utility eliminates the need to manually establish a telnet connection to the card and type the commands. **Tech−support.exe** requires IP connectivity between the node and the PC, either directly or through a GNE. Close any active telnet session to the node before you run this utility.

In an ENE/GNE scenario, if the nodes run 3.XX software, you must disable the firewall on ENEs for the script to work.

The format to run **Tech−support.exe** is:

tech−support.exe −−user "*username***" −−pass "***password***" −−all** *IP address nodename***_diagnostic.cms**

Note: Replace *username*, *password*, and *IP address* with the user name, password and IP address that you use.

Note: Here is a description of the parameters:

- **−−user "username"**

  This parameter is optional unless you have secured SUPERUSER access with a non−standard user name. This option is only applicable to versions 2.3.3, 3.2.1 and later for ONS 15454 and 3.30 and later for ONS 15327. The default username applies to all other versions. Username must be double−quoted.
- **−−pass "password"**

  This parameter is optional unless you have secured SUPERUSER access with a password. This option is only applicable to versions 2.3.3, 3.2.1 and later for ONS 15454, and 3.30 and later for ONS 15327. The default password applies to all other versions. Password must be double−quoted.
- **−−slot <slot_numbers>**

  This parameter is optional. This parameter contains a comma−separated list of slot numbers from which you can retrieve diagnostic information. By default, you can retrieve diagnostics only from active and standby TCCs on 15454 nodes, and active and standby XTCs on 15327 nodes. You can use this option to override the default behavior and retrieve diagnostics from user−specified slots.
- **−−all**

  This parameter is optional, and retrieves diagnostic information from all the slots provisioned in the NE.
- **−−network**

  This parameter is optional, and collects IP diagnostic information from every node in the DCC domain.
- **−−gateway *GNE hostname or IP Address***

  This parameter is optional. Use this option to reach an ENE through a GNE that has a firewall enabled and runs proxy server. This parameter applies to version 3.30 and later.

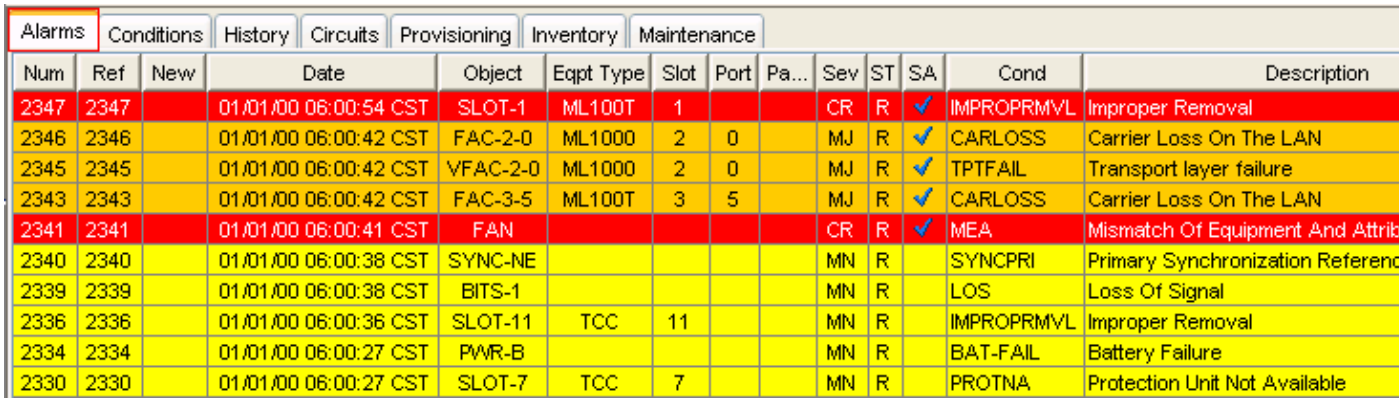
Here are some examples:

```
Tech-Support.exe cet-126 mydiagfile
Tech-Support.exe --user "administrator" --pass "admino15%" 10.92.58.128 diag_128
Tech-Support.exe --slots 14,16 rio-21 diagfile
Tech-Support.exe --network cet-126 diagfile
Tech-Support.exe --user  Admin  --pass  abcd  --gateway 10.77.30.234
 --all 10.77.30.235 diag_235
```

Current Alarms

- Ensure that no filters are in service, and that all severity tabs are checked.
- Ensure that the NUM and REF columns appear. Right click on the label bar, and select **Show**.
- Name the file ***nodename*_alarms.html**.

Figure 2 Alarms



Alarms | Conditions | History | Circuits | Provisioning | Inventory | Maintenance

Num	Ref	New	Date	Object	Eqpt Type	Slot	Port	Pa...	Sev	ST	SA	Cond	Description
2347	2347		01/01/00 06:00:54 CST	SLOT-1	ML100T	1			CR	R	✓	IMPROPRMVL	Improper Removal
2346	2346		01/01/00 06:00:42 CST	FAC-2-0	ML1000	2	0		MJ	R	✓	CARLOSS	Carrier Loss On The LAN
2345	2345		01/01/00 06:00:42 CST	VFAC-2-0	ML1000	2	0		MJ	R	✓	TPTFAIL	Transport layer failure
2343	2343		01/01/00 06:00:42 CST	FAC-3-5	ML100T	3	5		MJ	R	✓	CARLOSS	Carrier Loss On The LAN
2341	2341		01/01/00 06:00:41 CST	FAN					CR	R	✓	MEA	Mismatch Of Equipment And Attrib
2340	2340		01/01/00 06:00:38 CST	SYNC-NE					MN	R		SYNCPRI	Primary Synchronization Referenc
2339	2339		01/01/00 06:00:38 CST	BITS-1					MN	R		LOS	Loss Of Signal
2336	2336		01/01/00 06:00:36 CST	SLOT-11	TCC	11			MN	R		IMPROPRMVL	Improper Removal
2334	2334		01/01/00 06:00:27 CST	PWR-B					MN	R		BAT-FAIL	Battery Failure
2330	2330		01/01/00 06:00:27 CST	SLOT-7	TCC	7			MN	R		PROTNA	Protection Unit Not Available

Conditions

- Ensure that no filters are in service, and that all severity tabs are checked.
- Name the file ***nodename*_conditions.html**

Figure 3 Conditions

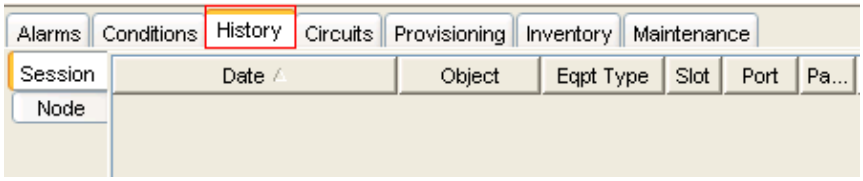
Alarms | Conditions | History | Circuits | Provisioning | Maintenance | Performance

Date	Object	Port	Pa...	Sev	SA	Cond	Description

History

- Ensure that no filters are in service, and that all severity tabs are checked.
- Ensure that the NUM and REF columns appear.
- Name the file ***nodename*_history.html**.

Figure 4 History



Alarms | Conditions | History | Circuits | Provisioning | Inventory | Maintenance

Session | Node

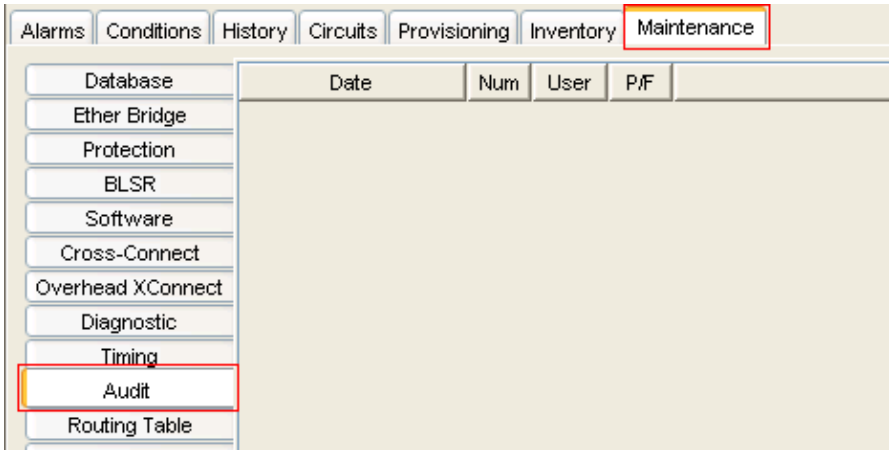
Date	Object	Eqpt Type	Slot	Port	Pa...

Audit Log

Select **Maintenance** > **Audit** in the shelf view to access the audit log (see Figure 5).

- Ensure that all columns appear.
- Name the file ***nodename*_audit.html**.

Figure 5 Audig Log



Network Diagram

A screen capture from the Network View is helpful, but does not include everything necessary to troubleshoot the network.

The network diagram requires:

- IP addresses
- Subnet masks
- Network topology
- Cards/ports for each span

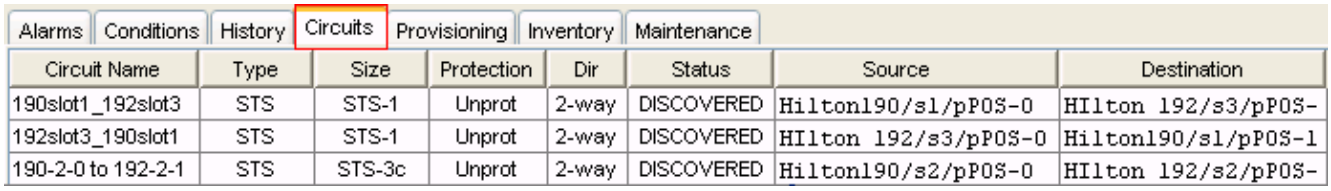
If your network uses the Bidirectional Line Switch Ring (BLSR) topology, identify which cards are East−oriented and which cards are West−oriented.

Name the file ***nodename*_diagram.xxx**, where xxx represents the file type used.

Circuit List

Click the **Circuits** tab. Name the file ***nodename*_circuits.html**.

Figure 6 Circuit List



Circuit Name	Type	Size	Protection	Dir	Status	Source	Destination
190slot1_192slot3	STS	STS-1	Unprot	2-way	DISCOVERED	Hilton190/s1/pPOS-0	HIlton 192/s3/pPOS-
192slot3_190slot1	STS	STS-1	Unprot	2-way	DISCOVERED	HIlton 192/s3/pPOS-0	Hilton190/s1/pPOS-1
190-2-0 to 192-2-1	STS	STS-3c	Unprot	2-way	DISCOVERED	Hilton190/s2/pPOS-0	HIlton 192/s2/pPOS-

Node Database Backup

Select the **Maintenance** tab, and click **Backup** in the Database section in the shelf view.

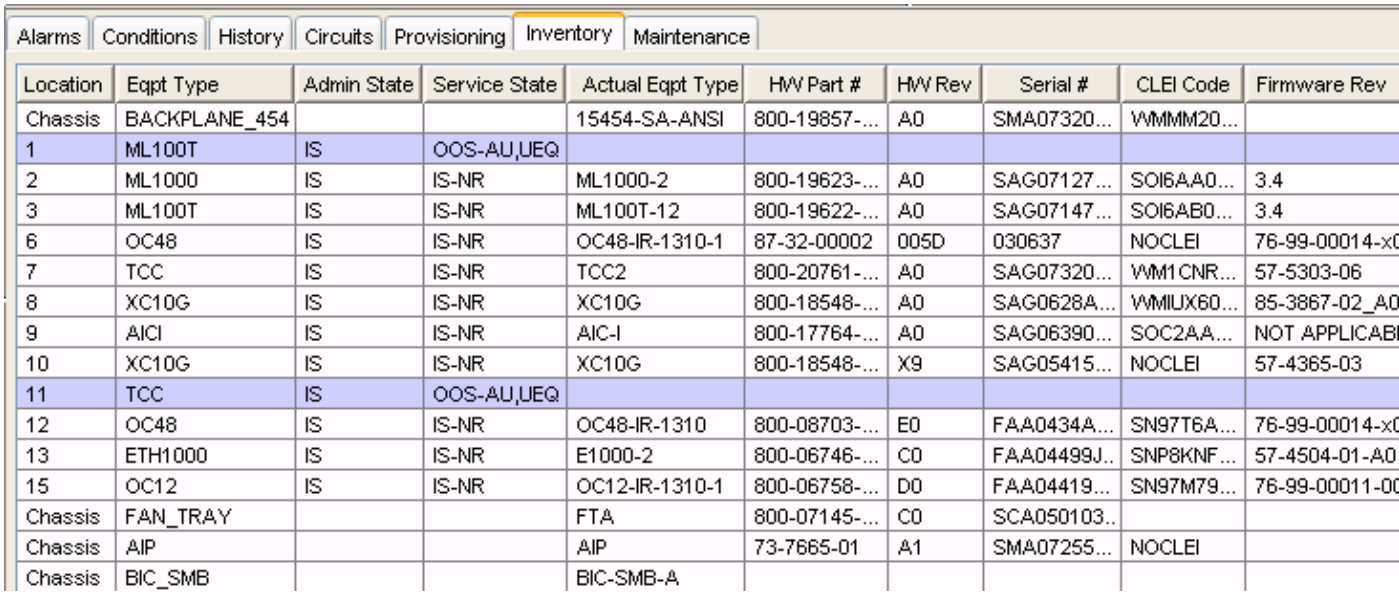
Name the file ***nodename*_backup.dat**.

Figure 7 Database Backup

Inventory List

Click the **Inventory** Tab. Name the file ***nodename*_inventory.html**.

Figure 8 Inventory

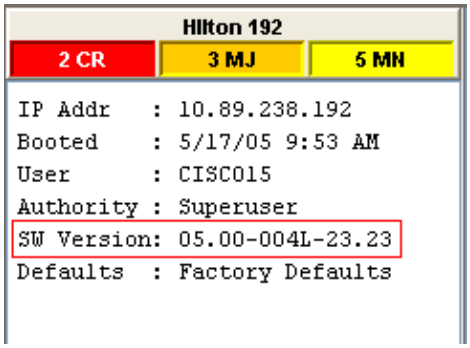


Location	Eqpt Type	Admin State	Service State	Actual Eqpt Type	HW Part #	HW Rev	Serial #	CLEI Code	Firmware Rev
Chassis	BACKPLANE_454			15454-SA-ANSI	800-19857-...	A0	SMA07320...	WMMM20...	
1	ML100T	IS	OOS-AU,UEQ						
2	ML1000	IS	IS-NR	ML1000-2	800-19623-...	A0	SAG07127...	SOI6AA0...	3.4
3	ML100T	IS	IS-NR	ML100T-12	800-19622-...	A0	SAG07147...	SOI6AB0...	3.4
6	OC48	IS	IS-NR	OC48-IR-1310-1	87-32-00002	005D	030637	NOCLEI	76-99-00014-x0
7	TCC	IS	IS-NR	TCC2	800-20761-...	A0	SAG07320...	WM1CNR...	57-5303-06
8	XC10G	IS	IS-NR	XC10G	800-18548-...	A0	SAG0628A...	WMIUX60...	85-3867-02_A0
9	AICI	IS	IS-NR	AIC-I	800-17764-...	A0	SAG06390...	SOC2AA...	NOT APPLICABI
10	XC10G	IS	IS-NR	XC10G	800-18548-...	X9	SAG05415...	NOCLEI	57-4365-03
11	TCC	IS	OOS-AU,UEQ						
12	OC48	IS	IS-NR	OC48-IR-1310	800-08703-...	E0	FAA0434A...	SN97T6A...	76-99-00014-x0
13	ETH1000	IS	IS-NR	E1000-2	800-06746-...	C0	FAA04499J..	SNP8KNF...	57-4504-01-A0
15	OC12	IS	IS-NR	OC12-IR-1310-1	800-06758-...	D0	FAA04419...	SN97M79...	76-99-00011-00
Chassis	FAN_TRAY			FTA	800-07145-...	C0	SCA050103..		
Chassis	AIP			AIP	73-7665-01	A1	SMA07255...	NOCLEI	
Chassis	BIC_SMB			BIC-SMB-A					

CTC Software Version

You can find the CTC software version in the left side top section of the shelf view (see Figure 9). Name the file ***nodename*_CTC.html**.

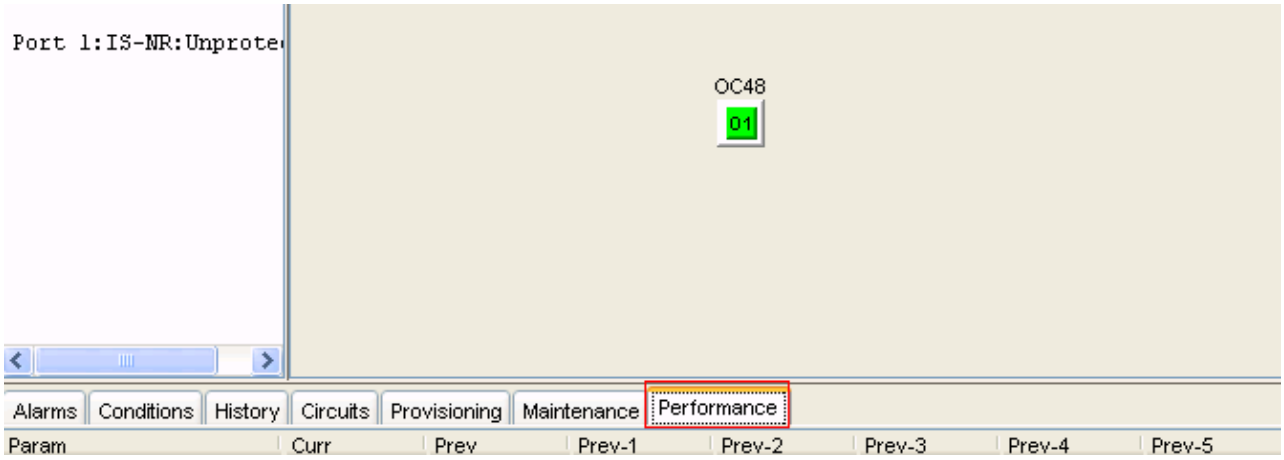
Figure 9 Software Version



Performance Tab (Monitoring)

Click the **Performance** tab in the card view. Name the file ***nodename*_cardxxyy_performance.html**, where xx represents the slot number, and yy represents the port number.

Figure 10 Performance



ONS 15454 Multi−service Transport Platforms (MSTP)

In order to troubleshoot issues, you must collect all items listed in the ONS 15454 Multi−service Provisioning Platforms (MSPP) section, and the Metro Planner file.

Metro Planner File

The Cisco Metro Planner software package generates a Metro Planner file for each 15454 MSTP node in the network configuration. The Metro Planner file is usually available from the network configuration designer.

ONS 15454 Multi−Layer (ML) Card

In order to troubleshoot issues, you must collect all items listed in the ONS 15454 Multi−service Provisioning Platforms (MSPP) section in addition to:

- **show tech** command output
- **show log** command output
- **show cdp neigh** command output

ONS 15530/15540

Gather these items:

- **show tech** command output
- **show log** command output
- **show alarm** command output

Related Information

- **Technical Support & Documentation − Cisco Systems**

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