smartoptics

DCP

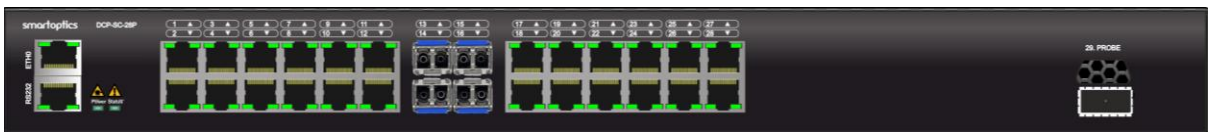
CLI User Manual

dcp-release-12.0.1

DCP-2 + DCP-F

DCP-M

DCP-R



DCP-SC-28P

Contents

1 Introduction

1.1 General

This user manual covers the CLI commands available for the DCP products, DCP-2, DCP-F, DCP-M and DCP-R.

This document includes both the standard CLI and the rescue CLI. The DCP platform has a rescue CLI that can open up the root account and perform some basic reboot and cold starts commands.

1.2 In commercial confidence

The manual is provided in commercial confidence and shall be treated as such.

1.3 Document Revision History

Revision	Date	Description of changes
8.1.1 A	2023-07-05	Added CLI for converter Added llfMode Added clear CLI history Updated ACL adminStatus Added extra info about usage of port number for sftpuser on nodes with shelf controller Added example for put commands with sftpuser
8.1.2 A	2023-08-09	No update
8.1.3 A	2023-10-06	Added commands for SNMPv3 Removed TFTP
8.1.4 A	2023-10-09	No update
8.1.4 B	2023-10-24	Added command “config interface <interface id> wssDropAttenuation”
8.1.5 A	2023-11-01	No update
8.1.6 A	2023-11-30	No update
9.0.1 A	2024-01-22	Added commands for G.826 15min and 24h PM New rescue-cli commands
10.0.1 A	2024-07-04	Updated text and examples for generating and uploading techlogs Added show alarm list command Commands for changing booster gain on DCP-R Commands for changing syslog identifcation settings
10.0.1 B	2024-07-08	Removed reboot chassis from rescue CLI Added chapter about reboot Updated SW upgrade chapter
10.0.1 C	2024-07-11	Updated SW upgrade chapter with a section for cases with SW upgrade on the local computer.
10.0.2 A	2024-09-05	Updated show and config commands for interface ports in DCP-R Added clarification for reboot in standard CLI and rescue CLI

		Added command for setting cdSearchRange Updated SW upgrade instruction from local computer
10.0.2 B	2024-10-23	Added allowed chatacters for SNMP community Added CLI commands for eSNR
10.1.1 A	2024-11-20	No update
11.0.1 A	2024-12-12	Updated with commands for flexgrid in ROADMs Added commands for eeprom dump
11.0.3 A	2025-02-05	Show network mgmt remoteManagement command added Updated commands for config network tunnel Added commands for eSNR settings
11.1.1 A	2025-03-20	Added commands for Raman and OSPF Updated allowed characters for user passwords Updated automation mode for DCP-M and DCP-2 Updated config user command
11.3.1 A	2025-04-15	Added commands for virtual ports on DCP-R
12.0.1 A	2025-06-23	Added commands for updating the list of certified transceivers Updated command for SNMP trapdestination Added commands for gNMI

2 CLI introduction

A Command-Line Interface (CLI) is a mechanism for interacting with a computer operating system or software by typing commands to perform specific tasks. The CLI is used to configure, monitor, and maintain the DCP-2. The CLI is text-based and each command is usually associated with a specific task. You can give the commands described in this manual locally from the console or remotely from a terminal emulator such as putty or xterm.

CLI commands and options are case-sensitive. For example, when you enter the config command, enter it all in lowercase. It cannot be CONFIG or Config.

You can enter partial CLI keywords,

- Enter the minimum number of letters to uniquely identify a command. For example, you cannot enter “in” as a partial keyword because both “interface” and “inventory” begin with the letters “in”. You can enter “int”, however, as a partial keyword because only one command begins with those three letters.

The TAB key auto-completes keywords in commands. Enter the minimum number of letters to uniquely identify a command. In case of ambiguity (more than one completion option is available, that is), then you can hit double tabs to obtain the disambiguation options.

The UP and DOWN arrow keys display previously entered commands

You may request context-sensitive help at any time by entering a “***?***” on the command line. This will show a list of choices for the word you are on, or a list of top-level commands if you have not typed anything yet.

For example, at the CLI command prompt, type: “***?***” to get the top-level commands.

(CLI does not display the question mark).

The DCP platform also has a rescue CLI that can open up the root account and perform some basic reboot and cold starts commands.
The rescue CLI is automatically started if the CLI prompt doesn’t show up during 5 minutes after logging in to the system.

2.1 Syntax Conventions

To help you identify the parts of a CLI command, this section explains conventions of presenting the syntax of commands.

Syntax Convention	Description	Example
< > Angled brackets	Indicates a value/variable that must be replaced.	<IPv4 address>
[ ] Square brackets	Optional parameters.	[gateway IPv4 address]

Do not type the angled or square brackets, vertical bar, or braces in command lines. This guide uses these symbols only to show the types of entries.

2.2 Wildcard support

A wildcard option is available for CLI command “config slot x och” subcommands to configure multiple channels at once.
E.g. “config slot 1 och och-1/1/edfa/[9220,9330-9370,94*] portMode off”

The list of channels can be created with comma separation for individual channels, a range of channels defined by first and last channel or wildcard “*” to represent all available numbers for that position.

2.3 Top-level commands

```
admin@Stockholm-97>
bye          - Logout from shell.
clear        - Clear parameter.
config       - Configure system information.
exit         - Logout from shell.
logout       - Logout from shell.
nc           - Netcat to destination.
ping         - Send echo messages.
quit         - Logout from shell.
reboot       - Reboot of the system.
rescue-cli   - Change to rescue CLI mode.
show         - Show system information.
swupgrade    - Software image management.
techlog      - Upload techlog for technicians.
traceroute   - Trace route to destination.
who          - Shows information about logged in users.
```

3 CLI commands matrix

This chapter will list all CLI commands and define in which DCP families they can be used.

3.1 Standard CLI

Command	Supported products	Description
aaa	All	AAA (Authentication, Authorization and Accounting)
aaa:radius:adminStatus	All	
aaa:radius:primaryServer	All	
aaa:radius:primaryServer:address	All	
aaa:radius:primaryServer:key	All	
aaa:radius:primaryServer:port	All	
acl	All	ACL (Access Control List)
acl:adminStatus	All	
acl:rule	All	
automationMode	DCP-M, DCP-R	
backup	All	Backup and restore
backup:list	All	
backup:download	All	
backup:generate	All	
backup:remove	All	
backup:restore	All	
backup:upload	All	
backup:validate	All	
chassis	DCP-R	Configure chassis
chassis:<number>:hostname	DCP-R	
cli		CLI (Command-Line-Interface) settings
cli:serviceinterruptionquestions	All	
chpowerlevel	DCP-M	Applicable in automationMode embedded
crypto		Encryption preferences
crypto:cryptoMode	DCP-2	
date	All	Date and time
hostname	All	System hostname
inactivitytimeout	All	CLI inactivitytimeout

interface	All	Interface paramters (not including management interfaces)
interface:active	All	
interface:diagnostics	DCP-108, DCP-404, DCP-101	
interface:<port>	All	
interface:<port>:description	All	
interface:<port>:formatDetection	DCP-M, DCP-R	
interface:<client port>:opticalControlMode	DCP-M, DCP-R	Applicable in automationMode managedCLI
interface:<line port>:targetOutputPower	DCP-M, DCP-R	Applicable in automationMode managedCLI
interface:<line port>:darkMode	DCP-M	
inventory	All	Inventory in the node
linkview	DCP-M, DCP-R	Linkview information
linkview details	DCP-M, DCP-R	
network	All	Network (management) interfaces
network:<port>:description	All	
network:ipv4dns	All	
network:local:ipv4address	All	
network:mgmt:ipv4address	All	
network:mgmt:remoteMgmt	DCP-M	
network:tunnel	DCP-M, DCP-F, DCP-R	
network:interfaces	All	
network:status	All	
netowrk:lldp	DCP-R	
network:lldp:local:neighbor	DCP-R	
network:lldp:remote:neighbor	DCP-R	
node	DCP-F, DCP-R	Node information
node:info	DCP-R	
node:info:geolocation	DCP-R	
node:info:id	DCP-R	
node:member	DCP-R	
node:member:add	DCP-R	
node:member:replace	DCP-R	
node:topology	DCP-F, DCP-R	
node:topology:apply	DCP-R	

node:topology:internal	DCP-R	
ntp	All	NTP (Network Time Protocol) server information
ntp:adminStatus	All	
ntp:primaryserver	All	
ntp:primaryserver:	All	
ntp:primaryserver:	All	
ntp:status	All	
oscLinkView	DCP-M, DCP-R, DCP-F	OSC linkview information like span loss, fiber length
oscLinkview:detail	DCP-M, DCP-R, DCP-F	
slot	DCP-2	Traffic module information
slot:alarm	DCP-2	
slot:<module pos>:alarm:active	DCP-2	
slot:<module pos>:alarm:log	DCP-2	
slot:<module pos>:combinedMode	DCP-F	
slot:<module pos>:interface	DCP-2	
slot:<module pos>:interface:diagnostics	DCP-404, DCP-101, DCP-1610	
slot:<module pos>:interface:<port>:adminStatus	DCP-1610, DCP-101, DCP-F, DCP-404, DCP-108	
slot:<module pos>:interface:<port>:attenuation	DCP-F	
slot:<module pos>:interface:<port>:channelId	DCP-1610, DCP-101	
slot:<module pos>:interface:<port>:description	DCP-1610, DCP-101, DCP-F, DCP-404	
slot:<module pos>:interface:<port>:fec	DCP-101, DCP-108	
slot:<module pos>:interface:<port>:frequency	DCP-101	
slot:<module pos>:interface:<port>:gain	DCP-F	
slot:<module pos>:interface:<port>:laserForcedOn	DCP-1610, DCP-404	
slot:<module pos>:interface:<port>:loopback	DCP-1610, DCP-101, DCP-404, DCP-108	
slot:<module pos>:interface:<port>:losAlarm	DCP-F	
lot:<module pos>:interface:<port>:otdr	DCP-F	

slot:<module pos>:interface:<port>:transceiver	DCP-404, DCP-101, DCP-1203	
slot:<module pos>:interface:<port>:transceiver:gridSpacing	DCP-404, DCP-1203	
slot:<module pos>:interface:<port>:transceiver:frequency	DCP-404, DCP-101, DCP-1203	
slot:<module pos>:interface:<port>:transceiver:prbs	DCP-404, DCP-1203	
slot:<module pos>:interface:<port>:transceiver:txOutputPower	DCP-404, DCP-1203	
slot:<module pos>:interface:<port>:transceiver:pulseShaping	DCP-404, DCP-1203	
slot:<module pos>:interface:<port>:transceiver:useLosOverride	DCP-404	
slot:<module pos>:interface:<port>:transceiver:losThreshold	DCP-404	
slot:<module pos>:och	DCP-F	
slot:<module pos>:och:<port>:description	DCP-F	
slot:<module pos>:och:<port>:portMode	DCP-F	
slot:<module pos>:och:<port>:wantedOutputPower	DCP-F	
slot:<module pos>:ocm	DCP-F	
slot:<module pos>:ocm:ocm-rx	DCP-F	
slot:<module pos>:ocm:ocm-rx:monitorPortOffset	DCP-F	
slot:<module pos>:reboot	DCP-1610, DCP-F, DCP-404, DCP-101, DCP-108	
slot:<module pos>:transponder	DCP-2	
slot:<module pos>:transponder:<id>:service	DCP-1610, DCP-108	
slot:<module pos>:muxponder	DCP-404	
slot:<module pos>:muxponder:trafficMode	DCP-404	
snmp	All	SNMP (Simple Network Management Protocol) information
snmp:community	All	
snmp:syscontact	All	
snmp:syslocation	All	

snmp:sysname	All	
snmp:testtrap	All	
snmp:trapdestination:add	All	
snmp:trapdestination:delete	All	
syslog	All	Syslog information
syslog:remote	All	
syslog:remote:access	All	
syslog:remote:adminstatus	All	
syslog:remote:alarm	All	
syslog:remote:config	All	
syslog:remote:primaryServer	All	
syslog:remote:primaryServer:address	All	
syslog:remote:primaryServer:port	All	
syslog:remote:primaryServer:protocol	All	
syslog:remote:secondaryServer	All	
syslog:remote:secondaryServer:address	All	
syslog:remote:secondaryServer:port	All	
syslog:remote:secondaryserver:protocol	All	
syslog:status	All	
system	All	System information
system:rootaccess	All	
techlog	All	Techlog information
techlog:webserver	All	
timezone	All	Timezone information
topology	DCP-F	Topololgy information
topology:internal	DCP-F	
transponder	DCP-1610, DCP-108, DCP-404	
uptime	All	Time since system was started
user	All	User information and password change
user:chpasswd	All	
user:netconf	DCP-R	
user:info	All	
version	All	SW version of included modules

3.2 Rescue CLI

Command	Supported products	Description
slot	DCP-2	
slot:<slot number>	DCP-2	
slot:<slot number>:coldStart	DCP-2	Power off the modue for 10 seconds
slot:<slot number>:reboot	DCP-2	Reboot a module
system	All	Configure root access
system:rootacess	All	
reboot	All	Reboot all modules and chassis. Note! DCP-R members must be rebooted separately
Techlog generate	All	Generates a techlog
Config techlog webserver enable/disable	All	Enable or disable the techlog webserver.

4 Rescue CLI commands

The DCP platform has a rescue CLI that can open up the root account and perform some basic reboot and cold starts commands.
The rescue CLI is automatically started if the CLI prompt doesn't show up during 5 minutes after logging in to the system.
It is possible to abort the normal startup and enter rescue CLI during boot by pressing Ctrl+R.
The rescue CLI can also be started manually with a CLI command.

The CLI command to start rescue CLI is:

```
admin@Stockholm-97>rescue-cli
Rescue CLI Mode
==================================
System type        : DCP-2
System HW revision : R2A
Serial number      : F1723DCP20012
Software version   : dcp-release-7.0.1-rc8
```

The commands available in rescue CLI is following

```
rescueCLI->
bye     - Logout from shell.
config  - Configure system information.
exit    - Logout from shell.
logout  - Logout from shell.
quit    - Logout from shell.
reboot  - Reboot of the chassis.
show    - Show system information.
```

4.1.1 show system rootaccess

This command shows if the support root user account has been granted root access.

```
rescueCLI->show system rootaccess

root access: enabled
```

4.1.2 reboot

This command is used to reboot the complete node. Unlike the normal reboot process, rescue-CLI can initiate a reboot even when there is a software communication issue between the chassis and the slot module.

```
rescueCLI->reboot

The system is going down for reboot NOW! (pts/0) (Wed May 11 17:27:58 2022):
```

4.1.3 config slot <x> reboot

This command allows for rebooting a specific slot through direct signaling from the chassis to the slot module. Unlike the normal reboot process, rescue-CLI can initiate a reboot even when there is a software communication issue between the chassis and the slot module. This makes it a reliable option when standard software commands cannot be used.

```
rescueCLI->config slot 1 reboot

Reboot in progress, it may take up to 1 minute for the traffic module to be
fully available again.
```

4.1.4 reboot chassis

This command is used to reboot the chassis only. Slot modules are not rebooted in this case.

```
rescueCLI->reboot chassis

Rebooting slot 1.....done
Rebooting slot 2.....done
Rebooting chassis....done

Reboot in progress, it may take a few  minutes for the system to be fully
available again.

rescueCLI->
Broadcast message from root@DCP213 (Thu Sep  5 09:09:53 2024):

The system is going down for reboot NOW!
```

4.1.5 config slot <x> coldStart

This command is used to coldStart a specific slot.

```
rescueCLI->config slot 1 coldStart

This command is traffic interrupting.
Are you sure you want to coldstart the traffic module in slot 1? (Yes/NO)? y

Turning off power for the traffic module for 10 seconds, please wait.

Reset in progress, it may take up to 1 minute for the traffic module to be fully
available again.
```

4.1.6 config system rootaccess

This command is used to set enable or disable the root access for the support root user account.

The DCP platform got a root user account that can be used by support to debug issues with the system. By default this account is only enabled on the console port. This account can also be fully disabled or fully enabled by the user. It is recommended that the customer makes an active decision to decide what level of access the root user should have.
Possible settings:

- Disabled – The root account is disabled.
- Enabled – The root account is open over ssh and console.
- enableConsole – The root account is only open on console port.

```
rescueCLI->config system rootaccess enableConsole

rootaccess set to 'enableConsole'.
```

4.1.7 factorydefault

It is possible to do factory default to reset all configurations in the current SW release.

The factorydefualt command makes the running image set to factory default settings. The system is set to factory default and is done on both chassis and (when applicable) slot modules.
If running this command on a chassis with slot modules, the software version on the modules should match the one on the chassis for compatibility reasons.

The command factorydefault can be run on its own or with extra option. The option that is available is:

[keepNetworkSettings] - Keep IP Address, Netmask and Gateway.

```
rescueCLI->factorydefault

(enter)  - Execute the command.

[keepNetworkSettings] - Keep IP Address, Netmask and Gateway.

Description:

This command makes the running image set to factory default settings. Factory
default is done on both chassis and slot modules (when applicable).

If running this command on a chassis with slot modules, the software version on
the modules should match the one on the chassis for compatibility reasons.

rescueCLI->factorydefault

A factory default will reset all parameters and all saved configurations.
This command requires the node to reboot.
Are you sure you want to continue? (Yes/NO): y

System is restarting...
```

4.1.8 Generate a techlog to be uploaded with FTP, HTTP, SCP or SFTP

After logging in to the system, enter the command “techlog ?”

There you will find different options on how to upload the techlog depending on which protocol suits you best. It can either be FTP, HTTP, SCP or SFTP.

Here is a description of the command syntax and an FTP example:

```
rescueCLI->techlog generate local

Creating techlog.
Please be patient. This operation may take several minutes to
finish.

Techlog created.
```

4.1.9 config techlog webserver

This command is used to enable or disable the web server on port 80(HTTP) used to fetch a techlog.

```
rescueCLI->config techlog webserver

disable  - Disable techlog webserver.
enable   - Enable techlog webserver.

Description:
Command to enable or disable the web server on port 80(HTTP) used to fetch a techlog.

rescueCLI->config techlog webserver
```

5 CLI commands

5.1 SW Upgrade and Downgrade

This chapter explains how to upgrade or downgrade the software of the DCP platform. An upgrade can be a patch upgrade or a full upgrade.

The processes for upgrade and downgrade are quite similar for all the DCP families, i.e. DCP-M, DCP-2, DCP-F and DCP-R.

This chapter will distinguish between software images and system configurations.

A ***release installation file*** (.tar file) is the package to be used for installation of a specific DCP release version.

A ***software image*** is an installed DCP release which contains both the DCP software and system configuration for the specific release.

A ***system configuration*** is defined as the configuration of different parameters in a node. Only one system configuration can be associated with one software image.

5.1.1 SW structure

The SW structure differs a bit between different products. One node may consist of just one single chassis or multiple chassis. A single chassis may also contain multiple slot modules. The DCP product families can be divided into 3 groups:

Product series	Chassis group
DCP-M	Single chassis
DCP-2	Single chassis with multiple slot modules
DCP-F	Single chassis with multiple slot modules
DCP-R	Multiple chassis

Single chassis group = Only one chassis belongs to the node.
The software image and system configuration is stored on the chassis.

Single chassis with multiple slot modules group = Only one chassis belongs to the node, but several slot modules can be included.
The software image and system configuration is stored on the chassis. Slot modules also contain software images. The software image on the chassis and on the slot modules should be the same. The alarm “Software version mismatch” will be shown if the major or minor release index differs. In this case it is necessary to upgrade/downgrade the release

image of the slot module.

Multiple chassis group = Several chassis may belong to the same node.
The software image and system configuration is stored on all chassis. Individual chassis also contain software images. The running software image on all chassis should be the same. If the software image differs between different chassis it is necessary to upgrade/downgrade the chassis that deviates.
For DCP-R a node will include both a shelf controller and one or more DCP-R chassis.

5.1.2 Software images

Several software images can be saved on a unit, but only one can be running at a time. The status of different software images can be shown with the command "*swupgrade list".* See more info in a separate section.

If there is not enough space to download a new software image the system will automatically remove the oldest software image. Old software images can also be removed manually by using the command *"swupgrade remove <software image name>"*

5.1.3 System configurations

The system configuration of the currently running release can be converted to the new format of a newer release as long as the upgrade follows pre-defined steps. However, the system configuration will not be converted when downgrading. It means that the current system configuration will be lost after downgrade.

The exception is if the system already has an installed software image from the release we are upgrading or downgrading to. If a previous system configuration exists, then that system configuration will be applied to the system after upgrade/downgrade. In this case the current system configuration will be lost and the previous one will be activated. To avoid this, it is necessary to clear the previously installed software image. See more info in a separate section.

5.1.4 Verify running and installed images

This command lists all installed or downloaded software images. Versions with "Boot Prio" set are installed. Other listed images without a Boot Prio and visible under "Image file" are only downloaded but not installed.

For example:

```
admin@smartoptics-dcp>swupgrade list
Chassis:
  Version               Boot Prio  Is Running  Image file
  --------------------  ---------  ----------  --------------------
  dcp-release-4.0.1     0          true
  dcp-release-x.y.z                false       dcp-release-x.y.z.tar
admin@smartoptics-dcp>
```

It is always the software image with boot prio 0 that will be activated at next reboot. The command "*swupgrade set boot <image version>*" can be used to define which software image that should have boot prio 0.

Note that for DCP-R nodes the software image for the shelf controller is not presented using the *"swupgrade list"* command. For that unit use command show version.

5.1.5 Removing previously installed software images

The previous software image is possible to remove after installing a new software image.

The following command removes a specified software image. The running software image cannot be removed.

```
admin@smartoptics-dcp>swupgrade remove dcp-release-4.0.1
```

5.1.6 SW Upgrade Compatibility

The current system configuration can be migrated to a new release by performing an upgrade in pre-defined steps (e.g., R6.1.2 to R7.1.x). If the pre-defined steps are NOT followed (e.g., R6.1.1 to R7.1.1), the system configuration migration may fail and the system configuration may not work properly.

Normally it is allowed to upgrade directly between two major releases, e.g. 8.x.x to 10.x.x, but it is recommended to check release notes for possible upgrades and comments.
Most SW upgraded are not traffic affecting, but in special case the firmware is upgrade and that could be traffic affecting. Check the release notes to see if there are any comments about this.

5.1.7 Single chassis

5.1.7.1 SW upgrade process for single chassis

Products in the single chassis group can be upgraded according to the steps in the SW upgrade compatibility matrix in previous chapter.

See chapter "How to install a new Software image".

5.1.7.2 Replacement process for single chassis

A new replacement chassis can get the same system configuration as the old chassis if the same Software image is used and the backup is restored. Upgrade to the same Software image first and then restore the system configuration.

See chapter "How to install a new Software image" to install same Software image.
See separate chapter with about the restore command.

5.1.8 Slot modules

5.1.8.1 SW upgrade/downgrade process for a slot module

All slot modules in DCP chassis must have the same SW release as the chassis. The alarm “Software version mismatch” will be shown if the major or minor release index differs. In this case it is necessary to upgrade/downgrade the release of the slot module.

Note that the SW for the slot module and the chassis can’t differ too much. It must be possible to do the upgrade in one step according to the upgrade compatibility matrix. Example: A slot module with R5.x.x can not be upgraded in a chassis running R7.x.x. Contact support in this case.

There is also a special case for chassis with R6.1.2 and slot modules in R7.x.x. In this case it is not possible to downgrade the modules from R7.x.x to R6.1.2. Either upgrade the chassis to R7.x.x or contact support.

The SW for the new slot module can be upgraded/downgraded by running the same swupgrade command as for the whole DCP chassis. It is only the slot modules with the wrong SW that will be upgraded/downgraded. DCP chassis and other slot modules with correct SW from start will not be affected by the upgrade.

See chapter “How to install a new Software image”.

5.1.8.2 Replacement process for a slot module

A new slot module that is inserted in same slot as the replaced unit will automatically get the same system configuration as the previous one when the release is the same. If the SW revision on the new card is different it is necessary to upgrade/downgrade the SW to same release as the chassis.

Note that the SW for the inserted slot module and the chassis can’t differ too much. It must be possible to do the upgrade in one step according to the upgrade compatibility matrix. Example: A slot module with R5.x.x can not be upgraded in a chassis running R7.x.x. Contact support to in this case.

There is also a special case for chassis with R6.1.2 and slot modules in R7.x.x. In this case it is not possible to downgrade the modules from R7.x.x to R6.1.2. Either upgrade the chassis to R7.x.x or contact support.

The SW for the new slot module can be upgraded/downgraded by running the same swupgrade command as for the whole DCP chassis. It is only the slot modules with the wrong SW that will be upgraded/downgraded. DCP chassis and other slot modules with correct SW from start will not be affected by the upgrade.

See chapter “How to install a new Software image”.

5.1.9 Multi-chassis nodes

5.1.9.1 SW upgrade process for multi-chassis nodes

A ROADM node can consist of multiple chassis. All chassis in a multi-chassis node can be upgrade at same time.

See chapter “How to install a new Software image”.

5.1.9.2 Replacement process for multi-chassis nodes

A new chassis that is inserted in same position as the replaced unit will automatically get the same system configuration as the previous one. If the SW revision on the new unit is different it is necessary to upgrade/downgrade the SW to same release as the chassis.

Note that the SW for the inserted unit and the master chassis can’t differ too much. It must be possible to do the upgrade in one step according to the upgrade compatibility matrix. Example: A new chassis with R5.x.x can not be inserted and upgraded in a multi-chassis node running R7.x.x.

The SW for the new DCP-R unit can be upgraded/downgraded by running the same swupgrade command as for the whole DCP-R node. It is only the chassis with the wrong SW that will be upgraded/downgraded. DCP-R chassis with correct SW from start will not be affected by the upgrade.

See chapter “How to install a new Software image”.

5.1.10 SW downgrade

It is possible to downgrade the system to an older release by installing a Software image from an older release. However, the system configuration will not be converted at downgrade. It means that the current system configuration will be lost after downgrade.

The downgrade process is the same as for upgrade.
See chapter “How to install a new Software image”.

5.1.11 SW fallback

It is possible to do a fallback of the SW to a previously installed Software image. This means that the system configuration will be reverted back to the one used in the previously installed Software image.

See chapter “Switching between existing Software images”.

5.1.12 How to install a new Software image

5.1.12.1 SW install when SW is available on a server

The following steps are needed for a SW upgrade:

1. Remove old Software images
   Note that max 3 SW images can be stored at the same time. It is necessary to remove old SW images so that max 2 SW images remain before installation of the new SW.
   The list of stored SW images can be viewed with the command:
   swupgrade list
   The following command removes both downloaded images and previously installed images. Running image will not be removed.

```
admin@smartoptics-dcp>swupgrade remove dcp-release-4.0.1
```

2. Obtain DCP Software image
   Current DCP software can be obtained from Smartoptics portal. The format of the software file name is dcp-release-x.y.z.tar. Save the downloaded image at a local on a local server.

   A configured FTP, HTTP, SCP, SFTP server must be running within the same subnet or a routed connection (default gateway) is required to access the downloaded image.

   Place the new software image dcp-release-x.y.z.tar on the FTP, HTTP, SCP, SFTP server to which the DCP chassis has a connection.

3. Download the Software image to the chassis
   Use HTTP to retrieve the image from the remote server. Download the new software image to the DCP chassis with the command: swupgrade download <URL>”

```
<URL>  - The URL to download the image from.
Command description: swupgrade download <URL>
The URL shall be in the following format: <protocol>://[user]:[password]@<IP
Address>:/<Path to image>
<protocol> - Can be FTP, HTTP, SCP or SFTP.
[user] and [password] is needed for FTP, SCP and SFTP.
<IP Address> - IP address to where the file shall be downloaded from.
<Path to file> - The path to the file including the image name.
admin@smartoptics-dcp>swupgrade download
```

```
admin@smartoptics-dcp>swupgrade download http://10.10.134.201/DCP-Release/dcp-release-x.y.z.tar
Attempting to download image from http://10.10.134.201/DCP-Release/dcp-release-x.y.z.tar
Successful download of image version dcp-release-x.y.z
admin@smartoptics-dcp>
```

4. Install new Software image
   The installation and activation of the new SW can be done in one step or two steps.

   Installation is done with the command: ***swupgrade set boot <image version>***
   This command installs the new image. Progress for installation on chassis will be shown.

   View all SW images.
   swupgrade list

   Select the image to install and use the name from swupgrade list. (don’t use .tar)

Example of installation without reboot

```
admin@smartoptics-dcp>swupgrade set boot dcp-release-x.y.z
Setting boot image on chassis:
Creating new volumes ..
Copying kernel image to volume ..........
Copying rootfs image to volume ..............................
Formatting persistent volume .
Copying persistent files to volume .
done
admin@smartoptics-dcp>
```

5. Activate new Software image
   Activation is done with the command: ***reboot***
   This command reboots all chassis and slot modules in one node and activates the image with boot prio 0.
   Example of activation with reboot

   ```
   admin@smartoptics-dcp>reboot
   admin@smartoptics-dcp>
   Broadcast message from root@DCP-M-19 (Sun Apr 15 20:34:18 2018):
   The system is going down for reboot NOW!
   ```

   For slot modules it is possible to do reboot for an individual slot module with the command: ***config slot <slot> reboot***
   Note that it is not possible to reboot a specific slot if the slot contains a board with SW image from R6.1.2 or earlier.

6. Remove old Software images
   The old files of the previous Software images can be removed after installing the new image.
   The following command removes both downloaded images and previously installed images. Running image will not be removed.

   ```
   admin@smartoptics-dcp>swupgrade remove dcp-release-4.0.1
   ```

Installation+activation can be done together in one step with the command***: swupgrade set boot <image version> reboot***
This command installs the new image and reboots. It can be used as an alternative to step 3 and 4 in the list above.

Example of installation and activation in one step:

```
admin@L8-97>swupgrade set boot DCP-Master.20220823-1036.2073e5d reboot

Setting boot image on chassis:

Extract image .....
Executing upgrade script .........
Creating new volumes ..
Copying kernel image to volume .....
Copying device tree image to volume .
Copying rootfs image to volume
.....................................................................
Copying persistent image to volume ..
Set boot image .

Broadcast message from root@L8-97 (Tue Aug 23 09:56:54 2022):

The system is going down for reboot NOW!

Done

Setting boot image on traffic module in slot 1:

Done

Setting boot image on traffic module in slot 2:

Done

admin@L8-97>Connection to 10.10.72.97 closed by remote host.Connection to
10.10.72.97 closed.
```

5.1.12.2 SW install when SW is available on the local computer

- **Step 1: Select Smartoptics Software Image**
  Your first step in the upgrade procedure is to select the correct Smartoptics software release. Ensure you choose the correct release by first reading in the correlated release notes for information about features, enhancements, bug fixes and known issues.
- **Step 2: Download the Smartoptics Software Image to your workstation**
  Download the Smartoptics Software Image onto your workstation or PC from http://support.smartoptics.com (registered customers only).

  Note: The format of the Smartoptics Software filename is dcp-release-x.y.z.tar.
- **Step 3: Verify that your workstation has IP Connectivity to the DCP-chassis**
  The workstation must have a network connection to the DCP-chassis and must be able to ping the IP address of the DCP-chassis targeted for a software upgrade. In order to achieve this connection, the DCP-chassis and the workstation must have an IP address in the same range or a default gateway configured. Check the IP address of your workstation in order to verify this configuration.
- **Step 4: Enable sftpuser on the the DCP-chassis**
  From R8.0 it is possible to enable a new user called sftpuser. Enabling this user will simplify how files can be downloaded and uploaded to the DCP nodes. This

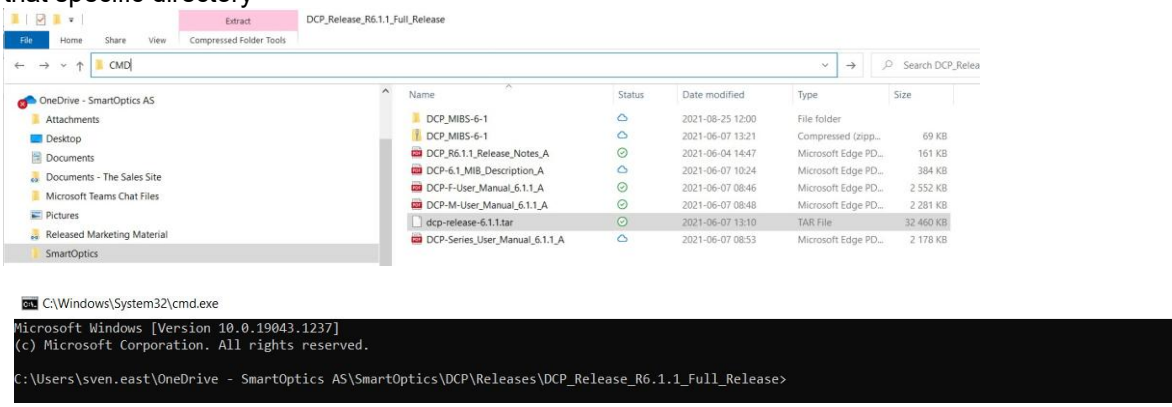
user will also have access rights to manage the files in the file system, e.g. backup, techlog etc.

```
admin@hostname>config user sftpuser enable

Please enter password for SFTP user Enter new password:
Confirm new password:

SFTP user account set to 'enabled'
```

1. **Step 5: Upload Smartoptics Software Image to the DCP-chassis**
   Now that you have IP connectivity you can upload the Smartoptics Software Image into the DCP- chassis.
   1. Use you windows explorer and navigate to the folder where the Smartoptics Software Image is stored.
   2. Type CMD in the browser address Bar to open the command prompt in that specific directory



   3. In the windows command prompt login with SFTP to the DCP-chassis by using the command:

```
sftp.exe sftpuser@192.168.0.1
```

   4. copy the image from the workstation to the DCP-chassis /swupgrade/ directory with the command:

```
put dcp-release-10.0.1.tar /swupgrade/dcp-release-
10.0.1.tar
```

   5. Exit SFTP by using the command: exit

```
exit
```

- **Step 6: Locally copying the Software Image from /swupgrade/ to the DCP-chassis**
  1. Login to the DCP-chassis which should be upgraded.
  2. Copy the software image from /swupgrade/ to the DCP-chassis with the

command:

```
swupgrade download file:///swupgrade/dcp-release-10.0.1.tar
```

- **Step 7: Install the new software to the DCP-chassis**
  1. Install the new image with the command:

```
swupgrade set boot dcp-release-10.0.1
```

Example

```
admin@hostname>swupgrade set boot dcp-release-10.0.1

Setting boot image on chassis:

Creating new volumes ..
Copying kernel image to volume .....
Copying rootfs image to volume ..... Formatting persistent volume.
Copying persistent files to volume
done

admin@hostname>
```

The install process takes a couple of minutes. When the copy process is in progress, messages are displayed that indicate which file has been accessed.

The full stop mark "." indicates that the installation process is in progress.

- **Step 8: Verify the new software boot prio**
  Use the swupgrade list command in order to check that the new software has been installed and will be used after a reboot. The "Boot Prio” value 0 should be displayed for the newly installed software in the listed output.

```
swupgrade list
```

- **Step 9: Reboot the DCP-chassis**
  Reload the DCP-chassis with the command:

```
reboot
```

- **Step 10: Verify Smartoptics Software version**
  Verify that the DCP-chassis runs with the proper Smartoptics Software version. After the reboot is complete, the DCP-chassis should run the desired Smartoptics Software version. Use the show version command in order to verify the currently used Smartoptics Software version.
- **Step 11: Removing previous installed images (Optional)**
  Old files of the previous SW images can be removed after installing the new image.

The following command removes both downloaded images and previously installed images. Running image will not be removed.

```
swupgrade remove dcp-release-9.0.1
```

5.1.13 Switching between existing Software images

It is possible to have multiple Software images installed on a unit, but only one can be running at a time. The status of different Software images can be shown with the command "*swupgrade list".*

Note that each installed Software image will have a certain system configuration associated with it. When we change between different previously installed Software images there will be no conversion of the system configuration. This means that the system configuration associated with the new Software image will be activated and the current system configuration will saved and associated with the current Software image.

Changing between different Software images is done in following steps:

1. List existing Software images
   swupgrade list
2. Select the new Software image that should be activated by setting the boot status.
   swupgrade set boot <image version>
3. Activate new SW on the slot module
   config slot <slot> reboot

5.2 Factory default

It is possible to do factory default to reset all configurations in the current SW release. For removing configs in other SW releases it is necessary to run the swupgrade remove command for those Software images.

The factorydefualt command makes the running image set to factory default settings. The system is set to factory default and is done on both chassis and (when applicable) slot modules.
If running this command on a chassis with slot modules, the software version on the modules should match the one on the chassis for compatibility reasons.

The command factorydefault can be run on its own or with extra options. The three options that are available are:

[keepNetworkSettings] - Keep IP Address, Netmask and Gateway.
[slot x] - Perform command only on slot x.
[chassi x] - Perform command only on chassis x.

Example without options

```
admin@Stockholm>factorydefault

This operation will set the system to factory default settings.
It will reboot the system and the traffic will be interrupted.
Are you sure you want to continue? (Yes/NO): y

Present target system:
- created new persistent volume
- mounted new persistent volume
- copied persistent default files from sw image (/etc/image/factory_defaults)
- remove /mnt/mmc/debug completely
- empty /mnt/mmc/log
- empty /home
- synchronize cached writes to persistent storage
- rename new persistent volume to persistent0
- clear log partition (create new volume new_log and rename it to log)

Present target system is restored to factory default settings. Now rebooting the
system.
```

Example without option “keepNetworkSettings”

5.3 Reboot

It is possible to reboot the system in different ways from standard CLI. The rescue-cli also has some options for reboot. See separate chapter about rescue-cli.

A reboot is normally not traffic affecting. It is only special upgrade cases that include with firmware upgrades that could be traffic affecting. Those cases are presented in the release notes.

For standard CLI it is possible to reboot in three ways:

- reboot of whole node
- reboot of the chassis only
- reboot of a single slot

5.3.1 reboot

This command is used to reboot the complete node.

```
rescueCLI->reboot

The system is going down for reboot NOW! (pts/0) (Wed May 11 17:27:58 2022):
```

5.3.2 reboot chassis

This command is used to reboot the chassis only. Slot modules are not rebooted in this case.

```
admin@DCP211>reboot chassis

Rebooting chassis....done

Reboot in progress. It may take a few minutes for the system to be fully
available again.

Broadcast message from root@DCP211 (Mon Jul  8 13:16:41 2024):

The system is going down for reboot NOW!
```

5.3.3 config slot <x> reboot

This command reboots a specific slot using a software-based command sent from the chassis to the slot module. However, if there is a software communication issue between the chassis and the slot module, the normal CLI reboot will fail. In such cases, a Rescue-CLI reboot is required.

```
rescueCLI->config slot 1 reboot

Reboot in progress, it may take up to 1 minute for the traffic module to be
fully available again.
```

5.4 Using sftpuser for file management

From R8.0 it is possible to enable a new user called sftpuser. Enabling this user will simplify how files can be downloaded and uploaded to the DCP nodes. This user will also have access rights to manage the files in the file system, e.g. backup, techlog etc.

The sftp user can be enabled from the admin account with the following command:

```
admin@hostname>config user sftpuser enable

Please enter password for SFTP user
Enter new password:
Confirm new password:

SFTP user account set to 'enabled'
```

When sftp user is enabled it is possible to login as this user when files should be transferred to and from the DCP nodes. This can be done with external SFTP programs or direct from a command prompt in the operating system on your computer.

Here is an example of how the backup file can be copied from the DCP node to a folder in a Windows computer via the command prompt:

1. Create a new folder for saving your DCP backup files.
   C:\Users\Test.Testson>mkdir C:\DCP_Backup_Files

2. Go to the folder where you want to save your DCP backup files.
   C:\Users\Test.Testson>cd C:\DCP_Backup_Files
3. Use SFTP to copy the file from the DCP node to the computer.

```
C:\DCP_Backup_Files>SFTP sftpuser@10.10.60.166
Password:
Connected to sftpuser@10.10.60.166.
sftp> ls
backup     swupgrade  techlog
sftp> cd backup
sftp> ls
Backup-hostname-DCP-Master.20230315-2139.2b53152-20230324_120818.tar

sftp> get Backup-hostname-DCP-Master.20230315-2139.2b53152-20230324_120818.tar
Fetching /backup/Backup-hostname-DCP-Master.20230315-2139.2b53152-
20230324_120818.tar to Backup-hostname-DCP-Master.20230315-2139.2b53152-
20230324_120818.tar
/backup/Backup-hostname-DCP-Master.20230315-2139.2b53152-20230324_120818.tar
100% 2101KB   2.7MB/s   00:00

sftp>

Exit with ctrl C

C:\DCP_Backup_Files>
```

Example with upload file from PC to DCP chassis.
Use command prompt and navigate to the folder with the file that should be uploaded.

```
C:\Users\Test.Testson\R8_SW>sftp sftpuser@10.10.60.164
Password:
Connected to sftpuser@10.10.60.164.
sftp> put dcp-release-8.1.1.tar
Uploading dcp-release-8.1.1.tar to /swupgrade/dcp-release-8.1.1.tar
dcp-release-8.1.1.tar                       100%   42MB   4.6MB/s   00:09
sftp>
```

The file is now copied to the /swupgrade folder, but it also has to be downloaded to the correct space for SW images. Login to the DCP chassis and do the SW download with following command:

```
admin@hostname>swupgrade download file:///swupgrade/dcp-release-8.1.1.tar

Attempting to download image from file:///swupgrade/dcp-release-8.1.1.tar
Successful download of image version dcp-release-8.1.1
```

For ROADMs and ILAs with shelf controller it is required to enter the port number as well when you access via sftp. Example:

```
C:\Users\Test.Testson>sftp -P 122 sftpuser@10.10.60.160
Password:
Connected to sftpuser@10.10.60.160.
sftp> ls
backup      swupgrade   techlog
sftp>
```

5.5 Show queries

Type show and then (?) in order to display all available show queries

DCP-2

```
admin@DCP-2-404-DCP-F-A22---195>show
aaa                 - Show AAA configuration.
acl                 - Show Access Control List (white list).
alarm               - Show alarms.
backup              - Show backup.
cli                 - Show CLI.
crypto              - Show encryption preferences.
date                - Show date and time.
hostname            - Show system hostname.
inactivitytimeout   - Show inactivity timeout.
interface           - Show interface parameters.
inventory           - Show inventory.
network             - Show network interfaces.
ntp                 - Show NTP configuration.
osclinkview         - Show osclinkview information.
slot                - Show traffic module information.
snmp                - Show SNMP parameters.
status              - Show system status.
syslog              - Show syslog.
system              - Show system.
techlog             - Show techlog.
timezone            - Show current time zone setting.
topology            - Show topology.
transponder         - Show transponder parameters.
uptime              - Show system uptime.
user                - Show user.
version             - Show software version.
```

DCP-M

```
admin@L8-99>show
aaa                 - Show AAA configuration.
acl                 - Show Access Control List (white list).
alarm               - Show alarms.
automationMode      - Show automation mode.
backup              - Show backup.
chpowerlevel        - Show channel power level parameters.
cli                 - Show CLI.
date                - Show date and time.
hostname            - Show system hostname.
inactivitytimeout   - Show inactivity timeout.
interface           - Show interface parameters.
inventory           - Show inventory.
linkview            - Show linkview information.
network             - Show network interfaces.
ntp                 - Show NTP configuration.
osclinkview         - Show osclinkview information.
snmp                - Show SNMP parameters.
status              - Show system status.
syslog              - Show syslog.
system              - Show system.
techlog             - Show techlog.
timezone            - Show current time zone setting.
uptime              - Show system uptime.
user                - Show user.
version             - Show software version.
```

DCP-R

```
admin@Uppsala-110-A-D1>show
aaa                 - Show AAA configuration.
acl                 - Show Access Control List (white list).
alarm               - Show alarms.
automationMode      - Show automation mode.
backup              - Show backup.
cli                 - Show CLI.
date                - Show date and time.
hostname            - Show system hostname.
inactivitytimeout   - Show inactivity timeout.
interface           - Show interface parameters.
inventory           - Show inventory.
linkview            - Show linkview information.
network             - Show network interfaces.
node                - Show node.
ntp                 - Show NTP configuration.
osclinkview         - Show osclinkview information.
snmp                - Show SNMP parameters.
status              - Show system status.
syslog              - Show syslog.
system              - Show system.
techlog             - Show techlog.
timezone            - Show current time zone setting.
uptime              - Show system uptime.
user                - Show user.
version             - Show software version.
```

5.5.1 show aaa radius status

Displays administrative state of the Authentication, Authorization and Accounting.with configured radius settings.

```
admin@DCP-M-19>show aaa radius status

RADIUS admin status     : down
                                        Timeout
  Server     Address  Port  Key  Retry  [seconds]
  ---------  -------  ----  ---  -----  ---------
  Primary             1812       1      3
  Secondary           1812       1      3
```

5.5.2 show aaa tacplus status

Displays administrative state of the Authentication, Authorization and Accounting with configured Tacacs+ settings.

```
admin@smartoptics-dcp>show aaa tacplus status
TACACS+ admin status     : down
                                        Timeout
  Server     Address  Port  Key  Retry  [seconds]
  ---------  -------  ----  ---  -----  ---------
  Primary             49         1      3
  Secondary           49         1      3
```

5.5.3 show acl

Displays administrative state of the ACL and configured ACL rules

```
admin@smartoptics-dcp>show acl
Access Control List is disabled.
  White list:
  --------------
  10.212.148.201
  10.10.134.0/24
  10.10.132.0/24
admin@DCP-19>
```

5.5.4 show alarm

show alarm active displays all currently active alarms

```
admin@smartoptics-dcp>show alarm active
  Location  Alarm name                  Severity  Start time
  --------  --------------------------  --------  -------------------
  psu-1/1   Power supply missing        critical  2018-05-30 07:05:16
  if-1/2/2  Loss of optical input power  critical  2018-0-19 04:59:52
admin@smartoptics-dcp>
```

show alarm log displays all alarms, including already deactivated alarms

```
admin@smartoptics-dcp>show alarm log
 Location   Alarm name                  Severity  Start time          End time
  ---------  --------------------------  --------  ------------------  ------------------
  psu-1/1    Power supply missing        critical  2018-05-30 07:05:16  -
  if-1/2/3   Loss of optical input power  critical  2018-06-06 08:24:50  2018-06-06 09:28:55
  if-1/2/1   Loss of optical input power  critical  2018-06-06 08:24:52  2018-06-06 09:28:55
  trp-1/2/1  AES/GMAC tag mismatch       critical  2018-06-19 04:41:36  2018-06-19 04:41:37
admin@smartoptics-dcp>
```

show alarm list displays all possible alarms for the installed products.

```
admin@Demo-DCP-M-109>show alarm list

  Product          Revision  Location            Alarm                              Severity
  ---------------  --------  ------------------  ---------------------------------  --------
  DCP-M40-PAM4-ZR  all       if-1/line-tx        Exceeded PAM4 channel limit        critical
  DCP-M40-PAM4-ZR  all       if-1/[9210-9600]-rx Loss of optical input power        critical
  DCP-M40-PAM4-ZR  all       if-1/[9210-9600]-rx Unsupported channel detected       minor
  DCP-M40-PAM4-ZR  all       if-1/[9210-9600]-tx Loss of optical output power       critical
  DCP-M40-PAM4-ZR  all       if-1/line-rx        Loss of optical input power(Line)  critical
  DCP-M40-PAM4-ZR  all       if-1/line-rx        Loss of optical input power(OSC)   major
  DCP-M40-PAM4-ZR  all       if-1/line-rx        Loss of OSC link                   critical
  DCP-M40-PAM4-ZR  all       if-1/line-tx        Dark mode enabled                  warning
  DCP-M40-PAM4-ZR  all       chassis             eMMC failure                       critical
  DCP-M40-PAM4-ZR  all       fan-1/1             Fan failure                        major
  DCP-M40-PAM4-ZR  all       fan-1/1             Fan missing                        critical
  DCP-M40-PAM4-ZR  all       psu-1/[1-2]         Power supply failure               major
  DCP-M40-PAM4-ZR  all       psu-1/[1-2]         Power supply unsupported           major
  DCP-M40-PAM4-ZR  all       psu-1/[1-2]         Power supply missing               critical
  DCP-M40-PAM4-ZR  all       chassis             Low disk space                     critical
  DCP-M40-PAM4-ZR  all       chassis             Low disk space                     major
  DCP-M40-PAM4-ZR  all       chassis             Low disk space                     minor
```

show alarm list all displays all possible alarms for all products.

5.5.5 show automationMode (DCP-M)

Displays the currently configured automation mode of the system.

embedded - The node operates in embedded mode. In this mode the units are entirely self-configuring and do not need any settings from the user to operate.

managedCLI - The node operates in managed CLI mode. In this mode the user must set parameters in order for the unit to operate adequately.

```
admin@dcp-19>show automationMode

Automation mode: embedded

admin@dcp-19>
```

5.5.6 show automationMode (DCP-R)

This command displays the currently configured automation mode of the system.

managedNetconf - The node operates in managed CLI mode. This means that some settings can only be done from Netconf.

managedCLI - The node operates in managed CLI mode. In this mode the user can configure everything from CLI

```
admin@ROADM-LC1-DEG1>show automationMode

Automation mode: managedNetconf

admin@ROADM-LC1-DEG1>
```

5.5.7 show backup list

Displays the list of backup files that are stored.

```
admin@dcpf-189>show backup list

  File name                    Backup time                  Size    Description
  ---------------------------  ---------------------------  ------  -----------
  Backup-dcp-release-6.1.1.tar  2021-05-31 19:16:37          166 kb
```

5.5.8 show chpowerlevel

Displays the target Booster and Pre-Amp power levels.

```
admin@dcp-19>show chpowerlevel

Booster Tx mode         : PAM4
Booster Tx target power : 2.4
Preamp Tx mode          : PAM4
Preamp Tx target power  : 9.0

admin@dcp-19>
```

5.5.9 show cli

Displays the setting for warnings for traffic interruption questions.

```
admin@Stockholm-97>show cli serviceinterruptquestions status

service interrupt questions: enable
```

5.5.10 show crypto cryptoMode

Displays the cryptomode of the unit

```
admin@smartoptics-dcp>show crypto cryptoMode
Encryption mode is disabled.
admin@smartoptics-dcp>
```

5.5.11 show date

Displays the date and time configuration of the unit. Date is in yyyy-mm-dd format and time is in hh:mm:ss format.

```
admin@smartoptics-dcp>show date
Local time: 2018-06-19 06:35:52
UTC:        2018-06-19 06:35:52
admin@smartoptics-dcp>
```

5.5.12 show gnmi

Shows the gNMI settings.

```
admin@smartoptics-dcp> show gnmi

mode     - Show gNMI TLS mode.
service  - Show gNMI service status.
tls      - Show TLS settings for gNMI.
```

5.5.12.1 show gnmi tls

Shows the gNMI settings for TLS (Transport Layer Security).

```
admin@hostname>show gnmi tls

clientCert  - Show client certificate validation.
deviceCert  - Show certificate information
privateKey  - Show private key information

admin@hostname>show gnmi tls clientCert

cert  - client cert validation.

admin@hostname>show gnmi tls privateKey info
Type: n/a
Name: n/a
No of Bits: n/a
```

```
smartroot@hostname>show gnmi tls deviceCert info

CA cert

  Index  Key type  Key size  Not before               Not after                Subject                                                  Issuer
  -----  --------  --------  -----------------------  -----------------------  -------------------------------------------------------  -------------------------------------------------------
  1      RSA       2048      Jun 23 12:27:34 2025 GMT  Jul 23 12:27:34 2025 GMT  /C=SE/ST=Stockholm/L=Stockholm/O=SmartOptics/CN=rootCA  /C=SE/ST=Stockholm/L=Stockholm/O=SmartOptics/CN=rootCA

Device cert

  Index  Key type  Key size  Not before               Not after                Subject                                                  Issuer
  -----  --------  --------  -----------------------  -----------------------  -------------------------------------------------------  -------------------------------------------------------
  1      RSA       1024      Jun 23 12:28:32 2025 GMT  Jun 23 12:28:32 2026 GMT  /C=SE/ST=Stockholm/L=Stockholm/O=Smartoptics/CN=hostname  /C=SE/ST=Stockholm/L=Stockholm/O=SmartOptics/CN=rootCA

smartroot@hostname>
```

5.5.13 show hostname

Displays the hostname of the unit.

```
admin@smartoptics-dcp>show hostname
smartoptics-dcp
admin@smartoptics-dcp>
```

5.5.14 show inactivitytimeout

The inactivity time out is the duration the session will be kept open if no input is being made. Once the time out period has passed, the session will automatically be closed.

```
root@hostname>show inactivitytimeout

Automatic inactivity logout time is 10 minutes.
```

5.5.15 show interface (DCP-F)

The command presents the operational and optical status of interfaces. The output is by default listing all interfaces in the system. The output can be filtered to only show active interfaces using the command ‘show interface active’.

```
admin@dcpf-189>show interface

                Status            Rx power  Tx power                Channel  Admin
  Interface     [Rx/Tx]    Alarm  [dBm]     [dBm]     Format  FEC   Id       status  Description
  ------------  ---------  ------  --------  --------  -------  ----  -------  ------  ----------------
  Slot 1:       DCP-F-R22

   if-1/1/1     n/a        no          n/a       n/a  n/a      n/a   n/a      up      VOA From  Site 2

   if-1/1/2     n/a        no          n/a       n/a  n/a      n/a   n/a      up

   if-1/1/edfa1 idle/up    no        -60.0      -2.0  wdm      n/a   n/a      up

  Slot 2:       DCP-F-A22

   if-1/2/1     up/up      no          n/a       n/a  voa      n/a   n/a      up

   if-1/2/2     idle/up    no        -99.0       3.5  osc      n/a   C51      up

   if-1/2/edfa1 up/up      no         -9.5      18.5  wdm      n/a   n/a      up

admin@dcpf-189>
```

Column definitions:

- **Interface:** Shows the interface name of the system in the format if <chassis>/<slot>/<interface>, e.g. "if-1/2/4".
- **Status:** Identifies the status of Rx and Tx port. Status level can be up, down or idle. Idle is present if the channel has never been activated.
  Rx up indicates we have signal and lock on the incoming signal.
  Tx up indicates that the laser is on.
- **Alarm:** Highest alarm severity on interface.
- **Rx Power:** Optical power received at the Rx port.
- **Tx Power:** Optical power transmitted at the Tx port.
- **Format:** Traffic format configured for this interface.
- **FEC:** Identifies if the interface has FEC enabled/disabled.
- **Channel Id:** DWDM or CWDM channel identification.
- **Admin Status:** Operational status of the interface. Can be up or down.
- **Description:** Configurable interface description text.

5.5.15.1 show interface <interface id>

The command presents the current configuration and optical status of the actual interfaces.

```
admin@dcpf-189>show interface if-1/2/1

  Interface   : if-1/2/1
  Description :

Status:

  Admin status   : up
  Status [Rx/Tx] : up/up

  Set attenuation    : 20.0 [dB]
  Actual attenuation : 20.0 [dB]
  Insertion loss     : 0.7 [dB]

Transceiver:

  Type          : VOA
  Part Number   : SO-SFP-VOA-01
  Serial Number : D7119815
  FW revision   :
  HW revision   : 1.0
  Vendor        : OPLINK
  Description   : SFP VOA 0-20dB, Dark, No PD

admin@dcpf-189>
```

```
admin@dcpf-189>show interface if-1/2/2

  Interface   : if-1/2/2
  Description :

Status:

  Admin status   : up
  Status [Rx/Tx] : idle/up

  Temperature                         : 32.6 [C]
  Temperature high warning threshold : 95.0 [C]
  Wavelength                          : 1510 [nm]

  OSC Rx power   : -99 [dBm]
  OSC Tx power   : 3.5 [dBm]
  Rx sensitivity : -34 [dBm]

Alarms:

  Loss of optical input power(OSC) : alarm
  Loss of OSC link                 : alarm

Transceiver:

  Type          : Optical
  Part Number   : M-OSC-10051-34
  Serial Number : VE2032039LBC51
  FW revision   :
  HW revision   : A
  Vendor        : SmartOptics
  Description   : SFP, STM-1/OC3, 100M Ethernet, CWDM, 120km, 34dB, LC, 1510 nm

admin@dcpf-189>
```

```
admin@dcpf-189>show interface if-1/2/edfa1

  Interface           : if-1/2/edfa1
  Description         :

Status:

  Admin status     : up
  Status [Rx/Tx]   : up/up

  Optical Rx power : -9.5 [dBm]
  Optical Tx power : 18.5 [dBm]

  Set Gain     : 28.0 [dB]
  Actual Gain  : 27.9 [dB]
  LOS alarm    : enabled

Alarms:

  Loss of optical input power  : ok
  Loss of optical output power : ok

admin@dcpf-189>
```

5.5.15.2 show interface if-1/x/2 otdr status

This command show all available OTDR measurements series.

Measurement series:
Refpoint: A saved reference point serie set from CLI.
1-5 : The last 5 OTDR measurements for the interface. These measurements will be removed at reboot.
Date : The date when the series was measured.
Time : The time when the series was measured.
OSC RTT : The measured Round Trip Time on the fiber in km.
1-16 : The distance for up to 16 reflections in meter.
Ghost : Indicated with *if the reflection is likely to be a ghost reflection.

```
admin@dcpf-189>interface if-1/1/2 otdr status

                                Measurement Series
================================================================================
-             Refpoint    1(latest)   2           3           4           5(oldest)
------------  ----------  ----------  ----------  ----------  ----------  ----------
Date          2021-05-31  2021-05-31  2021-05-31  2021-05-31  2021-05-31  2021-05-31
Time          12:49:28    17:31:16    17:27:03    17:20:03    17:09:59    17:03:53
OSC RTT [km]  32.8        83.2        n/a         83.2        83.2        83.2
1 [m]         10112       10112       10112       10116       10110       10110
2 [m]         12216       62678       60564       62678       62666       62674
3 [m]         32762       83220                   83222       83208

  * Probably a ghost
```

5.5.16 show interface (DCP-M)

The command presents the operational and optical status of interfaces. The output is by default listing all interfaces in the system. The output can be filtered to only show active interfaces using the command ‘show interface active’.

5.5.16.1 show interface

```
admin@dcp-19>show interface active

  Interface  Status     Alarm  Rx power  Tx power  Format     Expected
             [Rx/Tx]           [dBm]     [dBm]                wavelength[nm]
  ---------  ---------  -----  --------  --------  ---------  --------------
  if-1/9210  up/up      ok          1.1      -0.5  100G/200G  1560.61
  if-1/9450  up/up      ok         -7.7       5.0  100G PAM4  1541.35
  if-1/9510  up/up      ok          1.3      -1.1  1-32G      1536.61
```

Column definitions:

- Interface: Shows the interface name of the system.
- Status: Identifies the status of the Tx and Rx port. Status level can be up, down or idle. Idle is present if the channel has never been utilized.
- Alarm: Identifies the alarm status of the port/interface.
- Rx power: Optical power level received in the client Rx interface.
- Tx power: Optical power level transmitted out of the interface Tx port.
- Format: Traffic format detected by the system. 1-32G, 100G PAM4 and 100G/200G are supported.
- Expected wavelength: ITU channel wavelength (not measured), the measured value is presented using the command “show interface detail”.

5.5.16.2 show interface detail

This command shows in addition to ‘show interface’ details about the remote system client port (interface) power levels. Note that this view is showing per Rx/Tx port. In the below example, the output has been modified for documentation purposes. Please refer to the below column definitions on the available output from this command. The output can be filtered to only show active interfaces using the command ‘show interface detail active’.

```
admin@dcp-19> show interface detail active
Local system                              Fiber      Remote system
==========================================  =========  ============================
                       Power                                 Power
Port          Status   [dBm]  Format     Direction  Status   [dBm]  Port
------------  ------  -----  ---------  ---------  ------  -----  ------------
if-1/9310-rx  idle    n/a    n/a        >>>>>      idle      n/a  if-1/9310-tx
if-1/9310-tx  up      5.3    100G PAM4  <<<<<      up       -7.0  if-1/9310-rx
if-1/9440-rx  up      -6.6   100G PAM4  >>>>>      up        4.9  if-1/9440-tx
if-1/9440-tx  up      4.9    100G PAM4  <<<<<      up       -7.3  if-1/9440-rx
if-1/9510-rx  up      1.2    1-32G      >>>>>      up       -0.9  if-1/9510-tx
if-1/9510-tx  up      -0.9   1-32G      <<<<<      up        1.4  if-1/9510-rx
```

Column definitions:

- Port: Shows the interface Rx/Tx ports of the system.
- Status: Identifies the status of the interface. Status level can be up, down or idle. Idle is present if the channel has never been activated.
- Alarm: Identifies the alarm status of the port/interface.
- Power: Optical Rx/Tx power present on local interfaces.
- Format: Traffic format detected by the system. 1-32G, 100G PAM4 and 100G/200G are supported.
- Actual wavelength: Measured channel wavelength by the system.
- Expected wavelength: ITU channel wavelength (not measured).
- Direction: Indicates the traffic direction.
- Status: Identifies the status of the interface. Status level can be up, down or idle. Idle is present if the channel has never been activated.
- Remote power: Optical Rx/Tx power present on remote interface.
- Port: Shows the interface Rx/Tx ports of the remote system.

5.5.16.3 show interface <interface id>

The command presents the current configuration and optical status of the actual interface.

```
admin@hostname>show interface if-1/line

  Interface        : if-1/line
  Description      :

Status:

  Status [Rx/Tx]   : up/up

  Optical Rx power : -12.6 [dBm]
  Optical Tx power :  -0.5 [dBm]

  OSC Rx power   : -15.5 [dBm]
  OSC Tx power   :  -4.2 [dBm]
  Rx sensitivity : -34.0 [dBm]

  Tunable DCM  : -843 [ps/nm]
  Fixed DCM    : n/a

  VOA attenuation                : 4.2 [dB]
  VOA preset mode                : auto
  TDCM mode                      : auto
  Fiber type                     : G.652
  Current dispersion compensation : -843 [ps/nm]

Alarms:

  Loss of optical input power(Line) : ok
  Loss of optical input power(OSC)  : ok
  Loss of OSC link                  : ok

admin@hostname>
```

```
admin@hostname>show interface if-1/9510

  Interface        : if-1/9510
  Description      :

Status:

  Status [Rx/Tx]   : up/up

  Wavelength       : 1536.61 [nm]
  Channel Id       : 9510
  Optical Rx power : -10.0 [dBm]
  Optical Tx power :   2.2 [dBm]

  Format detection : manual
  Format           : 40Gpam4*

Alarms:

  Loss of optical input power  : ok
  Loss of optical output power : ok

admin@hostname>
```

5.5.17 show interface (DCP-R)

The command presents the operational and optical status of interfaces. The output is by default listing all interfaces in the system. The output can be filtered to only show active interfaces using the command ‘show interface active’.

5.5.17.1 show interface

```
admin@demo-rdm34-d1>show interface

  Client                                          Line

  ================================================================================================================================

              Status             Rx power  Tx power  Optical      Target output  Actual output  Port  Expected

  Interface   [Rx/Tx]    Alarm   [dBm]     [dBm]     ControlMode  Power [dBm]    Power [dBm]    Mode  wavelength[nm] Description

  ----------  ---------  ------  --------  --------  -----------  -------------  -------------  ----  -------------------------

  if-1/line   up/up      ok          -1.8       2.3  n/a                    n/a            n/a  n/a   n/a

  if-1/9140   idle/idle  ok         -99.0     -99.0  off                  -15.7          -99.0  off   1566.31

  if-1/9150   idle/idle  ok         -99.0     -99.0  off                  -15.7          -99.0  off   1565.50

  if-1/9160   idle/idle  ok         -99.0     -99.0  off                  -15.7          -99.0  off   1564.68

  if-1/9170   idle/idle  ok         -99.0     -99.0  off                  -15.7          -99.0  off   1563.86

  if-1/9180   idle/idle  ok         -99.0     -99.0  off                  -15.7          -99.0  off   1563.05

  if-1/9190   idle/idle  ok         -99.0     -99.0  off                  -15.7          -99.0  off   1562.23
```

Column definitions:

- Interface: Shows the interface name of the system.
- Status: Identifies the status of the Tx and Rx port. Status level can be up, down or idle. Idle is present if the channel has never been utilized.
- Alarm: Identifies the alarm status of the port/interface.
- Rx power: Optical power level received in the client Rx interface.
- Tx power: Optical power level transmitted out of the interface Tx port.
- Optical control mode: Presents the current control mode. Can be in modes off, gainLoss and power.
- Target output power: Shows the target output power per channel on the line port
- Actual output power: Shows the actual output power per channel on the line port
- Port mode: Shows the current port mode for each channel. Port mode can be off or cross connected to one of the XC ports.
- Expected wavelength: Shows the expected wavelength in nm.
- Description: Shows the description of the channel

5.5.17.3 show interface <interface id>

The command presents the current configuration and optical status of the actual interface.

```
admin@SO-ROADM-2-D1>show interface if-1/line

  Interface        : if-1/line
  Description      :

Status:

  Status [Rx/Tx]   : up/up

  Optical Rx power     :   2.5 [dBm]
  Optical Tx power     :  -0.4 [dBm]
  Average Ch Tx power  : -18.8 [dBm]

  Booster EDFA Rx power           : -15.8 [dBm]
  Booster EDFA Tx power           :   6.5 [dBm]
  Booster EDFA wanted gain        :  22.0 [dB]
  Booster EDFA actual gain        :  21.9 [dB]
  Booster EDFA min gain threshold :  20.0 [dB]
  Booster EDFA max gain threshold :  24.0 [dB]

  Pre-amp EDFA Rx power           : -14.6 [dBm]
  Pre-amp EDFA Tx power           :   7.6 [dBm]
  Pre-amp EDFA wanted gain        :  22.0 [dB]
  Pre-amp EDFA actual gain        :  22.0 [dB]
  Pre-amp EDFA min gain threshold :  22.0 [dB]
  Pre-amp EDFA max gain threshold :  22.0 [dB]

  OSC Rx power   :   2.4 [dBm]
  OSC Tx power   :  -0.6 [dBm]
  Rx sensitivity : -24.0 [dBm]

  VOA attenuation                 : 20.3 [dB]
  VOA insertion loss              : 1.1 [dB]
  VOA preset mode                 : auto
  Fiber mode                      : dualFiber
  Target output power             : -18.8 [dBm]
  Power offset                    :  0.0 [dB]

Alarms:

  Loss of optical input power(Line) : ok
  Loss of optical input power(OSC)  : ok
  Loss of OSC link                  : ok
```

```
admin@SO-ROADM-1-D1>show interface if-1/9370

  Interface        : if-1/9370
  Description      :

Status:

  Status [Rx/Tx]   : up/up

  Wavelength       : 1547.72 [nm]
  Channel Id       : 9370

  Optical Rx power     :  -1.5 [dBm]
  Optical Tx power     : -11.5 [dBm]
  Booster OCM ch power :   2.8 [dBm]
  Pre-amp OCM ch power :   2.1 [dBm]

  Format detection : auto
  Format           : Coherent

  Optical control mode : gainLoss
  Target output power  : -18.8 [dBm]
  Actual output power  : -19.1 [dBm]
  Port mode            : localAD

  WSS add attenuation  :   9.1 [dB]
  WSS drop attenuation :   5.0 [dB]

Alarms:

  Loss of optical input power  : ok
  Loss of optical output power : ok
```

5.5.17.1 show interface if-x/line otdr status

This command show all available OTDR measurements series.

Measurement series:
Refpoint: A saved reference point serie set from CLI.
1-5 : The last 5 OTDR measurements for the interface. These measurements will be removed at reboot.
Date : The date when the series was measured.
Time : The time when the series was measured.
OSC RTT : The measured Round Trip Time on the fiber in km.
1-16 : The distance for up to 16 reflections in meter.
Ghost : Indicated with *if the reflection is likely to be a ghost reflection.

```
admin@demo-rdm34-d1>show interface if-2/line otdr status

                       Measurement Series
============================================================
                Refpoint  1(latest)   2           3  4  5(oldest)
  ------------  --------  ----------  ----------  -  -  ---------
  Date                    2024-08-06  2024-08-06
  Time                    12:10:06    12:09:11
  OSC RTT [km]            20.1        20.1
  1 [m]                   20150       20136
  2 [m]                   40256 *     40230 *

  * Probably a ghost
```

5.5.18 show interface (DCP-2)

5.5.18.1 show interface

Displays info about all interfaces.

Example from DCP-1610 + DCP-404:

```
admin@hostname>show interface

              Port      Status              Rx power  Tx power                        Channel  Admin
  Interface   Type      [Rx/Tx]    Alarm    [dBm]     [dBm]     Format   FEC         Id       status
Description
  ----------  --------  ---------  --------  --------  --------  -------  --------  -------  ------  ---
---------
  Slot 1:     DCP-1610

   if-1/1/1   n/a       up/up      no          -14.0       0.6  10GbE    n/a       D9410    up
   if-1/1/2   n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

   if-1/1/3   n/a       up/up      no          -12.6       0.5  10GbE    n/a       D9420    up
   if-1/1/4   n/a       down/up    critical    -99.0      -4.5  10GbE    n/a       C31      up

   if-1/1/5   n/a       up/up      no          -16.1       0.0  10GbE    n/a       D9430    up
   if-1/1/6   n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

   if-1/1/7   n/a       up/up      no          -15.8       0.5  10GbE    n/a       D9440    up
   if-1/1/8   n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

   if-1/1/9   n/a       up/up      no          -14.0       0.0  10GbE    n/a       D9450    up
   if-1/1/10  n/a       down/up    critical    -99.0      -0.4  10GbE    n/a       C31      up

   if-1/1/11  n/a       down/up    critical    -99.0       1.5  10GbE    n/a       D9460    up
   if-1/1/12  n/a       up/down    no           -0.2     -99.0  10GbE    n/a       C31      up

   if-1/1/13  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up
   if-1/1/14  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

   if-1/1/15  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up
   if-1/1/16  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

   if-1/1/17  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up
   if-1/1/18  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

   if-1/1/19  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up
   if-1/1/20  n/a       n/a        no            n/a       n/a  10GbE    n/a       n/a      up

  Slot 2:     DCP-404

   if-1/2/1   client    down/down  no          -34.0     -34.0  100G     disabled  n/a      up

   if-1/2/2   client    n/a        no            n/a       n/a  100G     disabled  n/a      up

   if-1/2/3   client    n/a        critical      n/a       n/a  100G     disabled  n/a      up

   if-1/2/4   client    n/a        no            n/a       n/a  100G     disabled  n/a      up

   if-1/2/5   line      down/up    critical    -40.0      -8.4  400G     enabled   D9450    up

admin@hostname>
```

5.5.18.2 show interface if-1/<1/2>/<1/20>

Displays detailed info about a specific interface.

Example from DCP-404:

```
admin@hostname>show interface if-1/2/5

  Interface   : 5
  Muxponder   : mux-1/2/1
  Description :

Status:

  Admin status   : up
  Oper status    : down
  Status [Rx/Tx] : down/up
  Module state   : Ready

  Temperature                          :         57.0 [C]
  Temperature high warning threshold :         75.0 [C]
  Temperature high alarm threshold   :         80.0 [C]
  Wavelength                           :      1541.35 [nm]
  Channel Id                           :        D9450
  Actual Frequency                     :    194.50000 [Thz]
  Wanted Frequency                     :    194.50000 [Thz]
  Grid spacing                         :           50 [Ghz]

  Optical total Rx power             :       -99.0 [dBm]
  Optical signal Rx power            :       -40.0 [dBm]
  Optical Tx power                     :        -8.5 [dBm]
  Tx bias current                      :        63.5 [mA]
  Rx sensitivity                       :       -23.0 [dBm]

  Modulation Type                      :        16QAM
  Bandwith                             :          400 [Gb/s]
  FEC                                  :         oFEC
  Pulse shaping                        :     disabled

  Certified                            :          yes

  OSNR                                 :          0.0 [dB]
  Chromatic Dispersion                 :            0 [ps/nm]
  Diff Group Delay                     :            0 [ps]
  Polarization Dependent Loss          :          0.0 [dB]
  Pre-FEC BER                          :     5.00e-01
  Pre-FEC BER avg                      :     5.00e-01
  Uncorrected BER                      :     0.00e+00
  Uncorrected BER avg                  :     0.00e+00
  Q-Value                              :          0.0 [dBQ]
  Q-Margin                             :          0.0 [dBQ]

Alarms:

  Loss of lock                 : alarm
  Loss of signal               : alarm
  Transceiver missing          : ok
  High temperature warning     : ok
  High temperature alarm       : ok
  High temperature shutdown    : ok

Transceiver:

  Type          : Optical
  Part Number   : SO-TQSFPDD4CCZRP
  Serial Number : 214454974
  FW revision   : 61.20.13
  HW revision   : A
  Vendor        : SmartOptics
  Description   : QSFP-DD, OIF400ZR/OpenZR+, Coh-T, SM, DDM, LC

admin@hostname>
```

5.5.18.3 show interface if-1/<1/2>/<1/20> eeprom dump

This command displays the eeprom data in the transceiver on the selected interface.

Example:

```
admin@DCP-2-190>show interface if-1/2/5 eeprom dump
(enter)             lower     upper
admin@DCP-2-190>show interface if-1/2/5 eeprom dump

(enter)  - Execute the command.

Description:
This command will display all default EEPROM data.

lower    - Show lower page EEPROM data.
upper    - Show specific upper page and bank EEPROM data.

admin@DCP-2-190>show interface if-1/2/5 eeprom dump upper

<page> <bank>  - Show specific EEPROM upper page(0h-FFh) and bank(0h-FFh) (Bank default is 0) in HEX.
```

5.5.19 show interface diagnostics

Displays statistics for interfaces with FEC enabled.

```
admin@smartoptics-dcp>show interface diagnostics
             Per Second FEC counters                        Accumulated FEC counters
             ===============================================  ===============================================
             Uncorrected  Corrected  Corrected  Corrected  Uncorrected  Corrected  Corrected  Corrected
  Interface  errors       errors     0->1       1->0       errors       errors     0->1       1->0
  =========  -----------  ---------  ---------  ---------  -----------  ---------  ---------  ---------
  DCP-1610
  DCP-101
   if-1/2/1  0            470        n/a        n/a        0            1275026    n/a        n/a
admin@smartoptics-dcp>
```

5.5.20 show interface pm

5.5.20.1 show interface pm <time interval>

Displays the accumulated PM data for the current time interval according to ITU-T G.826 standard.
Time intervals 15min and 24h are selectable.

```
admin@long-term-dcp404-213>show interface pm 15min

  Start Time     : 2022-06-21 14:30:00
  Elapsed Time   : 00:10

             PM alarm     PM alarm         rxES  rxSES  rxUAS              rxBBE      rxES       rxSES      rxUAS      Rx interface
  Interface  adminStatus  status    rxBBE  [s]   [s]    [s]    Validity    threshold  threshold  threshold  threshold  status
  ---------  -----------  --------  -----  ----  -----  -----  ----------  ---------  ---------  ---------  ---------  ------------
  if-1/1/1   down         ok        0      0     0      0      complete    100000     20         10         30         up
  if-1/1/2   down         ok        0      0     0      0      complete    100000     20         10         30         up
  if-1/1/3   down         ok        0      0     0      0      complete    100000     20         10         30         up
  if-1/1/4   down         ok        0      0     0      0      complete    100000     20         10         30         up
  if-1/1/5   down         ok        0      0     0      0      complete    100000     20         10         30         up
  if-1/2/1   down         ok        0      0     0      0      incomplete  100000     20         10         30         idle
  if-1/2/2   down         ok        0      0     0      0      incomplete  100000     20         10         30         up
  if-1/2/3   down         ok        0      0     0      0      incomplete  100000     20         10         30         n/a
  if-1/2/4   down         ok        0      0     0      0      incomplete  100000     20         10         30         up
  if-1/2/5   down         ok        0      0     0      0      incomplete  0          20         10         30         up

admin@long-term-dcp404-213>
```

```
admin@long-term-dcp404-213>show interface pm 24h

  Start Time     : 2022-06-21 00:00:00
  Elapsed Time   : 14:35:20

             PM alarm     PM alarm         rxES  rxSES  rxUAS              rxBBE      rxES       rxSES      rxUAS      Rx interface
  Interface  adminStatus  status    rxBBE  [s]   [s]    [s]    Validity    threshold  threshold  threshold  threshold  status
  ---------  -----------  --------  -----  ----  -----  -----  ----------  ---------  ---------  ---------  ---------  ------------
  if-1/1/1   down         ok        0      0     0      85     incomplete  1000000    200        100        300        up
  if-1/1/2   down         ok        0      0     0      85     incomplete  1000000    200        100        300        up
  if-1/1/3   down         ok        0      0     0      84     incomplete  1000000    200        100        300        up
  if-1/1/4   down         ok        0      0     0      84     incomplete  1000000    200        100        300        up
  if-1/1/5   down         ok        0      0     0      0      incomplete  1000000    200        100        300        up
  if-1/2/1   down         ok        0      0     0      0      incomplete  1000000    200        100        300        idle
  if-1/2/2   down         ok        0      0     0      0      incomplete  1000000    200        100        300        up
  if-1/2/3   down         ok        0      0     0      0      incomplete  1000000    200        100        300        n/a
  if-1/2/4   down         ok        0      0     0      0      incomplete  1000000    200        100        300        up
  if-1/2/5   down         ok        0      0     0      0      incomplete  1000000    200        100        300        up

admin@long-term-dcp404-213>
```

5.5.20.2 show interface pm <time interval> reports

Displays the available PM reports for the selected time interval according to ITU-T G.826 standard. Time intervals 15min and 24h are selectable.

```
admin@long-term-dcp404-213>show interface pm 15min reports

Location: /pm-reports/15m/

  File                                                                  Validity
  --------------------------------------------------------------------  ----------
  PM_G826_15m_Report_long-term-dcp404-213_2022-06-21T13-45-00.csv  incomplete
  PM_G826_15m_Report_long-term-dcp404-213_2022-06-21T14-00-00.csv  incomplete
  PM_G826_15m_Report_long-term-dcp404-213_2022-06-21T14-15-00.csv  incomplete


admin@long-term-dcp404-213>
```

```
Location: /pm-reports/24h/

  File                                                          Validity
  ------------------------------------------------------------  ----------
  PM_G826_24h_Report_long-term-dcp404-213_2022-06-22T00-00-00.csv  incomplete


admin@long-term-dcp404-213>
```

The validity for a PM report will be set to incomplete if one of the PM interface counters is set to incomplete.

The rules for setting a PM value to incomplete are summarized in the table below:

System starts up in the middle of a period.	Incomplete	All data will not be available for all interfaces.
Reboot after a period has started.	Incomplete	All data will not be available for all interfaces.
System time and date changes config date config ntp adminStaus up	Incomplete	All data will not be available for all interfaces. Only if time jump Only if time jump
Transceiver unplugged	Complete	
Service changed from e.g. 4x100G-400G to 3x100G-300G,	Complete	
Clear PM data for an interface.	Incomplete	Data lost before the clear command was issued. If only one interface that interface is incomplete and the report will be incomplete.
Unplug slot module	Incomplete	All data will not be available for all interfaces.
Reboot slot module	Incomplete	All data will not be available for all interfaces.
Portreset	Complete	Shall not affect Validity.

5.5.20.3 show interface pm <time interval> reports <pm report name>

Displays the PM data for a selected report according to ITU-T G.826 standard. Time intervals 15min and 24h are selectable.

```
admin@long-term-dcp404-213>show interface pm 15min reports PM_G826_15m_Report_long-term-dcp404-213_2022-06-21T14-00-00.csv

interface,rxBBE,rxES,rxSES,rxUAS,validity,rxStatus,hostname,startTime,endTime
if-1/1/1,0,0,0,0,complete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/1/2,0,0,0,0,complete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/1/3,0,0,0,0,complete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/1/4,0,0,0,0,complete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/1/5,0,0,0,0,complete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/2/1,0,0,0,0,incomplete,idle,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/2/2,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/2/3,0,0,0,0,incomplete,n/a,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/2/4,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00
if-1/2/5,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-21T14:00:00+00:00,2022-06-21T14:14:59+00:00


admin@long-term-dcp404-213>
```

```
admin@long-term-dcp404-213>show interface pm 24h reports PM_G826_24h_Report_long-term-dcp404-213_2022-06-22T00-00-00.csv

interface,rxBBE,rxES,rxSES,rxUAS,validity,rxStatus,hostname,startTime,endTime
if-1/1/1,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/1/2,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/1/3,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/1/4,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/1/5,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/2/1,0,0,0,0,incomplete,idle,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/2/2,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/2/3,0,0,0,0,incomplete,n/a,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/2/4,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00
if-1/2/5,0,0,0,0,incomplete,up,long-term-dcp404-213,2022-06-22T00:00:00+00:00,2022-06-22T23:59:59+00:00


admin@long-term-dcp404-213>
```

5.5.21 show inventory

Displays the inventory details of the system.

```
admin@smartoptics-dcp>show inventory
  Location    Part Number        Description                                      HW rev  FW rev  Serial number
  ----------  -----------------  -----------------------------------------------  ------  ------  --------------
  Chassis     DCP-2              1U 2 slots chassis                               R1A     n/a     S1638DCP20023
   psu-1/1    Not present        n/a                                              n/a     n/a     n/a
   psu-1/2    DCP-2-PSU-AC-FB    AC power supply, front-to-back airflow           01F     n/a     DZRD1641088360
   fan-1/1    DCP-2-FAN-FB       Fan, front-to-back airflow                       R1A     n/a     n/a
   Slot 1     DCP-1610           10 channel, 1G-16Gbps transponder                R2A     n/a     F175016100067
    if-1/1/1  DCP-SFP-1G-10G-LR  10G SFP+, 1310 nm                                4.0     n/a     VE161600418
    if-1/1/2  DCP-SFP-1G-10G-LR  10G SFP+, 1310 nm                                4.0     n/a     VE161600419
   Slot 2     DCP-101            1 channel, 100Gbps DWDM transponder              R1B     n/a     S1648D1010036
    if-1/2/1  SO-CFP-C-DWDM      100G, Coherent Tunable CFP, DWDM (AC100-M01-001) C       1.6     153932237
    if-1/2/2  SO-QSFP28-LR4      QSFP28                                           01      n/a     VE171900505
admin@smartoptics-dcp>
```

5.5.22 show muxponder

Shows info about muxponders.

```
admin@DCP213>show muxponder

                                                 Link
  Muxponder   Service    Interfaces               status
  ----------  ---------  -----------------------  ------
  Slot 1:     DCP-404    mux:4x100G-400G (App code 6)
   mxp-1/1/1  100G-400G  if-1/1/1 <> if-1/1/5     up
   mxp-1/1/1  100G-400G  if-1/1/2 <> if-1/1/5     down
   mxp-1/1/1  100G-400G  if-1/1/3 <> if-1/1/5     down
   mxp-1/1/1  100G-400G  if-1/1/4 <> if-1/1/5     down
```

5.5.23 show linkview

The command presents the operational and optical status of the link/optical line between the sites. A more detailed output is available using the command ‘show linkview detail’.

5.5.23.1 show linkview

```
admin@L8-99>show linkview
Chassis-1
  Local system                                  Fiber            Remote system

  ============================================  ===============  ============================

                                       Power  Loss             Power

  Hostname  Interface     Status  Alarm  [dBm]  [dB]  Direction  [dBm]  Interface     Hostname
  --------  ------------  ------  -----  -----  ----  ---------  -----  ------------  --------
  L8-99     if-1/line-tx  up      ok     -15.1  18.4    >>>>>    -33.5  if-1/line-rx  L8-98
  L8-99     if-1/line-rx  up      ok     -13.8  15.9    <<<<<      2.1  if-1/line-tx  L8-98
```

This command shows the status of the link, the optical power levels at Tx and Rx for both local and remote site, the link loss and alarm status.

Column definitions:

- Local System: This section presents the parameters for the local system.
  - Hostname: Name of the local system.
  - Interface: Identifying Line Tx or Rx port.
  - Status: Identifies the status of the Tx and Rx port. Status level can be up, down or idle. Idle is present if the channel has never been activated.
  - Alarm: Identifies the alarm status of the port/interface.
  - Power: Optical power present at the line interface, all wavelengths combined

- Fiber: This section presents the parameters of the fiber between the systems.
  - Loss: Calculated fiber loss between the systems.
  - Direction: Indicates the traffic direction.

- Remote System: This section presents the parameters for the remote system and uses the same definitions as the local system.
  - Power: Optical power present at the remote system line interface, all wavelengths combined.

5.5.23.2 show linkview detail

```
admin@dcp-19>show linkview detail
                                                Fiber
  Local system                                  =======================================================================================  Remote system
  =============================================                                                         Dispersion                            ================================
                                         Power  Loss  Attenuation   Length  Disp.                          Comp     Final                    Power
  Hostname  Interface     Status  Alarm  [dBm]  [dB]  [dB/km]       [km]    [ps/nm]  Fiber  Direction  [ps/nm]  [ps/nm]  Utilization     [dBm]  Interface     Hostname
  --------  ------------  ------  -----  -----  ----  -----------   ------  -------  -----  ---------  -------  -------  --------------  -----  ------------  --------
  dcp-19    if-1/line-tx  up      -        1.8   6.1         0.24     25.0      417  G.652    >>>>>       -417        0  32% (13 of 40)   -4.3  if-1/line-rx  dcp-20
  dcp-19    if-1/line-rx  up      -       -4.4   4.8         0.19     25.0      417  G.652    <<<<<       -418        0  32% (13 of 40)    0.4  if-1/line-tx  dcp-20
```

The detail command gives access to additional fiber link parameters.

Additional column definitions:

- Loss: Calculated fiber loss between the systems.
- Attenuation: Calculated average fiber loss per km.
- Length: Measured fiber length by the local system.
- Dispersion: Displays the calculated dispersion based on the measured fiber length.
- Fiber: Displays the fiber type configured, currently only G.652 is supported.
- Dispersion Comp: Two values may be presented. The first value is the value for the tunable DCM. The second value, if present, is the dispersion compensation for the fixed dispersion compensation module (DCM) in the unit (if applicable).
- Dispersion Final: Residual (remaining) dispersion of the link after the compensation module.
- Utilization: channel utilization of the unit.

5.5.24 show network interfaces

Displays the IP address, netmask and gateway of the unit. ETH1, ETH2,ETH3 and ETH4 are bridge interfaces in “br0”.

```
admin@Stockholm-97>show network interfaces

Mgmt:            if-1/eth1, if-1/eth2, if-1/eth3, if-1/eth4
IP Address:      10.10.72.97
Netmask:         255.255.255.0
Default gateway: 10.10.72.1
MAC address:     94:DE:0E:02:02:17

eth0 / local:
IP Address:      192.168.0.1
Netmask:         255.255.255.0
MAC address:     94:DE:0E:02:02:16

DNS primary:
DNS secondary:
```

5.5.25 show network lldp local neighbor

This command shows the local lldp neighbors.

```
admin@ROADM-LC1-DEG1>show network lldp local neighbor

  Interface  Part number  Serial number  Hostname       IP address              Interface  Age

  ---------  -----------  -------------  -------------  ----------------------  ---------  ---------------

  eth4       DCP-R-9D-CS  S2143DCPR0026  ROADM-LC1-DEG2  fe80::96de:eff:fe05:3e2  eth4       0 day, 09:17:40
```

5.5.26 show network lldp remote neighbor

This command shows the remote lldp neighbors.

```
admin@Uppsala-110-A-D1>show network lldp remote neighbor
  Local                        Remote


  ==========================
==============================================================================================


  Interface  Hostname          Hostname     Part number  Serial number  Mgmt IP                  Interface  Age

  ---------  ----------------  -----------  -----------  -------------  -----------------------  ---------  ------------
----


  if-1/osc   Uppsala-110-A-D1  n/a          n/a          n/a            n/a                      n/a        n/a
  if-2/osc   Uppsala-110-A-D1  L8-109-B-D2  DCP-R-9D-CS  S2142DCPR0018  fe80::96de:eff:fe05:3d0  if-2/osc   4 days,
20:54:14


Chassis-1:
 LLDP config:
[]


Chassis-2:
 LLDP config:
[{"age":"4 days, 20:54:14","chassis":{"L8-109-B-
D2":{"capability":[{"enabled":false,"type":"Bridge"},{"enabled":false,"type":"Router"},{"enabled":false,"type":"Wlan"},{
"enabled":true,"type":"Station"}],"descr":"{\"hw-
revision\":\"P2\",\"node\":{\"id\":\"\",\"index\":2,\"role\":\"slave\"},\"product\":\"DCP-R-9D-
CS\",\"serialnumber\":\"S2142DCPR0018\",\"sw-
version\":\"7.0.1\"}","id":{"type":"mac","value":"94:de:0e:05:03:d0"},"mgmt-
ip":"fe80::96de:eff:fe05:3d0"}},"port":{"auto-negotiation":{"advertised":{"fd":true,"hd":false,"type":"1000Base-
T"},"current":"1000BaseTFD - Four-pair Category 5 UTP, full duplex
mode","enabled":true,"supported":true},"descr":"eth_sfp_1","id":{"type":"mac","value":"94:de:0e:05:03:d0"},"ttl":"120"},
"rid":"4","via":"LLDP"}]
```

5.5.27 show network mgmt. remoteManagement

This command shows if the remote management communication is enabled or disabled.

```
admin@DCP-M40-1>show network mgmt remoteManagement

(enter)  - Execute the command.

admin@DCP-M40-1>show network mgmt

remoteManagement  - Show network remote management.

admin@DCP-M40-1>show network mgmt remoteManagement

Remote Management if-1/line: disabled
```

5.5.28 show network ospf status

Displays the ospf status of different ports in the DCP-Sc-28P.

```
admin@Uppsala-110-A-D1>show network ospf status
```

5.5.29 show network status

Displays the management interfaces and configured descriptions of one node.

```
admin@Uppsala-110-A-D1>show network status

Chassis-1
  Interface  OperStatus  Link Speed    MAC Address        Description
  ---------  ----------  ------------  -----------------  -----------
  console-1  n/a         115200,8,N,1  n/a
  local      down        0             94:DE:0E:05:03:67
  if-1/eth1  up          1000          94:DE:0E:05:03:67
  if-1/eth2  up          1000          94:DE:0E:05:03:67
  if-1/eth3  down        0             94:DE:0E:05:03:67
  if-1/eth4  down        0             94:DE:0E:05:03:67
  if-1/eth5  down        0             94:DE:0E:05:03:67

Chassis-2
  Interface  OperStatus  Link Speed    MAC Address        Description
  ---------  ----------  ------------  -----------------  -----------
  console-2  n/a         115200,8,N,1  n/a
  local      down        0             94:DE:0E:05:01:B8
  if-2/eth1  down        0             94:DE:0E:05:01:B8
  if-2/eth2  up          1000          94:DE:0E:05:01:B8
  if-2/eth3  up          1000          94:DE:0E:05:01:B8
  if-2/eth4  down        0             94:DE:0E:05:01:B8
  if-2/eth5  down        0             94:DE:0E:05:01:B8
```

5.5.30 show network tunnel

This command shows the configurations for management tunnels in DCP-F.

```
root@DCP-2-DCP-F-DE22-A22--193>show network tunnel

OSC Management Tunnels

  Tunnel Id  Optical Port  Ethernet Port
  ---------  ------------  -------------
  1          if-1/1/2      if-1/1/eth1
  2          if-1/2/2      if-1/2/eth1

root@DCP-2-DCP-F-DE22-A22--193>
```

5.5.31 show node info

This command shows the node ID and the geolocation.

```
admin@L8-C-101>show node info

Node Id: Huskvarna
Geolocation: 11.0/11.0
```

5.5.32 show node members

This command shows the chassis that belong to same node in DCP-R.

```
admin@Uppsala-110-A-D1>show node members

  Id  Location   Hostname          Part number  Serial number  IP address                      Status
  --  ---------  ----------------  -----------  -------------  ------------------------------  ------
  1   chassis-1  Uppsala-110-A-D1  DCP-R-9D-CS  S2139DCPR0014  fe80::96de:eff:fe05:367%eth0.2  Master
  2   chassis-2  Uppsala-110-A-D1  DCP-R-9D-CS  S2126DCPR0013  fe80::96de:eff:fe05:1b8%eth0.2  Slave
```

5.5.33 show node topology internal

This command shows the internal node topology.

```
admin@Uppsala-110-A-D1>show node topology internal

  ID  Source    Destination
  --  --------  -----------
  1   if-1/XC2  if-2/XC2
```

5.5.34 show node topology virtual-port

This command shows the status for virtual ports on all XC ports or on a selected XC port on DCP-R.

```
admin@COL-R2-ROADM-202-SC28>show node topology virtual-port if-1/XC4Wss4

  Interface     Virtual Port  Used  Applied
  ------------  ------------  ----  -------
  if-1/XC4Wss4
                C1            No    Yes
                C2            No    Yes
                C3            No    Yes
                C4            No    Yes
                C5            No    Yes
                C6            No    Yes
                C7            No    Yes
                C8            No    Yes
                C9            No    Yes
                C10           No    Yes
                C11           No    Yes
                C12           No    Yes
                C13           No    Yes
                C14           No    Yes
                C15           No    Yes
                C16           No    Yes
                C17           No    No
                C18           No    No
```

5.5.35 show ntp

Displays NTP administrative state and configured NTP servers.

```
admin@smartoptics-dcp>show ntp status
NTP Admin status : up
Primary NTP server: time.google.com
Secondary NTP server:

admin@smartoptics-dcp>
```

5.5.36 show osclinkview

The command presents the operational and optical status of the link/optical line between the sites. The displayed parameters contain information from the OSC only. A more detailed output is available using the command ‘show osclinkview detail’.

```
admin@dcpf-189>show osclinkview
  Local system                                  Fiber            Remote system
  ============================================  ===============  ============================================
                                       Power  Loss             Power
  Hostname  Interface    Status  Alarm  [dBm]  [dB]  Direction  [dBm]  Interface     Hostname
  --------  -----------  ------  -----  -----  ----  ---------  -----  ------------  --------------------
  dcpf-189  if-1/1/2-tx  up      ok       3.7  11.8    >>>>>     -8.1  if-1/line-rx  DCP-M40-PAM4-ER---180
  dcpf-189  if-1/1/2-rx  up      ok     -16.8  11.1    <<<<<     -5.7  if-1/line-tx  DCP-M40-PAM4-ER---180

admin@dcpf-189>
```

This command shows the status of the link, the optical power levels at Tx and Rx for both local and remote sites, the link loss and alarm status.

Column definitions:

- Local System: This section presents the parameters for the local system.
  - Hostname: Name of the local system.
  - Interface: Identifying Line Tx or Rx port.
  - Status: Identifies the status of the Tx and Rx port. Status level can be up, down or idle. Idle is present if the channel has never been activated.
  - Alarm: Identifies the alarm status of the port/interface.
  - Power: Optical OSC power present at the line interface.

- Fiber: This section presents the parameters of the fiber between the systems.
  - Loss: Calculated fiber loss between the systems.
  - Direction: Illustrating the direction of the light travelling in the fiber.

- Remote System: This section presents the parameters for the remote system and uses the same definitions as the local system.

5.5.36.1 show osclinkview detail

```
admin@dcpf-189>show osclinkview detail
  Local system                                  Fiber                                                  Remote system
  ========================================  ==================================================  ========================================
                                      Power  Loss  Attenuation  Length  Disp.                      Power
  Hostname  Interface    Status  Alarm [dBm]  [dB]  [dB/km]      [km]    [ps/nm]  Fiber  Direction  [dBm]  Interface     Hostname
  --------  -----------  ------  ----- -----  ----  -----------  ------  -------  -----  ---------  -----  ------------  --------------------
  dcpf-189  if-1/1/2-tx  up      ok      3.7  11.8         0.29    40.3      673  G.652    >>>>>     -8.1  if-1/line-rx  DCP-M40-PAM4-ER---180
  dcpf-189  if-1/1/2-rx  up      ok    -16.8  11.1         0.27    40.3      673  G.652    <<<<<     -5.7  if-1/line-tx  DCP-M40-PAM4-ER---180


admin@dcpf-189>
```

The detail command gives access to additional fiber link parameters.

Additional column definitions:

- Length: Measured fiber length by the local system.
- Disp: Displays the calculated dispersion based on the measured fiber length.
- Fiber: Displays the fiber type configured, currently only G.652 is supported.
- Direction: Illustrating the direction of the light travelling in the fiber.

5.5.37 show slot < 1/2 >

The show slot command can be used to display information of a specific slot.

```
admin@dcpf-189>show slot
1     - Traffic module slot 1.
2     - Traffic module slot 2.

admin@dcpf-189>show slot 1
alarm      - Show alarms.
interface  - Show interface parameters.
och        - Show och parameters.
ocm        - Show ocm parameters.
```

5.5.37.1 show slot < 1/2 > alarm active

This command will show the active alarms for a specific slot.

```
admin@Stockholm-97>show slot 1 alarm active
  Index  Location  Alarm name    Severity  Start time
  -----  --------  ------------  --------  -------------------
  20471  if-1/1/1  Loss of lock  critical  2022-05-10 11:09:06
```

5.5.37.2 show slot < 1/2 > alarm log

This command will show the alarm log for a specific slot.

```
admin@Stockholm-97>show slot 1 alarm log
  Index  Location  Alarm name                  Severity  Start time          End time
  -----  --------  --------------------------  --------  ------------------  ------------------
  10001  if-1/1/1  Loss of lock                critical  2022-05-09 12:25:04  2022-05-09 12:41:25
  20003  if-1/1/1  Loss of optical input power  critical  2022-05-09 12:41:25  2022-05-09 12:42:38
  20005  if-1/1/1  Loss of lock                critical  2022-05-09 12:42:38  2022-05-09 12:42:55
  20007  if-1/1/1  Loss of optical input power  critical  2022-05-09 12:42:55  2022-05-09 12:48:55
  20012  if-1/1/1  Loss of optical input power  critical  2022-05-09 12:52:06  2022-05-09 12:52:06
  20013  if-1/1/1  Loss of optical input power  critical  2022-05-09 12:52:40  2022-05-09 12:52:40
  20010  if-1/1/1  Loss of lock                critical  2022-05-09 12:48:55  2022-05-09 12:52:41
  20014  if-1/1/1  Loss of optical input power  critical  2022-05-09 12:52:41  2022-05-09 12:56:31
  20016  if-1/1/1  Loss of lock                critical  2022-05-09 12:56:31  2022-05-09 12:56:49
  20018  if-1/1/1  Loss of optical input power  critical  2022-05-09 12:56:49  2022-05-09 12:58:45
  20021  if-1/1/1  Loss of lock                critical  2022-05-09 12:58:45  2022-05-09 13:03:30
  20023  if-1/1/1  Loss of optical input power  critical  2022-05-09 13:03:30  2022-05-09 13:04:20
  20026  if-1/1/1  Loss of optical input power  critical  2022-05-09 13:05:51  2022-05-09 13
```

5.5.37.3 show slot < 1/2 > interface active

This command will show the active interfaces for a specific slot.

```
admin@Stockholm-97>show slot 1 interface active

              Port     Status           Rx power  Tx power                     Channel  Admin

  Interface   Type     [Rx/Tx]  Alarm   [dBm]     [dBm]     Format   FEC       Id       status  Description

  ----------  -------  -------  ------  --------  --------  -------  --------  -------  ------  -----------
  Slot 1:     DCP-101

  if-1/1/1    n/a      up/up    no         -10.4      -3.0  100GbE   enabled   D9590    up
  if-1/1/2    n/a      up/up    no           2.4       8.5  100GbE   disabled  n/a      up
```

5.5.37.4 show slot < 1/2 > interface diagnostics

This command will show the active alarms for a specific slot.

```
admin@Stockholm-97>show slot 1 interface diagnostics
              Per second FEC counters                      Accumulated FEC counters

              ===========================================  ===========================================

              Uncorrected  Corrected  Corrected  Corrected  Uncorrected  Corrected    Corrected  Corrected

  Interface   errors       errors     0->1       1->0       errors       errors       0->1       1->0

  =========   -----------  ---------  ---------  ---------  -----------  -----------  ---------  ---------

  DCP-101

   if-1/1/1   0            40         n/a        n/a        16546770     23678562855  n/a        n/a
```

5.5.37.5 show slot < 1/2 > interface if-x/y/z

This command will show the details about a specific interface on a specific card.

```
admin@Stockholm-97>show slot 1 interface if-1/1/2
  Interface   : 2
  Transponder : trp-1/1/1
  Description :

Status:
  Admin status   : up
  Oper status    : up
  Status [Rx/Tx] : up/up


  Temperature                         : 36.9 [C]
  Temperature high warning threshold : 70.0 [C]
  Wavelength                          : 1310 [nm]
  Channel Id                          : n/a


                          Lane 1   Lane 2   Lane 3   Lane 4
  Optical Rx power    :     -3.8     -3.7     -3.6     -3.5 [dBm]
  Optical Tx power    :      2.5      2.7      2.8      2.0 [dBm]
  Tx bias current     :     47.5     48.1     47.5     45.6 [mA]
  Rx sensitivity      :    -10.6    -10.6    -10.6    -10.6 [dBm]


  Format    : 100GbE
  FEC       : disabled
  Loopback  : disabled
  Certified : yes


Alarms:
  Loss of lock        : ok
  Loss of signal      : ok
  Transmitter failure : ok
  Transceiver missing : ok
  Far end failure     : ok


Transceiver:
  Type          : Optical
  Part Number   : QSFP28-LR4-10L
  Serial Number : VE192300600
  FW revision   :
  HW revision   : 01
  Vendor        : SmartOptics
  Description   : QSFP28, 100GBase, 1310nm, SM, DDM, 10km, LC
```

5.5.37.6 show slot < 1/2 > interface if-x/y/z transceiver prbs

This command will show the details about the last PRBS test. The results can be presented during a test or after the test.

```
admin@hostname>show slot 1 interface if-1/1/2 transceiver prbs


Status             : not started
Pattern            : PRBS31
Errored Bit Count : 15
Total Bit Count    : 15
Bit Error Rate     : 1.00e+00
Set time           : 0 days, 0 hours, 0 minutes, 0 seconds
Elapsed time       : 0 days, 0 hours, 0 minutes, 45 seconds
```

5.5.37.7 show slot < 1/2 > interface if-x/y/z transceiver appList

This command will show the available application codes for a coherent QSFP-DD transceiver.

```
admin@hostname>show slot 1 interface if-1/1/2 transceiver appList

  App  Payload Rate  Host Format                Media Format              FEC    Modulation  Media Code  Host Code

  ---  ------------  -------------------------  ------------------------  -----  ----------  ----------  ---------

  1    400G          400GAUI-8 C2M (Annex 120E)  ZR400-OFEC-16QAM          OFEC   DP-16QAM    46          11
  2    400G          100GAUI-2 C2M (Annex 135G)  ZR400-OFEC-16QAM          OFEC   DP-16QAM    46          D
  3    300G          100GAUI-2 C2M (Annex 135G)  ZR300-OFEC-8QAM           OFEC   DP-8QAM     47          D
  4    200G          100GAUI-2 C2M (Annex 135G)  ZR200-OFEC-QPSK           OFEC   DP-QPSK     48          D
  5    100G          100GAUI-2 C2M (Annex 135G)  ZR100-OFEC-QPSK           OFEC   DP-QPSK     49          D
  6    100G          100GAUI-2 C2M (Annex 135G)  100GBASE-ZR (Clause 154)  scFEC  DP-QPSK     44          D
```

5.5.37.1 show slot < 1/2 > muxponder

This command will show the details about a specific muxponder card.

```
admin@DCP-2-404-DCP-F-A22---195>show slot 1 muxponder

Muxponder traffic configuration: mux:4x100G-400G
```

5.5.37.2 show slot < 1/2 > och

This show slot x och command will show operational and optical status of all channels configured with port mode edfa or express.

```
admin@dcpf-189>show slot 1 och
Spacing             : 100 [GHz]
Max channels        : 48
Active channels     : 3
Utilization         : 6% (3 of 48)
Configured channels : 7
  EDFA  Express  Off
  ----  -------  ---
     3        4   41

                Rx power  EDFA Tx power  WSS attenuation  Wanted output power
  ChannelId     [dBm]     [dBm]          [dB]             [dBm]                Port mode  Status  Description
  ------------  --------  -------------  ---------------  -------------------  ---------  ------  -------------------------
  och-1/1/9140     -51.4          -43.8              3.4                  3.2  express    idle
  och-1/1/9150     -51.6          -44.0              3.4                  3.2  express    idle    P&ARhlY0q0Ac0B(hLe>WU1...
  och-1/1/9220      -8.0            3.3              5.8                  3.2  edfa       up      &67Pk1SikS9kglx,2y_xd,...
  och-1/1/9520      -7.3            3.1              6.5                  3.2  edfa       up
  och-1/1/9530     -50.6          -43.0              3.4                  3.2  express    idle
  och-1/1/9540     -50.5          -42.9              3.4                  3.2  express    idle
  och-1/1/9600      -8.5            3.1              5.4                  3.2  edfa       up      pU<NXDS2|5VH,aZ3-nftIv...
admin@dcpf-189>
```

Column definitions:

- Spacing: The grid spacing in GHz.
- Max channels: Configured maximum number of channels allowed in the system.
- Active channels: Number of active channels currently in regulation.
- Utilization: Channels used in the system in %.

- Configured channels: Number of channels that are configured to a port, either EDFA or Express.

- EDFA: Number of channels that are configured to EDFA port.
- Express: Number of channels that are configured to Express port.
- Off: Number of channels that are not configured (off).

- Channel Id: Shows the interface name of the system.
- Rx power: Optical power received at the Rx port (EDFA or Express) for the channel.
- EDFA Tx power: Optical power transmitted at the EDFA Tx port for the channel.
- WSS attenuation: The current configured attenuation in the WSS for the channel.
- Wanted output power : The current configured wanted power for the channel.
- Port mode: The configured port for the channel. The port mode can be EDFA, Express or off.
- Status: Identifies the status of Rx and Tx port. Status level can be up, down or idle. Status is idle if the interface has never been activated.
- Description: Configurable interface description text.

5.5.37.3 show slot < 1/2 > och active

The show slot x och active command will filter the output and only show operational and optical status of all channels with Status up or down.

```
admin@dcpf-189>show slot 1 och active

Spacing             : 100 [GHz]
Max channels        : 48
Active channels     : 3
Utilization         : 6% (3 of 48)

Configured channels : 7

  EDFA  Express  Off
  ----  -------  ---
     3        4   41

                Rx power  EDFA Tx power  WSS attenuation  Wanted output power
  ChannelId     [dBm]     [dBm]          [dB]             [dBm]                Port mode  Status  Description
  ------------  --------  -------------  ---------------  -------------------  ---------  ------  -------------------------
  och-1/1/9220      -8.0            3.3              5.8                  3.2  edfa       up      &67Pk1SikS9kglx,2y_xd,...
  och-1/1/9520      -7.4            3.2              6.5                  3.2  edfa       up
  och-1/1/9600      -8.5            3.1              5.4                  3.2  edfa       up      pU<NXDS2|5VH,aZ3-nftIv...
admin@dcpf-189>
```

5.5.37.4 show slot < 1/2 > och all

The show slot 1 och all will show operational and optical status for all available channels.

```
admin@dcpf-189>show slot 1 och all

Spacing             : 100 [GHz]
Max channels        : 48
Active channels     : 3
Utilization         : 6% (3 of 48)

Configured channels : 7

  EDFA  Express  Off
  ----  -------  ---
     3        4   41

                Rx power  EDFA Tx power  WSS attenuation  Wanted output power
  ChannelId     [dBm]     [dBm]          [dB]             [dBm]                Port mode  Status  Description
  ------------  --------  -------------  ---------------  -------------------  ---------  ------  -------------------------
  och-1/1/9140     -51.4          -43.8              3.4                  3.2  express    idle
  och-1/1/9150     -51.6          -44.0              3.4                  3.2  express    idle    P&ARhlY0q0Ac0B(hLe>WU1...
  och-1/1/9160       n/a          -99.0             25.5                  3.2  off        idle    ,>FD.68MO$sc/.E0xqrJVs...
  och-1/1/9170       n/a          -99.0             25.5                  3.2  off        idle
  och-1/1/9180       n/a          -99.0             25.5                  3.2  off        idle
  och-1/1/9190       n/a          -99.0             25.5                  3.2  off        idle    P&ARhlY0q0Ac0B(hLe>WU1...
  och-1/1/9200       n/a          -99.0             25.5                  3.2  off        idle
  och-1/1/9210       n/a          -99.0             25.5                  3.2  off        idle    r0HEeEz6=Xjc5cKICj-9qt...
  och-1/1/9220      -8.0            3.3              5.8                  3.2  edfa       up      &67Pk1SikS9kglx,2y_xd,...
  och-1/1/9230       n/a          -99.0             25.5                  3.2  off        idle    KpYw7<BL|1o7bZsejW@1F&L
  och-1/1/9240       n/a          -99.0             25.5                  3.2  off        idle    aA8mG*pKlLQwu=IBRaEOeG...
  och-1/1/9250       n/a          -99.0             25.5                  3.2  off        idle
```

[This output has been modified to only show relevant information for documentation purposes]

```
  och-1/1/9510       n/a          -99.0             25.5                  3.2  off        idle
  och-1/1/9520      -7.5            3.1              6.5                  3.2  edfa       up
  och-1/1/9530     -50.6          -43.0              3.4                  3.2  express    idle
  och-1/1/9540     -50.5          -42.9              3.4                  3.2  express    idle
  och-1/1/9550       n/a          -99.0             25.5                  3.2  off        idle    ,Esl4,Deg6Js&zjaFAcY(1...
  och-1/1/9560       n/a          -99.0             25.5                  3.2  off        idle
  och-1/1/9570       n/a          -99.0             25.5                  3.2  off        idle    @n(slvD84gWH0/R)2+zKw&...
  och-1/1/9580       n/a          -99.0             25.5                  3.2  off        idle    R (mfj9u=2oowhSb-tFf)1...
  och-1/1/9590       n/a          -99.0             25.5                  3.2  off        idle    UiGuRYFgCC4C=DnHy6XTDf...
  och-1/1/9600      -8.5            3.1              5.4                  3.2  edfa       up      pU<NXDS2|5VH,aZ3-nftIv...
  och-1/1/9610       n/a          -99.0             25.5                  3.2  off        idle    sMlq6L7zG*r/wyX*I$@vEw...

admin@dcpf-189>
```

5.5.37.5 show slot < 1/2 > och <channel id>

The show slot <1/2> och <channel> will show operational and optical status of the specific channel

```
admin@dcpf-189>show slot 1 och 9140

  Channel Id  : 9140
  Description :

Status:

  Status              : idle

  Rx power            : -51.4 [dBm]
  EDFA Tx power       : -43.8 [dBm]
  WSS attenuation     : 3.4 [dB]

  Wanted output power : 3.2 [dBm]
  Port mode           : express

admin@dcpf-189>
```

5.5.37.6 show slot < 1/2 > och edfa-rx defaultAttenuation

The show slot < 1/2 > och edfa-rx defaultAttenuation will present the default attenuation on channels configured with portmode edfa.

```
admin@dcpf-189>show slot 1 och edfa-rx defaultAttenuation

Default attenuation : 3.4 [dB]

admin@dcpf-189>
```

5.5.37.7 show slot < 1/2 > och express-rx defaultAttenuation

The show slot < 1/2 > och edfa-rx defaultAttenuation will present the default attenuation on channels configured with portmode exoress.

```
admin@dcpf-189>show slot 1 och express-rx defaultAttenuation

Default attenuation : 3.4 [dB]

admin@dcpf-189>
```

5.5.37.8 show slot < 1/2 > ocm ocm-rx

The show slot 1 ocm ocm-rx command shows the channel peaks together with total and per channel power measured by the external OCM port.

```
admin@dcpf-189>show slot 1 ocm ocm-rx
Monitor Port Offset : 20.0 [dB]
Total power         : 0.0 [dBm]

               OCM power
  ChannelId    [dBm]
  -----------  ---------
  ocm-1/2/9220       -5.8
  ocm-1/2/9520       -5.8
  ocm-1/2/9600       -6.3
admin@dcpf-189>
```

5.5.37.9 show slot < 1/2 > ocm ocm-rx all

The show slot 1 ocm ocm-rx command shows the total and per channel power measured by the external OCM port.

```
admin@dcpf-189>show slot 1 ocm ocm-rx all

Monitor Port Offset : 20.0 [dB]
Total power         : 0.0 [dBm]

                OCM power
  ChannelId     [dBm]
  ------------  ---------
  ocm-1/1/9140      -79.9
  ocm-1/1/9150      -79.9
  ocm-1/1/9160      -64.5
  ocm-1/1/9170      -76.7
  ocm-1/1/9180      -62.5
  ocm-1/1/9190      -79.9
  ocm-1/1/9200      -63.0
  ocm-1/1/9210      -61.2
  ocm-1/2/9220       -5.8
  ocm-1/1/9230      -79.9
```

[This output has been modified to only show relevant information for documentation purposes]

```
  ocm-1/1/9460      -79.9
  ocm-1/1/9470      -73.8
  ocm-1/1/9480      -79.9
  ocm-1/1/9490      -79.9
  ocm-1/1/9500      -60.1
  ocm-1/1/9510      -72.8
  ocm-1/2/9520       -5.8
  ocm-1/1/9530      -63.6
  ocm-1/1/9540      -79.9
  ocm-1/1/9550      -63.4
  ocm-1/1/9560      -63.9
  ocm-1/1/9570      -79.9
  ocm-1/1/9580      -79.9
  ocm-1/1/9590      -79.9
  ocm-1/2/9600       -6.3
  ocm-1/1/9610      -59.3

admin@dcpf-189>
```

5.5.37.10 show slot < 1/2 > transponder

This command will show the details about a specific transponder card.

```
admin@Stockholm-97>show slot 1 transponder
                                                    Link
  Transponder  Service        Interfaces            status
  -----------  -------------  --------------------  ------
  Slot 1:      DCP-101
   trp-1/1/1   100GbE-100GbE  if-1/1/2  <> if-1/1/1  up
```

5.5.38 show snmp

```
admin@smartoptics-dcp>show snmp

community        - Show SNMP community.
syscontact       - Show SNMP syscontact.
syslocation      - Show SNMP syslocation.
sysname          - Show SNMP sysname.
trapdestination  - Show list of added SNMP trap destinations.

admin@smartoptics-dcp>show snmp
```

5.5.38.1 show snmp community

Displays the configured SNMP community.

```
admin@smartoptics-dcp>show snmp community
Community: public
admin@smartoptics-dcp>
```

5.5.38.2 show snmp trapdestination

Displays the configured SNMP trap destination(s).

```
admin@smartoptics-dcp>show snmp trapdestination
  No  IP Address  Community
  --  ----------  ---------
  1   10.10.10.1  public
admin@smartoptics-dcp>
```

5.5.38.3 show snmp v3 users

Displays the registered SNMPv3 users.

```
admin@smartoptics-dcp>show snmp v3 users

No SNMPv3 users registered.
```

5.5.39 show status

Displays status information of the system for one node.

```
admin@DCP213>show status

  Highest active severity: major
  Number of active alarms: 1

  Critical  Major  Minor  Warning
  --------  -----  -----  -------
         0      1      0        0

                                                Power  Input Voltage  Temperature  Speed

  Location   Status       Alarm  Part number      [W]    [V]            [C]          [rpm]  Fan mode

  ---------  -----------  -----  ---------------  -----  -------------  -----------  -----  --------

  chassis    ok           ok     DCP-2              56            n/a         26.3    n/a  n/a
   fan-1/1   ok           ok     DCP-2-FAN-FB      n/a            n/a         27.0   9591  medium
   psu-1/1   alarm        major  DCP-2-PSU-AC-FB     0              0          n/a      0  medium
   psu-1/2   ok           ok     DCP-2-PSU-AC-FB    57            224          n/a   9344  medium
   slot-1/1  ok           ok     DCP-404           n/a            n/a         26.3    n/a  n/a
   slot-1/2  not present  n/a    n/a               n/a            n/a          n/a    n/a  n/a
```

5.5.40 show syslog access

Display syslog access information.

```
dcp_cli> show syslog access
  Time                 PID   Remote host     Event
  -------------------  ----  --------------  --------------------------
  2020-06-02 08:25:42  1021  10.212.148.241  Local User admin logged in
dcp_cli>
```

5.5.41 show syslog alarm

Displays the syslog alarm information

```
dcp_cli>show syslog alarm
  Time                Alarm
  ------------------  ------------------------------------------------------------------------------------
  2020-05-29 06:16:13  Alarm "Power supply missing" activated on interface psu-1/2 with severity critical.
dcp_cli>
```

5.5.42 show syslog config

Displays syslog configuration information.

```
dcp_cli>show syslog config
  Time                 User       Remote host     Event
  -------------------  ---------  --------------  --------------------
  2020-06-02 08:49:57  admin@CLI  10.212.148.241  clear alarm log
  2020-06-02 08:50:12  admin@CLI  10.212.148.241  config slot 1 reboot
dcp_cli>
```

5.5.43 show syslog status

Displays the status of the configured syslog

```
admin@Stockholm-97>show syslog status
Remote syslog admin status     : up
  Server     Address      Protocol  Port
  ---------  -----------  --------  ----
  Primary    10.10.11.22  udp       514
  Secondary               udp       514


  Log     Remote logging  Facility
  ------  --------------  ---------------
  Access  enabled         auth + authpriv
  Alarm   enabled         local7
  Config  enabled         local6
```

5.5.44 show system

This command shows if the support root user account has been granted root access.

```
admin@Stockholm-97>show system rootaccess

root access: enabled
```

5.5.45 show techlog webserver status

```
admin@dcpf-189>show techlog webserver status
Techlog web server: enable
admin@dcpf-189>
```

5.5.46 show timezone

```
admin@smartoptics-dcp>show timezone
Current timezone: Etc/UTC

admin@smartoptics-dcp>
```

5.5.47 show topology internal

This command shows the configured internal topology entries.

```
admin@dcpf-189>show topology internal

if-1/1/2-tx<-->ppm-1/1/2/osc-rx
if-1/1/2-rx<-->ppm-1/1/2/osc-tx
```

5.5.48 show transponder

Displays the configured services and operational status of all transponders.

```
admin@hostname>show transponder
                                                    Link

  Transponder  Service      Interfaces              status

  -----------  -----------  ----------------------  ------
  Slot 1:      DCP-1610
   trp-1/1/1   10GbE-10GbE  if-1/1/2  <> if-1/1/1   down
   trp-1/1/2   10GbE-10GbE  if-1/1/4  <> if-1/1/3   down
   trp-1/1/3   10GbE-10GbE  if-1/1/6  <> if-1/1/5   down
   trp-1/1/4   10GbE-10GbE  if-1/1/8  <> if-1/1/7   down
   trp-1/1/5   10GbE-10GbE  if-1/1/10 <> if-1/1/9   down
   trp-1/1/6   10GbE-10GbE  if-1/1/12 <> if-1/1/11  down
   trp-1/1/7   10GbE-10GbE  if-1/1/14 <> if-1/1/13  down
   trp-1/1/8   10GbE-10GbE  if-1/1/16 <> if-1/1/15  down
   trp-1/1/9   10GbE-10GbE  if-1/1/18 <> if-1/1/17  down
   trp-1/1/10  10GbE-10GbE  if-1/1/20 <> if-1/1/19  down
```

5.5.49 show uptime

Displays the current uptime of the system.

```
admin@smartoptics-dcp>show uptime

  Location  Uptime          Last boot time
            [x days hh:mm]
  --------  --------------  -------------------
  Chassis   3 days, 16:59   2018-10-18 17:33:07

admin@smartoptics-dcp>
```

5.5.50 show user

Displays the user information

```
admin@smartoptics-dcp>show user info
Username: admin
Group: admin
Type: Local user
```

5.5.51 show version

Displays the SW release running on the system.

```
admin@smartoptics-dcp>show version

Chassis:          Bootloader version: 2016.09.01-DCP-R2.1+ (Mar 23 2018 - 14:03:57 +0100)
                  Sw version        : dcp-release-4.0.1

admin@smartoptics-dcp>
```

5.6 Config commands

DCP-2

```
admin@Stockholm-97>config
aaa                - Configure AAA (Authentication, Authorization and Accounting).
acl                - Configure ACL.
backup             - Configure backup and restore.
cli                - Configure CLI.
crypto             - Configure encryption preferences.
date               - Configure date and time.
hostname           - Configure system hostname.
inactivitytimeout  - Configure inactivity timeout.
network            - Configure network interfaces.
ntp                - Configure network time (NTP).
slot               - Configure traffic module.
snmp               - Configure SNMP parameters.
syslog             - Configure remote syslog server.
system             - Configure system.
techlog            - Configure techlog.
timezone           - Configure time zone.
topology           - Configure topology.
user               - Configure user credentials.
```

DCP-M

```
admin@L8-99>config
aaa                - Configure AAA (Authentication, Authorization and Accounting).
acl                - Configure ACL.
automationMode     - Configure automation mode.
backup             - Configure backup and restore.
chpowerlevel       - Config channel power level parameters.
cli                - Configure CLI.
date               - Configure date and time.
hostname           - Configure system hostname.
inactivitytimeout  - Configure inactivity timeout.
interface          - Configure interface settings.
network            - Configure network interfaces.
ntp                - Configure network time (NTP).
snmp               - Configure SNMP parameters.
syslog             - Configure remote syslog server.
system             - Configure system.
techlog            - Configure techlog.
timezone           - Configure time zone.
user               - Configure user credentials.
```

DCP-R

```
admin@Uppsala-110-A-D1>config
aaa                - Configure AAA (Authentication, Authorization and Accounting).
acl                - Configure ACL.
automationMode     - Configure automation mode.
backup             - Configure backup and restore.
chassis            - Configure chassis.
cli                - Configure CLI.
date               - Configure date and time.
hostname           - Configure system hostname.
inactivitytimeout  - Configure inactivity timeout.
interface          - Configure interface settings.
network            - Configure network interfaces.
node               - Config node.
ntp                - Configure network time (NTP).
snmp               - Configure SNMP parameters.
syslog             - Configure remote syslog server.
system             - Configure system.
techlog            - Configure techlog.
timezone           - Configure time zone.
user               - Configure user credentials.
```

5.6.1 config aaa radius

This command enables and configures the AAA RADIUS services. The DCP authenticates with the RADIUS servers only when RADIUS is configured to admin status

```
admin@dcpf-189>config aaa radius

adminStatus      - Configure RADIUS admin status.
primaryServer    - Configure RADIUS primary server.
retry            - Configure RADIUS server connection retry attempts.
secondaryServer  - Configure RADIUS secondary server.
timeout          - Configure RADIUS server connection timeout.
```

5.6.2 config aaa tacplus

This command enables and configures the AAA TACACS+ security services. The DCP authenticates with the TACACS+ servers only when the tacplus admin status is configured up.

```
admin@smartoptics-dcp>config aaa tacplus
adminStatus      - Configure TACACS+ admin status.
primaryServer    - Configure TACACS+ primary server.
retry            - Configure TACACS+ server connection retry attempts.
secondaryServer  - Configure TACACS+ secondary server.
timeout          - Configure TACACS+ server connection timeout.
```

5.6.3 config acl adminStatus

This command is used to enable or disable the Access Control List (ACL). The ACL is used to protect the DCP-2 against attacks and only allow traffic from trusted management subnets.

When set to enable, only the IP addresses in the IP white list can access the device. It is recommended to run the enable command only after configuring all IP white list rules.

```
admin@RDM-160-1>config acl adminStatus

down  - Configure ACL admin status down.
up    - Configure ACL admin status up.

Description:
This command enables or disables the ACL (Access Control List).
The ACL blocks all addresses except for the White list addresses on the management network
(eth1-4).

admin@RDM-160-1>
```

Example:

```
admin@RDM-160-1>config acl adminStatus down

ACL admin status: down for chassis 1.

admin@RDM-160-1>
```

5.6.4 config acl rule add/delete

This command is used to add/delete hosts/network or IP ranges to the IP white list.

```
admin@DCP-19>config acl rule add
<ACL rule>  - <IPv4> or <IPv4>/<mask bits> or <IPv4>-<IPv4>
current     - Add current client IPv4 address.
admin@DCP-19>config acl rule delete
<ACL rule>  - <IPv4> or <IPv4>/<mask bits> or <IPv4>-<IPv4>
```

Example:

```
admin@DCP-19>config acl rule add 10.10.10.1
Rule '10.10.10.1' added to white list.
```

```
admin@DCP-19>config acl rule delete 10.10.10.1
Rule '10.10.10.1' deleted from white list.
```

5.6.5 config automationMode (DCP-M)

This command is used to configure the automationMode of the unit.
All DCP-M units can be set to the following two modes:

- embedded
- managedCLI

For DCP-M32-CSO-ZR+ it is also possible with the mode:

- embeddedILA

Note that in managedCLI mode you have to set the target output power and the optical control mode manually.

```
admin@DCP-M40-PAM4-ZR---187>config automationMode

embedded    - The node operates in embedded mode.
managedCLI  - The node operates in managed CLI mode.

Description:
Automation mode decides how the unit operates. In embedded mode the unit is dependent on
the remote system to set operational values. In managedCLI mode the unit will operate
without any input from remote system. Then the operational values need to be configured
by the user.

admin@DCP-M40-PAM4-ZR---187>config automationMode
```

5.6.6 config automationMode (DCP-R)

This command is used to configure if the DCP-R node should be used in managedCLI or ManagedNetconf. Automation mode decides how the unit operates. In managedCLI mode the unit is managed from the CLI. In managedNetconf mode the unit is managed over Netconf from an SDN controller. Two modes are available:

managedCLI - The node operates in managed CLI mode. In this mode the user can configure everything from CLI

managedNetconf - The node operates in managed CLI mode. This means that some settings can only be done from Netconf. In managedNetconf mode the channel control parameters are only configurable over Netconf. Other general parameters are still available in CLI.

The CLI configurations that are not available are:

- Config interface if-d/9xxx opticalControlMode
- Config interface if-d/9xxx portMode
- Config interface if-d/line targetOutputPower

```
admin@L8-C-101>config automationMode managedCLI

This command requires the node to reboot. Are you sure you want to change automationMode?
(Yes/No)?: y

Automation mode set to 'managedCLI' mode.

System is restarting...

admin@L8-C-101>
Broadcast message from root@L8-C-101 (Wed May 11 15:26:10 2022):

The system is going down for reboot NOW!
Connection to 10.10.72.101 closed by remote host.
Connection to 10.10.72.101 closed.
```

5.6.7 config automationMode (DCP-2)

This command is used to configure the automationMode of the unit.
For DCP-2 ILAs with shelf controller it is possible to set the two modes:

- managedILA
- standAlone

For DCP-2 ILAs without shelf controller it is also possible with the mode:

- embeddedILA

Note that in standalone mode you have to set the gain and VOA.

```
admin@L8-C-101>config automationMode managedCLI

This command requires the node to reboot. Are you sure you want to change automationMode?
(Yes/No)?: y

Automation mode set to 'managedCLI' mode.

System is restarting...

admin@L8-C-101>
Broadcast message from root@L8-C-101 (Wed May 11 15:26:10 2022):

The system is going down for reboot NOW!
Connection to 10.10.72.101 closed by remote host.
Connection to 10.10.72.101 closed.
```

5.6.8 config backup

5.6.8.1 config backup generate

This command will generate a new backup file.

If any file already exists an error message will be shown with a message to delete the current files. To be able to make a backup file all modules in the system must run the same software version.

It is possible to add a description of the file as an option. Then use the command:
“config backup generate [description]”.
The description can have max 64 characters.

```
admin@dcpf-189> config backup generate "Test config"

Generating new backup ...

Backup file 'Backup-localhost-dcp-release-6.1.1-20210531_193413.tar' generated.
```

5.6.8.2 config backup remove <filename>

This command will remove the backup file.
If *all* is used as filename all files are removed.

```
admin@dcpf-189> config backup remove Backup-localhost-dcp-release-6.1.1-
20210531_191637.tar

Backup file 'Backup-localhost-dcp-release-6.1.1-20210531_191637.tar' removed.
```

5.6.8.3 config backup upload <filename> <URL>

This command uploads a generated backup file to a remote system for this system. The backup file can later be used to restore complete configuration for this system.

The URL shall be in the following format:
<protocol>://[user]:[password]@<IPv4 address>:/<Path to file>/[<File name>]

<protocol> - Can be FTP, HTTP, SCP or SFTP.
[user] and [password] is needed for FTP, SCP and SFTP.
<IPv4 address> - IP address to where the file shall be uploaded to.
<Path to file> - The path to the file.
[File name] - Filename is optional.

```
admin@dcpf-189> config backup upload Backup-localhost-dcp-release-6.1.1-
20210531_193413.tar scp://username:password@10.10.40.86:/tmp/

File 'Backup-localhost-dcp-release-6.1.1-20210531_193413.tar' uploaded to
'scp://username:password@10.10.40.86:/tmp/'.
```

5.6.8.4 config backup download <URL>

This command downloads a backup file from a remote system.

The URL shall be in the following format:
<protocol>://[user]:[password]@<IPv4 address>:/<Path to file>/<File name>

<protocol> - Can be FTP, HTTP, SCP or SFTP.
[user] and [password] is needed for FTP, SCP and SFTP.
<IPv4 address> - IP address from where the file shall be downloaded from.
<Path to file> - The path to the file.
<File name> - Backup file to download.

```
admin@dcpf-189> config backup download scp://username:password@10.10.40.86:/tmp/Backup-
localhost-dcp-release-6.1.1-20210531_193413.tar

File 'Backup-localhost-dcp-release-6.1.1-20210531_193413.tar' downloaded.
```

5.6.8.5 config backup restore <filename>

This command will restore a backup file to the system.

Note that it is necessary to reboot the system after the IP address has been changed. This should be done before restore.

For a backup file to be able to restore the following conditions needs to be met:

1. The Software version needs to be the same on the current system as it was in the backup file. The minor version is not allowed to change. E.g. a backup from DCP R7.0.1 can only be restored on R7.0.1 but not on R7.0.2.

2. The product name for all modules (chassis and slot modules) needs to be the same. E.g. a backup file from a DCP-M40-PAM4-ER can only be restored on a DCP-M40-PAM4-ER.
3. The major hardware revision needs to be same on all modules in the system (chassis and slot modules). The last character can change version. E.g. a backup from hardware revision R1A can be restored on R1B but not on R2A.
4. If a slot module is missing a restore operation is always valid.

```
admin@dcpf-189> config backup restore Backup-localhost-dcp-release-6.1.1-
20210531_193413.tar

Backup file ‘Backup-localhost-dcp-release-6.1.1-20210531_193413.tar’ found.

Validating backup file ...

Backup file is compatible with this system.
Restore the system with the backup file 'Backup-localhost-dcp-release-6.1.1-
20210531_193413.tar'.

Restore chassis is in progress
Creating persistent file system image .
Restoring ...
Done

Restore slot 1 is in progress
Patching backup .
Copying data to persistent file system image .
Restoring ..
Done

Restore slot 2 is in progress
Copying data to persistent file system image .
Restoring .
Done

Please reboot the system to activate the new configuration.
```

5.6.8.6 config backup validate <filename>

This command validates if a backup file is compatible with this system or not.

For a backup file to compatible the following conditions needs to be met:

1. The Software version needs to be the same on the current system as it was in the backup file. The minor version is allowed to change. E.g. a backup from DCP R6.1.1 can be restored on R6.1.2 but not on R6.2.1.
2. The product name for all modules (chassis and slot modules) needs to be the same. E.g. a backup file from a DCP-M40-PAM4-ER can only be restored on a DCP-M40-PAM4-ER.
3. The major hardware revision needs to be same on all modules in the system (chassis and slot modules). The last character can change version. E.g. a backup from hardware revision R1A can be restored on R1B but not on R2A.
4. If a slot module is missing a restore operation is always valid.

```
admin@dcpf-189>config backup validate Backup-localhost-dcp-release-6.1.1-
20210531_192751.tar

Validating backup file ...

Backup file
-----------
File name   : Backup-localhost-dcp-release-6.1.1-20210531_192751.tar
Date        : 2021-05-31 19:27:51
Hostname    : localhost
SW version  : dcp-release-6.1.1
Chassis     : DCP-2 R2A
Slot 1      : DCP-F-DE22 R1A
Slot 2      : DCP-F-A22 R1A
Description :

Backup file is compatible with this system.
```

5.6.9 config certified trx

5.6.9.1 config certified trx qsfp fetch <file name>

This command will copy the custom transceiver file for QSFP28/QSFP-DD to the system and will overwrite the existing one.

```
admin@hostname>config certified trx qsfp fetch /tmp/so-downloads/trx_custom.json

This command will copy the transceiver custom file to the system and will overwrite the
existing one.
Are you sure you want to continue? (Yes/NO): y

File fetched and pushed to slots. (New slots will automatically get the new file, but will
require a warm reboot after slot insertion)

Please warm reboot the system to take effect.

admin@hostname>reboot

Rebooting slot 1.....done
Rebooting slot 2.....done
Rebooting chassis....done

Reboot in progress. It may take a few minutes for the system to be fully available again.

Broadcast message from root@hostname (Mon Jun  2 11:03:05 2025):

The system is going down for reboot NOW!
```

5.6.9.2 config certified trx qsfp clear

This command will remove the custom transceiver file for QSFP28/QSFP-DD from the system.

```
admin@hostname>config certified trx qsfp clear

This will remove the transceiver custom file from the system.
Are you sure you want to continue? (Yes/NO): y

Transceiver custom file cleared.

Please warm reboot the system to take effect.

admin@hostname>reboot

Rebooting slot 1.....done
Rebooting slot 2.....done
Rebooting chassis....done

Reboot in progress. It may take a few minutes for the system to be fully available again.

Broadcast message from root@hostname (Mon Jun  2 11:12:04 2025):

The system is going down for reboot NOW!
```

5.6.10 config chassis

5.6.10.1 config chassis <x> hostname

This command is used to configure the hostname for a chassis.

```
admin@Uppsala-110-A-D1>config chassis 2 hostname <hostname>
```

5.6.10.2 config chassis <x> interface add <center frequency> <width> <xc port>

This command is used to configure a frequency slot on a cross-connection port in a ROADM.
The center frequency should be set in THz with 6.25GHz steps.
The width should be set in GHz with 12.5GHz steps.
The xc port is the cross connection port where this frequency slot should be configured.

```
admin@hostname>config chassis 1 interface add 196.00000 150.00 xc33

Created channel with center frequency 196, width 150 and port xc33
```

5.6.10.3 config chassis <x> interface delete <interface>

This command is used to delete a frequency slot in a ROADM.

```
admin@hostname>config chassis 1 interface delete if-1/19600000

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): y

Deleted channel if-1/19600000
```

5.6.11 config chpowerlevel PAM4/manual/CoherentNRZ

This command is used to configure the chpowerlevel of the unit.

For DCP-M units with support for PAM4:

```
admin@hostname>config chpowerlevel

PAM4         - Configure channel power level mode PAM4.
manual       - Configure channel power level manually.
CoherentNRZ  - Configure channel power level mode CoherentNRZ.
Description:
These commands configures the wanted channel power mode.

PAM4    : This is the default mode, which is the optimum setting for PAM4
compatibility.
manual  : Manual mode allows for custom target power values and should only be
used if recommended by support.
CoherentNRZ : The CoherentNRZ mode can be used to optimize the system for 1G-32G
and 100G Coherent for extended distance. PAM4 is not supported in this mode.

admin@hostname>
```

For DCP-M units without PAM4:

```
admin@hostname>config chpowerlevel

CoherentNRZ  - Configure channel power level mode CoherentNRZ.
manual       - Configure channel power level manually.

Description:
These commands configures the wanted channel power mode.

manual  : Manual mode allows for custom target power values and should only be
used if recommended by support.
CoherentNRZ : The CoherentNRZ mode can be used to optimize the system for 1G-32G
and 100G Coherent for extended distance. PAM4 is not supported in this mode.
admin@hostname>
```

```
admin@hostname>config chpowerlevel PAM4

Channel power mode set to PAM4.

admin@hostname>
```

```
admin@hostname>config chpowerlevel manual 4.6 4.5

Channel power mode set to manual.
Booster Tx target power set to : 4.6
Preamp Tx target power set to  : 4.5

admin@hostname>
```

```
admin@hostname>config chpowerlevel CoherentNRZ

Channel power mode set to nonPAM4.

admin@hostname>
```

5.6.12 config cli

This command is used to configure if the system should as for confirmation if the operation can be traffic affecting.

```
admin@ROADM-LC1-DEG1>config cli serviceinterruptquestions enable

Service interrupt questions set to 'enabled'.
```

5.6.13 config crypto cryptoMode

This command is used to enable encryption mode and crypto user.

```
admin@hostname>config crypto
cryptoMode  - Configure encryption mode.
admin@hostname>config crypto
```

```
admin@smartoptics-dcp>>show transponder
  Transponder  Service         Interfaces              Link
                                                       status
  -----------  --------------  ----------------------  ------
  Slot 1:      DCP-1610
   trp-1/1/1   10GbE-10GbE     if-1/1/2  <> if-1/1/1   up
   trp-1/1/2   10GbE-10GbE     if-1/1/4  <> if-1/1/3   up
   trp-1/1/3   10GbE-10GbE     if-1/1/6  <> if-1/1/5   up
   trp-1/1/4   10GbE-10GbE     if-1/1/8  <> if-1/1/7   up
   trp-1/1/5   10GbE-10GbE     if-1/1/10 <> if-1/1/9   up
   trp-1/1/6   10GbE-10GbE     if-1/1/12 <> if-1/1/11  up
   trp-1/1/7   10GbE-10GbE     if-1/1/14 <> if-1/1/13  up
   trp-1/1/8   10GbE-10GbE     if-1/1/16 <> if-1/1/15  up
   trp-1/1/9   10GbE-10GbE     if-1/1/18 <> if-1/1/17  up
   trp-1/1/10  STM64-OTU2      if-1/1/20 <> if-1/1/19  down
  Slot 2:      DCP-1610
   trp-1/2/1   10GbE-10GbE     if-1/2/2  <> if-1/2/1   up
   trp-1/2/2   10GbE-10GbE     if-1/2/4  <> if-1/2/3   up
   trp-1/2/3   10GbE-10GbE     if-1/2/6  <> if-1/2/5   up
   trp-1/2/4   10GbE-10GbE     if-1/2/8  <> if-1/2/7   up
   trp-1/2/5   10GbE-10GbE     if-1/2/10 <> if-1/2/9   up
   trp-1/2/6   10GbE-10GbE     if-1/2/12 <> if-1/2/11  up
   trp-1/2/7   10GbE-10GbE     if-1/2/14 <> if-1/2/13  up
   trp-1/2/8   10GbE-10GbE     if-1/2/16 <> if-1/2/15  up
   trp-1/2/9   10GbE-10GbE     if-1/2/18 <> if-1/2/17  up
   trp-1/2/10  10GbE-OTU2eEnc  if-1/2/20 <> if-1/2/19  down
admin@smartoptics-dcp>show snmp
```

Column definitions:

- ***Transponder***: Identifies the port association to the transponder in the (if-c/s/i) format, where
  - c = chassis number
  - s = slot number
  - i = interface number
- **Service:** Identifies the traffic format configured on the transponder
- **Interface**: Identifies the associated interfaces
- **Link status**: Status of the Link. Status can either be “up” or “down”

5.6.14 config date

This command can be used to configure data and time if no NTP server is available or set

```
admin@DCP-19>config date
<date>  - Date, in format YYYY-MM-DD
<time>  - Time, in format HH:MM:SS
```

Example:

```
admin@DCP-19>config date 2018-01-01 00:00:00
Date set to: 2018-01-01 00:00:00
```

5.6.15 config gNMI

5.6.15.1 config gnmi service enable/disable

This command is used to enable or disable gNMI streaming. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi service enable
Service: enabled

root@M32-gNMI>config gnmi service disable
Service: disabled
```

5.6.15.2 config gnmi mode secure/insecure

This command is used to configure secure or insecure mode for gNMI streaming. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi mode secure
Mode: secure

root@M32-gNMI>config gnmi mode insecure
Mode: insecure
```

5.6.15.3 config gnmi tls privateKey generate

This command is used to generate a private key for TLS in gNMI streaming. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi tls privateKey generate
Enter key type [RSA,EC]: EC

Enter Curve (valid curves can be found with 'openssl ecparam -
list_curves'): secp384r1
This operation can take some time, keep patient.
private key generated.
```

5.6.15.4 config gnmi tls deviceCert csr

This command is used to create a certificate signing request (CSR), for TLS in gNMI streaming. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi tls deviceCert csr

Enter Country (C): SE
Enter State (ST): Stockholm
Enter Locality (L): Stockholm
Enter Organization (O): Smartoptics

Generated CSR:
-----BEGIN CERTIFICATE REQUEST-----
MIIBVTCB3QIBADBeMQswCQYDVQQGEwJTRTESMBAGA1UECAwJU3RvY2tob2xtMRIw
EAYDVQQHDAlTdG9ja2hvbG0xFDASBgNVBAoMC1NtYXJ0b3B0aWNzMREwDwYDVQQD
DAhNMzItZ05NSTB2MBAGByqGSM49AgEGBSuBBAAiA2IABF8HTGYTwyoLbyZyV6Rl
bmpTUuV2tv7bhq5fBYVkgdYzR+Az6956fTAPY8OyQTRz1pbyGdh4yctk5DRXQh7l
Fo+akRfMMbWUVJLpUt/HHHjXh5pBdiXe3uaajq7cKxOgO6AAMAoGCCqGSM49BAMC
A2cAMGQCMAxduJQ9YlvNlwyfbJGroIsgWHSmbG2ms6pK9DeLz502xgjMLat/KIQR
Vj3CcMcurwIwaYc8T7uibTGoFKt94PwFv2sNptcs5v1C9gRBCyE8MsL3AmypslY+
op0a/ehVGy/C
-----END CERTIFICATE REQUEST-----
```

5.6.15.5 config gnmi tls deviceCert import device

This command is used to import a device certificate for TLS in gNMI streaming. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi tls deviceCert import device
Input content of cert
-----BEGIN CERTIFICATE-----
<snip>
-----END CERTIFICATE-----, end with an empty line. :
```

5.6.15.6 config gnmi tls deviceCert import ca

This command is used to import a Certificate Authority (CA) certificate file for TLS in gNMI streaming. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi tls deviceCert import ca
Input content of cert
-----BEGIN CERTIFICATE-----
<snip>
-----END CERTIFICATE-----, end with an empty line. :
```

5.6.15.7 config gnmi tls clientCert cert ignore/validate

These commands are used to activate or deactivate the use of mutual TLS (mTLS) in gNMI streaming. Validate means that mTLS is activated and that both the client and the device must use certificates to identify themselves. Ignore means that standard TLS is used. In standard TLS, it is only the device that will use a certificate. It is only available on DCP-M32-CSO-ZR+ in R12.0.1.

```
root@M32-gNMI>config gnmi tls clientCert cert ignore
Client cert: ignore

root@M32-gNMI>config gnmi tls clientCert cert validate
Client cert: validate
```

5.6.16 config hostname

This command is used to configure the hostname of the unit.

```
admin@DCP-M-19>config hostname
<hostname>  - Hostname string. Max length 63 characters.
      Valid characters are 0-9, a-z, A-Z, - and .
      As long as - and . not as start/end character and digit not as start character.
      Note that this is the same as the SNMP sysname.
```

Example:

```
admin@DCP-19>config hostname DCP-19
Hostname set to 'DCP-19'
```

5.6.17 config inactivitytimeout

The inactivity time out can be set to a value in minutes ranging from 0 (disabled) to 300.

```
root@hostname>config inactivitytimeout <time in minutes>

<inactivitytimeout>  - Time in minutes until automatic logout occurs if there is no
activity in CLI <Time 0-300>.
```

5.6.18 config interface (DCP-M)

This command is used to configure the Interfaces.

```
admin@hostname>config interface
if-1/9210  - Configure interface.
if-1/9220  - Configure interface.
if-1/9230  - Configure interface.
[This output has been modified to only show relevant information for documentation purposes]
if-1/9590  - Configure interface.
if-1/9600  - Configure interface.
if-1/line  - Configure interface.

admin@hostname>config interface
```

5.6.18.1 config interface if-1/line dcm (only valid for ZR R2A units)

This command is used to controls the DCM switch of the Line Rx fiber of the system.

Auto - Automatic control of DCM setting by the system.

Manual - Manual control of the DCM setting.

```
admin@DCP-M40-PAM4-ZR---187>config interface if-1/line dcm

auto    - Automatic control of DCM setting by the system.
manual  - Manual control of the DCM setting.

Description:
This command controls the DCM switch of the Line Rx fiber of the system.

admin@DCP-M40-PAM4-ZR---187>config interface if-1/line dcm
```

5.6.18.2 config interface <interface id> description

This command is used to configure interface description on the line ports.

```
admin@hostname>config interface if-1/line description

<description>  - Interface description text, max 128 characters.
                 Use double quotation marks (") for a description text containing space
characters.
                 Use two double quotation marks ("") to clear description text.
                 Valid characters are A-Z, a-z, 0-9, [blank] and -_,.*$/()+=<>|@&

admin@hostname>config interface if-1/line description
```

5.6.18.3 config interface if-1/line fiberMode

This command configures the node to single or dual line fiber mode. Setting this configuration requires the node to reboot.

```
admin@DCP-M40-PAM4-ZR---187>config interface if-1/line fiberMode

dualFiber     - Configure node to normal line dual fiber mode (default).
singleFiberA  - Configure node to single fiber mode type A.
singleFiberB  - Configure node to single fiber mode type B.

Description:
This command configures the node to single or dual line fiber mode. Setting this configuration
requires the node to reboot.

dualFiber    : This is the default mode and is used when dual line fiber is used.
singleFiberA : When single fiber mode is wanted one node is set to singleFiberA and one to
singleFiberB.
singleFiberB : When single fiber mode is wanted one node is set to singleFiberA and one to
singleFiberB.

admin@DCP-M40-PAM4-ZR---187>config interface if-1/line fiberMode
```

5.6.18.4 config interface <interface id> formatDetection auto/manual

This command is used to configure the formatdetection on client interfaces

```
admin@DCP-M40-PAM4-ER-181>config interface if-1/9400 formatDetection auto

Traffic format set to 'auto'

admin@DCP-M40-PAM4-ER-181>
```

```
admin@DCP-M40-PAM4-ER-181>config interface if-1/9400 formatDetection manual 100Gpam4

Traffic format set to '100Gpam4'.

admin@DCP-M40-PAM4-ER-181>
```

5.6.18.1 config interface if-1/line tdcm auto/manual (Not valid for DCP-M40-C-ZR+)

This command is used to configure the dispersion compensation mode.

```
admin@DCP-M-19>config interface if-1/line tdcm

auto    - Automatic control of TDCM setting by the system.
manual  - Manual control of the TDCM setting.

Description:
This command controls the TDCM dispersion compensation of the Line Rx fiber of the
system.

admin@DCP-M-19>config interface if-1/line-rx tdcm
```

5.6.18.2 config interface if-1/line voapreset auto/extendedDistance

This command is used to configure and remove the preset attenuation from the integrated VOA and enables the possibility to commission NRZ and Coherent waves for extended distances where the attenuation is above PAM4 limits.

```
admin@DCP-M-19>config interface if-1/line voapreset

auto              - Set the VOA preset mode to auto (Default).
extendedDistance  - Set the VOA preset mode to extendedDistance.

Description:
This command configures the VOA preset mode. VOA preset allows extended distances on the line side.
Refer to system documentation for more details.

  - auto             - The system is set to work for normal line fiber distance. (Default)
  - extendedDistance - The system is set to operate on extended line fiber distance.

admin@DCP-M-19>config interface if-1/line voapreset
```

5.6.18.3 config interface if-1/line darkMode enable/disable

This command is used to configure darkmode on a unit. In darkmode the unit does not dissipate any light. Amplifiers and OSC transceivers are turned off. Darkmode can be activated for a specific number of minutes. If enabled, it can also be disabled manually at any time.

```
root@hostname>config interface if-1/line darkMode

disable  - Disable Dark Mode. (Enable optical output power)
enable   - Enable Dark Mode in 1-120 minutes. (Disable optical output power)

root@hostname>config interface if-1/line darkMode enable 60

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes
```

5.6.19 config interface (DCP-R)

5.6.19.1 config interface <interface id> wssDropAttenuation

This command is used to configure the attenuation per channel on the drop port.

```
admin@SO-ROADM-1-D1>config interface if-1/9210 wssDropAttenuation 5

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Attenuation set to 5 [dB] on interface if-1/9210.
```

5.6.19.2 config interface if-<direction>/9xxx opticalControlMode

This command is used to configure the optical control mode for a specific channel. The optical control mode can be set to three different statuses:

- gainLoss : In gainLoss mode the WSS attenuation for a channel is fixed to the latest setting. Optical light can pass, but will not be regulated.
- off : In off mode the WSS attenuation value for that channel is maximum so as much as possible of the channel power is blocked.
- power : In power mode the channel is regulated towards a wanted power value on Line Tx in dBm. The WSS attenuation is changed so that the wanted power is reached.

Note that this command is only available in managedCLI mode.

```
admin@L8-109-B-D1>config interface if-2/9610 opticalControlMode power

Configured interface if-2/9610 opticalControlMode to power
```

5.6.19.3 config interface if-<direction>/9xxx portMode

This command is used to configure the port mode for a specific channel. The port mode defines how the cross connection on the WSS is configured. Port mode can be set to localAD or XC1 to XC3.

Note that this command is only available in managedCLI mode.

```
admin@L8-109-B-D1>config interface if-2/9610 portMode XC1

Port mode  of 'if-2/9610 is set to XC1'.
```

5.6.19.4 config interface if-<direction>/line targetOutputPower

This command is used to configure the target output power for a specific channel. The output power here is the power out from the line port of the ROADM.

Note that this command is only available in managedCLI mode.

```
admin@L8-109-B-D1>config interface if-2/line targetOutputPower -4.1

Target Output Power set to -4.1 [dBm].
```

5.6.19.1 config interface if-<direction>/line booster gain

This command is used to configure the booster gain for a certain direction in a DCP-R ROADM node. The valid range for the booster gain will depend on the DCP-R model.

```
admin@SO-ROADM-4-D1>config interface if-1/line booster gain



<gain>  - The wanted Booster EDFA gain.



Description:

This command sets the wanted Booster EDFA gain.

Valid valid range for <gain> is between ‘20.0’ to ‘24.0’ [dB].



admin@SO-ROADM-4-D1>config interface if-1/line booster gain 22



This command can be service interrupting.

Are you sure you want to continue? (Yes/NO): yes



EDFA gain set to '22.0' [dB].
```

5.6.19.2 config interface if-<direction>/line otdr start

This command starts a OTDR measurement on the selected line interface.

Refl No : Reflection number.
Distance: Distance to the reflection.
Ghost : Indicates if the reflection is likely to be a ghost reflection.

```
admin@demo-rdm34-d1>config interface if-2/line otdr start

Date    : 2024-08-20
Time    : 08:25:59
OSC RTT : 20.1 [km]

  Refl No  Distance  Ghost
           [m]
  -------  --------  -------------
  1           20148  No
  2           40254  Yes(probably)
```

5.6.19.3 config interface if-<direction>/line otdr refpoint <reference number>

This command will set one of the earlier OTDR measurement series as a reference point series. This series is persistent and can be used to compare later OTDR measurements against a known reference point.

```
admin@demo-rdm34-d1>config interface if-2/line otdr refpoint 2

OTDR refpoint set to series 2.
```

5.6.20 config network

This command is used to configure the Network Management Interfaces.

```
admin@smartoptics-dcp>config network
console  - Configure network interface console.
eth1     - Configure network interface eth1.
eth2     - Configure network interface eth2.
eth3     - Configure network interface eth3.
eth4     - Configure network interface eth4.
ipv4dns  - Configure DNS IPv4 addresses.
local    - Configure network interface local.
mgmt     - Configure network interface mgmt.
admin@smartoptics-dcp>config network
```

5.6.20.1 config network < network interface> description

This command is used to configure interface description on the network interfaces.

```
admin@smartoptics-dcp>config network eth1 description
<description>  - Network interface description text, max 50 characters.
                 Use double quotation marks (") for a description text containing space
characters.
                 Use two double quotation marks ("") to clear description text.
                 Valid characters are A-Z, a-z, 0-9, [blank] and -_,.*$/()+=<>|@&
admin@smartoptics-dcp>
```

```
admin@L8-109-DCPR-D1>config chassis 9 network eth1 description xyz126


Description for network interface eth1 set to 'xyz126'.
```

5.6.20.2 config network ipv4dns

This command is used to configure DNS on the network interfaces.

```
admin@smartoptics-dcp>config network ipv4dns

<primary DNS IPv4 address>    - New primary DNS IPv4-address.
[secondary DNS IPv4 address]  - New secondary DNS IPv4-address (optional).

admin@smartoptics-dcp>config network ipv4dns
```

5.6.20.3 config network mgmt remoteManagement if-1/line

This command is used to configure a management channel over the OSC.

```
admin@DCP-M40-PAM4-ER-12>config network mgmt remoteManagement if-1/line
disable enable
admin@DCP-M40-PAM4-ER-12>
```

5.6.20.4 config network mgmt ipv4address <addr> <netmask> <gateway>

This command is used to configure network settings on the mgmt Interface.

```
admin@smartoptics-dcp>config network mgmt ipv4address
<IPv4 address>          - IPv4 address in dotted decimal format.
<netmask>               - IPv4 netmask in dotted decimal format.
[gateway IPv4 address]  - IPv4 gateway address in dotted decimal format.
```

5.6.20.5 config network <interface> ipv4address <addr> <netmask>

This command is used to configure IP network settings on the an Ethernet interface on DCP-SCP-28P.

```
admin@smartoptics-dcp> config network if-0/28 ipv4address 10.80.25.4 255.255.255.252
<IPv4 address>          - IPv4 address in dotted decimal format.
<netmask>               - IPv4 netmask in dotted decimal format.
```

5.6.21 config network ospf

This section contains commands for OSPF settings on DCP-SC-28P.

5.6.21.1 config network osfp adminStatus

This command is used for setting the admin status for OSPF functionality in general for a node with DCP-SC-28P. Note that OSPF admin status per interface is also configurable.
Admin status can be set to up or down.

```
admin@smartoptics-dcp> config network ospf adminStatus up
```

5.6.21.2 config network osfp interface <interface> adminStatus

This command is used for setting the admin status for OSPF on a specific interface on DCP-SC-28P.

Admin status can be set to up or down.

```
admin@smartoptics-dcp> config network osfp interface if-0/1 adminStatus up
```

This command is used for creating a new OSPF area. The area type is also necessary to configure.

In this release the only possible area type is nssa.

```
admin@smartoptics-dcp> config network osfp area 0.0.83.80 nssa
```

5.6.21.3 config network osfp areaId <new area>

This command is used for create a new OSPF area to be used for multiple ports.

```
admin@smartoptics-dcp> config network osfp areaId 0.0.83.80
```

5.6.21.4 config network osfp <interface> areaId <new area>

This command is used for configuring a new OSPF area per interface.

```
admin@smartoptics-dcp> config network osfp if-0/2 areaId 0.0.83.80
```

5.6.22 config network tunnel (DCP-F)

This command creates a management tunnel from an OSC port on a DCP-F card to an Ethernet port on the DCP-2 chassis.

```
root@DCP-2-DCP-F-DE22-A22--193>config network tunnel if-1/2/2 if-1/2/eth1

Management tunnel created.

root@DCP-2-DCP-F-DE22-A22--193>
```

5.6.23 config network tunnel (DCP-R with DCP-SC-28P)

This command creates a management tunnel from an OSC port on a DCP-R card to an Ethernet port on the DCP-SC-28P chassis. VLAN 8 should be used.

```
root@DCP-R-ABC>config network tunnel if-1/osc if-1/2/eth4 vlan 8
```

5.6.24 config network tunnel (ILA with DCP-SC-28P)

This command creates a management tunnel from an OSC port on an ILA to an Ethernet port on the DCP-SC-28P chassis. The setting “untagged” should be used.

```
root@DCP-2-ILA-25> config network tunnel if-1/1/2 if-1/1/eth1 untagged
```

5.6.25 config node info

This command is used to config node ID and geolocation.

```
admin@L8-C-101>config node info id
<Node Id>

admin@L8-C-101>config node info id Huskvarna
Node id added.
```

```
admin@L8-C-101>config node info geolocation
<latitude>  <longitude>

admin@L8-C-101>config node info geolocation 11 11
Node geolocation added.
```

5.6.26 config node member

This command is used to configure chassis that should belong to same node in a master-slave configuration in DCP-R. It is important to know the serial number of the new node member as this parameter is used in the configuration.

```
admin@L8-109-B-D1>show node members

  Id  Location   Hostname     Part number  Serial number  IP address                      Status

  --  ---------  -----------  -----------  -------------  ------------------------------  ------

  1   chassis-1  L8-109-B-D1  DCP-R-9D-CS  S2139DCPR0015  fe80::96de:eff:fe05:368%eth0.2  Master
  2   chassis-2  L8-109-B-D2  DCP-R-9D-CS  S2142DCPR0018  fe80::96de:eff:fe05:3d0%eth0.2  Slave

admin@L8-109-B-D1>config node member add S2126DCPR0012 chassis-3

Node member S2126DCPR0012 added as chassis-3.
```

5.6.27 config node member replace

This command is used when one chassis or a shelf controller in a node should be replaced. It is important to know the serial number of the new node member as this parameter is used in the configuration.

Example of chassis replacement:

```
admin@L8-109-B-D1>config node member replace S2142DCPR0018 S2126DCPR0012

Node member chassis-2 serial number S2142DCPR0018 replaced with S2126DCPR0012.
```

Note that you have to reboot the slave chassis after replace.

Example of shelf controller replacement:

```
admin@L8-109-B-D1>config node member replace
HD00848ZJRD   S2126DCPR0012 S2142DCPR0018 S2233DCPR0193 S2233DCPR0194 S2233DCPR0197 S2233DCPR0200
S2233DCPR0202 S2233DCPR0203

admin@L8-109-B-D1>config node member replace HD00848ZJRD HD0087E6SHK

Node member chassis-0 serial number HD00848ZJRD replaced with HD0087E6SHK.

admin@L8-109-B-D1>show node members

  Id  Location   Hostname     Part number  Serial number  IP address                      Status
  --  ---------  -----------  -----------  -------------  ------------------------------  ------
  0   chassis-0  L8-109-B-D1  -            HD00848ZJRD    n/a                             -
  1   chassis-1  L8-109-B-D1  DCP-R-9D-CS  S2139DCPR0015  fe80::96de:eff:fe05:368%eth0.2  Master
  2   chassis-2  L8-109-B-D2  DCP-R-9D-CS  S2142DCPR0018  fe80::96de:eff:fe05:3d0%eth0.2  Slave
  3   chassis-3  L8-109-B-D3  DCP-R-9D-CS  S2126DCPR0012  fe80::96de:eff:fe05:1b7%eth0.2  Slave
  4   chassis-4  L8-109-B-D4  DCP-R-9D-CS  S2233DCPR0197  fe80::96de:eff:fe05:a47%eth0.2  Slave
  5   chassis-5  L8-109-B-D5  DCP-R-9D-CS  S2233DCPR0193  fe80::96de:eff:fe05:a43%eth0.2  Slave
  6   chassis-6  L8-109-B-D6  DCP-R-9D-CS  S2233DCPR0194  fe80::96de:eff:fe05:a44%eth0.2  Slave
  7   chassis-7  L8-109-B-D7  DCP-R-9D-CS  S2233DCPR0200  fe80::96de:eff:fe05:a4a%eth0.2  Slave
  8   chassis-8  L8-109-B-D8  DCP-R-9D-CS  S2233DCPR0202  fe80::96de:eff:fe05:a4c%eth0.2  Slave
  9   chassis-9  L8-109-B-D9  DCP-R-9D-CS  S2233DCPR0203  fe80::96de:eff:fe05:a4d%eth0.2  Slave
```

5.6.28 config node topology internal

This command is used to configure the internal topology.

```
admin@L8-109-B-D1>config node topology internal if-1/XC1 if-2/XC2

Internal topology created
```

5.6.29 config node topology apply

This command is used to save the internal configuration so that it can be used in managedNetconf mode.

```
admin@CS11-ROADM-DEG1>config node topology apply

Applying internal node topology configuration

Generating new topology in system.

.............................................

Succesfully applied topology internal configuration!
```

5.6.30 config node topology virtual-port add

This command is used to add virtual ports to an XC interface. The number after the XC port will determine how many new XC ports that are added. Don’t forget to run “config node topology apply” to save the new ports after they have been created.

```
admin@COL-R2-ROADM-202-SC28>config node topology virtual-port add if-1/XC4Wss4 2

Virtual port C17 added to if-1/XC4Wss4

Virtual port C18 added to if-1/XC4Wss4
```

5.6.31 config node topology virtual-port delete

This command is used to delete virtual ports from an XC interface. The number after the XC port defines which virtual port that should be deleted. Use tab to see available ports.
Don’t forget to run “config node topology apply” to save the new topology after the virtual port has been deleted.

```
admin@COL-R2-ROADM-202-SC28>config node topology virtual-port delete if-
1/XC4Wss4 C17

Virtual port C17 deleted from if-1/XC4Wss4.
```

5.6.32 config ntp

This command is used to configure the NTP server's addresses. The DCP-2 synchronizes with the NTP servers only when the NTP admin status is up.

```
admin@DCP-19>config ntp
adminStatus      - Configure NTP adminStatus : up / down
primaryServer    - Configure NTP primary server  <primary NTP server IPv4 address>
secondaryServer  - Configure NTP secondary server <secondary NTP server IPv4 address>
admin@DCP-19>config ntp
```

5.6.33 config slot <x> coldStart

This command is used to coldStart a specific slot.

```
rescueCLI->config slot 1 coldStart

This command is traffic interrupting.
Are you sure you want to coldstart the traffic module in slot 1? (Yes/NO)? y

Turning off power for the traffic module for 10 seconds, please wait.

Reset in progress, it may take up to 1 minute for the traffic module to be fully
available again.
```

5.6.34 config slot < 1/2 > combinedMode enable/disable

This command configures the operating mode "combinedMode" where the DE22 unit operates together with an A22 unit. This means that the monitor port loss on the A22 is used automatically in the OCM in DE22.

enable – The unit operates together with an amplifier unit in the other slot. This mode requires that an amplifier unit is located in the other slot.

disable – The unit operates alone.

```
admin@dcpf-189>config slot 1 combinedMode enable

Combined mode set to 'enable'
```

5.6.35 config slot < 1/2 > interface

This command is used to configure the adminstatus and description on SFP the interfaces.

```
admin@dcpf-189>config slot 1 interface 1

adminStatus  - Configure interface admin status.
attenuation  - Configure interface attenuation.
description  - Configure interface description.

admin@dcpf-189>config slot 1 interface 1
```

5.6.35.1 config slot <1/2> interface <1/2> adminStatus

This command is used to configure the adminstatus on the SFP interfaces.

```
admin@dcpf-189>config slot 1 interface 1 adminStatus

down  - Configure interface admin status 'down'.
up    - Configure interface admin status 'up'.

admin@dcpf-189>config slot 1 interface 1 adminStatus
```

5.6.35.2 config slot <1/2> interface <1/2> attenuation

This command is used to configure attenuation when VOA-SFP´s are used on SFP interfaces.

```
admin@dcpf-189>config slot 1 interface 1 attenuation

<attenuation>  - Wanted attenuation. Valid range is ‘0.0’ to ‘25.5’ [dB].

admin@dcpf-189>config slot 1 interface 1 attenuation
```

5.6.35.3 config slot <1/2> interface <1/20> txInvSymbolsThreshold

This command configures the alarm threshold for invalid symbols on the Tx port.

```
admin@hostname>config slot 1 interface 2 txInvSymbolsThreshold 100

TX InvSymbols threshold set to '100'.

admin@hostname>
```

5.6.35.4 config slot <1/2> interface <1/20> rxInvSymbolsThreshold

This command configures the alarm threshold for invalid symbols on the Rx port.

```
admin@hostname>config slot 1 interface 2 rxInvSymbolsThreshold 100

RX InvSymbols threshold set to '100'.

admin@hostname>
```

5.6.35.5 config slot <1/2> interface <1/20> bipThreshold

This command configures the BIP threshold for getting alarms.

```
admin@hostname>config slot 1 interface 1 bipThreshold 500

BIP threshold set to '500'.

admin@hostname>
```

5.6.35.6 config slot <1/2> interface <1/2> description

This command is used to configure the description on the SFP interfaces.

```
admin@dcpf-189>config slot 1 interface 1 description

<description>  - Interface description text, max 128 characters.
                 Use double quotation marks (") for a description text containing space
characters.
                 Use two double quotation marks ("") to clear description text.
                 Valid characters are A-Z, a-z, 0-9, [blank] and -_,.*$/()+=<>|@&

admin@dcpf-189>config slot 1 interface 1 description
```

5.6.35.7 config slot <1/2> interface <1/20> channelID

This command is used to configure the channel number for ports with tunable transceivers.

```
admin@hostname>config slot 1 interface 11 channelId 9460

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Channel Id set to '9460'.

admin@hostname>
```

5.6.35.8 config slot <1/2> interface <1/20> laserForcedOn

This command is used to force the Tx laser to be on all the time.

```
admin@hostname>config slot 1 interface 11 laserForcedOn enable

Laser forced on set to 'enabled'.

admin@hostname>
```

5.6.35.9 config slot <1/2> interface <1/20> loopback

This command is used to set loopback on a certain port. Different loopback options are available for different kind of ports. Use ? to get info on available options in CLI.

```
admin@hostname>config slot 1 interface 11 loopback outloop

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Loopback set to 'outloop'.

admin@hostname>
```

5.6.35.10 config slot <1/2> interface <1/20> esnrThreshold

This command is used to set the eSNR (electrical signal to noise ratio) threshold on transponders and muxponders.

There is a function in the SW that will check that the eSNR is over a certain level before it starts to run traffic. You can trigger a new eSNR negotiation by setting the adminStatus to down and then up (traffic interrupting), or by manually adjusting the eSNR threshold.

```
admin@DCP-2-31>config slot 2 interface 1 esnrThreshold enable

default           - Configure eSNR threshold to 19.0 dB with 10 retries.
<eSNR threshold>  - The minimum eSNR required for the RX bringup to be deemed to be of
acceptable quality in dB.
                    This setting is used across all lanes of the same interface bundle.
                    Each interface bundle can have unique eSNR threshold setting.
<retry>           - The maximum number of RX restarts with eSNR readings below eSNR
threshold during RX bringup.
                    Each restart takes approximately 1 second.
                    Once the maximum number is exceeded, the RX gives up on restarting.
                    Maximum of 255. 0 means infinite retries. This setting is used across
                    all lanes of the ASIC.

Description:
This command configures eSNR threshold and retry value for interface.
Note that the minimum eSNR required for the RX tear-down is set to 1.0 dB lower than
eSNR threshold setting.

admin@DCP-2-31>config slot 2 interface 1 esnrThreshold enable 20 11

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): y

eSNR threshold is set to 20.0 dB with 11 retries.
```

5.6.35.11 config slot <1/2> interface <1/20> transceiver frequency

This command is used to configure the frequency for ports with tunable transceivers. Frequency setting is available on tunable coherent DWDM transceivers. Use ? to get info on available options in CLI.

```
admin@hostname>config slot 2 interface 5 transceiver frequency

191.30000 191.35000 191.40000 191.45000 191.50000 191.55000 191.60000 191.65000
191.70000 191.75000 191.80000 191.85000
191.90000 191.95000 192.00000 192.05000 192.10000 192.15000 192.20000 192.25000
192.30000 192.35000 192.40000 192.45000
192.50000 192.55000 192.60000 192.65000 192.70000 192.75000 192.80000 192.85000
192.90000 192.95000 193.00000 193.05000
193.10000 193.15000 193.20000 193.25000 193.30000 193.35000 193.40000 193.45000
193.50000 193.55000 193.60000 193.65000
193.70000 193.75000 193.80000 193.85000 193.90000 193.95000 194.00000 194.05000
194.10000 194.15000 194.20000 194.25000
194.30000 194.35000 194.40000 194.45000 194.50000 194.55000 194.60000 194.65000
194.70000 194.75000 194.80000 194.85000
194.90000 194.95000 195.00000 195.05000 195.10000 195.15000 195.20000 195.25000
195.30000 195.35000 195.40000 195.45000
195.50000 195.55000 195.60000 195.65000 195.70000 195.75000 195.80000 195.85000
195.90000 195.95000 196.00000 196.05000
196.10000

admin@hostname>config slot 2 interface 5 transceiver frequency 194.50000

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Frequency set to '194.50000' THz.

admin@hostname>
```

5.6.35.12 config slot <1/2> interface <interface> pm <time interval>

This command is used to configure different pm attributes on specific interface ports. It is possible to configure adminStatus, rxBBEThreshold, rxESThreshold, rxSESThreshold and rxUASThreshold. Two different time intervals can be selected, 15min and 24h.

```
admin@DCP211>config slot 1 interface 1 pm 24h
pmAlarm        rxBBEThreshold rxESThreshold  rxSESThreshold rxUASThreshold
admin@DCP211>config slot 1 interface 1 pm 24h pmAlarm enable

24 hours PM alarms have been enabled for interface 1.

admin@DCP211>
```

If the threshold is set to 0 the alarm will be deactivated.

5.6.35.13 config slot <1/2> interface <1/20> transceiver gridSpacing

This command is used to configure the grid spacing. The grid spacing will specify what set of frequencies that are possible to configure. Grid spacing can be set to 6.25GHz or 50GHz. Use ? to get info on available options in CLI.

```
admin@hostname>config slot 1 interface 2 transceiver gridSpacing
50   6.25
admin@hostname>config slot 1 interface 2 transceiver gridSpacing 6.25

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Grid spacing set to 6.25GHz.

admin@hostname>
```

Note that the wanted frequency might change when gridspacing is changed.

5.6.35.14 config slot <1/2> interface <1/20> transceiver pulseShaping

This command is used to configure the pulse shaping for coherent QSFP-DD port. The pulse shaping parameter will determine the spectral shape of the signal and it will affect the bandwidth, roll-off factor and output power. It is possible to set the parameter “Pulse shaping” to enable or disable. Default is enable.

```
admin@hostname>config slot 2 interface 5 transceiver pulseShaping
disable enable

admin@hostname>config slot 2 interface 5 transceiver pulseShaping disable

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): Yes

PulseShaping set to 'disabled'.

admin@hostname>
```

5.6.35.15 config slot <1/2> interface <1/20> transceiver txOutputPower

This command is used to configure the output power for coherent QSFP-DD port. The wanted power level in unit dBm should be entered. Use ? to check the settable range for the transceiver in use.

```
admin@hostname>config slot 1 interface 2 transceiver txOutputPower -1

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Tx power set to '-1.0' [dBm].

admin@hostname>
```

5.6.35.16 config slot <1/2> interface <1/20> transceiver app

This command is used to configure a specific application code for a coherent QSFP-DD port. The app number should be entered. Use ? or tab to check the settable values for the transceiver in use.

```
admin@hostname>config slot 1 interface 2 transceiver app 2

  App  Payload Rate  Host Format                Media Format             FEC    Modulation  Media Code  Host
Code

  ---  ------------  -------------------------  -----------------------  -----  ----------  ----------  --------
-

  2    400G          100GAUI-2 C2M (Annex 135G)  ZR400-OFEC-16QAM         OFEC   DP-16QAM    46          D

  3    300G          100GAUI-2 C2M (Annex 135G)  ZR300-OFEC-8QAM          OFEC   DP-8QAM     47          D

  4    200G          100GAUI-2 C2M (Annex 135G)  ZR200-OFEC-QPSK          OFEC   DP-QPSK     48          D

  5    100G          100GAUI-2 C2M (Annex 135G)  ZR100-OFEC-QPSK          OFEC   DP-QPSK     49          D

  6    100G          100GAUI-2 C2M (Annex 135G)  100GBASE-ZR (Clause 154)  scFEC  DP-QPSK     44          D

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

App '2' is selected

admin@hostname>
```

5.6.35.17 config slot <1/2> interface <1/20> transceiver prbs

This command is used to start and stop a PRBS (Psuedo Random Bit Sequence) test that will start on a coherent QSFP-DD port. Two arguments are possible:

- start <time>
  This command will start the PRBS measurement.
  The measurement will continue until the stop command is sent or until a given <time> has elapsed. The time argument is optional. It defines the measurement time in minutes.
- stop
  This command will stop the PRBS measurement.

```
admin@hostname>config slot 1 interface 2 transceiver prbs start 2

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

PRBS test started.

admin@hostname>config slot 1 interface 2 transceiver prbs stop

PRBS test stopped.

Status            : stopped
Pattern           : PRBS31
Errored Bit Count : 15
Total Bit Count   : 15
Bit Error Rate    : 1.00e+00
Elapsed time      : 0 days, 0 hours, 0 minutes, 45 seconds

admin@hostname>
```

5.6.35.18 config slot <1/2> interface <1/20> transceiver useLosOverride

This command is used to open up for manual settings of the loss of signal (LOS) threshold for the line QSFP-DD.

```
admin@DCP-2-195>config slot 1 interface 5 transceiver

frequency      losThreshold   pulseShaping   useLosOverride

admin@DCP-2-195>config slot 1 interface 5 transceiver useLosOverride

disable enable

admin@DCP-2-195>config slot 1 interface 5 transceiver useLosOverride enable

This command can be service interrupting.

Are you sure you want to continue? (Yes/NO): y

Use LOS override set to 'enabled'.
```

5.6.35.19 config slot <1/2> interface <1/20> transceiver losThreshold

This command is used to set a manual value for the loss of signal (LOS) threshold for the line QSFP-DD.

```
admin@DCP-2-195>config slot 1 interface 5 transceiver losThreshold

<losThreshold>  - The wanted losThreshold for interface transceiver.

Description:

This command configures losThreshold for QSFP-DD transceiver.

admin@DCP-2-195>config slot 1 interface 5 transceiver losThreshold -99

Error: Input parameter <losThreshold> is not within range (-40.0 to -15.0 [dBm]).

admin@DCP-2-195>config slot 1 interface 5 transceiver losThreshold -40

LosThreshold set to '-40.0' [dBm].
```

5.6.35.20 config slot <1/2> interface <1/20> transceiver rxPowerAlarms

This group of alarms are used to configure input power alarms. There is one command to enable the input power alarms and then one setting for the low input power alarm threshold and one for the high input power alarm threshold.

```
admin@hostname>config slot 2 interface 2 transceiver rxPowerAlarms

highRxThreshold        - Configure interface transceiver high input power alarm
threshold.
lowRxThreshold         - Configure interface transceiver low input power alarm
threshold.
rxPowerAlarmThreshold  - Configure interface transceiver use configured threshold for
input power.
```

The rxPowerAlarmThreshold can be set to enable or disable. Enable means that alarms can be triggered if the configured thresholds are exceeded.

```
admin@hostname>config slot 2 interface 2 transceiver rxPowerAlarms rxPowerAlarmThreshold

disable  - Disables use configured threshold for input power.
enable   - Enables use configured threshold for input power.

admin@hostname>config slot 2 interface 2 transceiver rxPowerAlarms rxPowerAlarmThreshold
enable

Configured threshold input power set to 'enabled'.
```

The highRxThreshold parameter can be configured to specify the power level for high input power alarms.

```
admin@hostname>config slot 2 interface 2 transceiver rxPowerAlarms highRxThreshold 3

HighRxThreshold set to '3.0' [dBm].
```

The lowRxThreshold parameter can be configured to specify the power level for low input power alarms.

```
admin@hostname>config slot 2 interface 2 transceiver rxPowerAlarms lowRxThreshold -22

LowRxThreshold set to '-22.0' [dBm].
```

5.6.35.21 config slot <1/2> interface <1/20> transceiver cdSearchRange

On some coherent transceivers it is possible to configure the range for the chromatic dispersion. The parameter on the transceiver for this is the cdSearchRange. Inside the coherent transceivers there is a DSP (digital signal processor) that will compensate for chromatic dispersion. The compensation can be done within the min and the max values specified for the cdSearchRange. The difference between min and max value must be more than 1000ps/nm.

Note that the chromatic compensation value in the DSP should have the opposite sign as the chromatic dispersion on the fiber. In standard G.652 fiber the chromatic dispersion normally has a positive value. In this case the min value of the cdSearchRange must be set to a greater value than the fiber dispersion, but with a negative sign.

Here is an CLI example for TQD011-TUNC-SO.

```
admin@DCP213>config slot 2 interface 11 transceiver cdSearchRange

<CD Min> <CD Max>  - Chromatic Dispersion High Search Range[ps/nm].

Description:
Configure interface transceiver Chromatic Dispersion Range[ps/nm].
The minimum range between CD Max to CD min should be >= +1000ps/nm.
The maximum value for <CD Max> is +1000ps/nm.
Setting both to zero will result in default values for both.

Current <CD Min> is -77000
Current <CD Max> is 1000

admin@DCP213>config slot 2 interface 11 transceiver cdSearchRange -77100 900

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

CD Min set to '-77100'[ps/nm].

CD Max set to '900'[ps/nm].
```

5.6.36 config slot < 1/2 > interface edfa1

This command is used to configure the adminstatus, description, gain and losAlarm on the edfa interface.

```
admin@dcpf-189>config slot 1 interface edfa1

adminStatus  - Configure edfa1 admin status.
description  - Configure interface description.
gain         - Set EDFA gain value.
losAlarm     - Configure edfa1 LOS alarm.
```

5.6.36.1 config slot <1/2> interface edfa1 adminStatus

This command is used to configure the adminstatus on the edfa interface.

```
admin@dcpf-189>config slot 1 interface edfa1 adminStatus

down  - Configure edfa1 admin status 'down'.
up    - Configure edfa1 admin status 'up'.

admin@dcpf-189>config slot 1 interface edfa1 adminStatus
```

5.6.36.2 config slot <1/2> interface edfa1 description

This command is used to configure the description on the edfa interface.

```
admin@dcpf-189>config slot 1 interface edfa1 description

<description>  - Interface description text, max 128 characters.
                 Use double quotation marks (") for a description text containing space
characters.
                 Use two double quotation marks ("") to clear description text.
                 Valid characters are A-Z, a-z, 0-9, [blank] and -_,.*$/()+=<>|@&

admin@dcpf-189>config slot 1 interface edfa1 description
```

5.6.36.3 config slot <1/2> interface edfa1 gain

This command is used to configure the gain on the edfa interface.

Gain range is 20.0 to 28.0 dB

```
admin@dcpf-189>config slot 1 interface edfa1 gain

<gain>  - The wanted EDFA gain.

Description:
This command set the wanted EDFA gain.

admin@dcpf-189>config slot 1 interface edfa1 gain
```

5.6.36.4 config slot <1/2> interface edfa1 losAlarm

This command is used to configure the losAlarm on the edfa interface.

```
admin@dcpf-189>config slot 1 interface edfa1 losAlarm

disable  - Configure edfa1 LOS alarm 'disable'.
enable   - Configure edfa1 LOS alarm 'enable'.

admin@dcpf-189>config slot 1 interface edfa1 losAlarm
```

5.6.37 config slot < 1/2 > och och-1/x/<channel id> (for R22)

This command configures the optical channels defaultAttenuation, description, portmode and wantedoutputpower for R22.

```
admin@dcpf-189>config slot 1 och och-1/1/9140

description        - Configure interface description.
portMode           - Configure port mode.
wantedOutputPower  - Configure the wanted output power for the channel.
```

5.6.37.1 config slot <1/2> och och-1/x/<channel id> description

This command configures the optical channels description.

```
admin@dcpf-189>config slot 1 och och-1/1/9140 description

<description>  - Interface description text, max 128 characters.
                 Use double quotation marks (") for a description text containing space
characters.
                 Use two double quotation marks ("") to clear description text.
                 Valid characters are A-Z, a-z, 0-9, [blank] and -_,.*$/()+=<>|@&
```

5.6.37.2 config slot <1/2> och och-1/x/<channel id> portMode

This command configures the optical channels portmode.

```
admin@dcpf-189>config slot 1 och och-1/1/9140 portMode

edfa     - The channel is connected to the edfa port.
express  - The channel is connected to the express port.
off      - The channel is disabled.

Description:
This command configures the wanted usage of a specific channel.
```

5.6.37.3 config slot <1/2> och och-1/x/<channel id> wantedOutputPower

This command configures the optical channels wantedoutputpower.

```
admin@dcpf-189>config slot 1 och och-1/1/9140 wantedOutputPower

<power>  - The wanted output power for the channel.

Description:
This command is used to set a wanted output power for a specific channel.
```

5.6.38 config slot < 1/2 > och edfa-rx defaultAttenuation

This command sets the default attenuation on all channels in dB.

```
admin@dcpf-189>config slot 1 och edfa-rx defaultAttenuation

<value>  - The default attenuation value range [0.0 to 15.0 dB]

Description:
This command sets the default attenuation on all channels in dB.
```

5.6.39 config slot < 1/2 > och express-rx defaultAttenuation

This command sets the default attenuation on all channels in dB.

```
admin@dcpf-189>config slot 1 och express-rx defaultAttenuation

<value>  - The default attenuation value range [0.0 to 15.0 dB]

Description:
This command sets the default attenuation on all channels in dB.
```

5.6.40 config slot < 1/2 > och och-1/x/<edfa/eq>/<channel id> (for DE22)

This command configures the optical channels defaultAttenuation, description, portMode and wantedoutputPower for DE22.

```
admin@dcpf-189>config slot 1 och och-1/1/edfa/9140

defaultAttenuation  - Configure default attenuation.
description         - Configure och channel description
portMode            - Configure port mode.
wantedOutputPower   - Configure the wanted output power for the channel.
```

5.6.40.1 config slot < 1/2 > och och-1/x/<edfa/eq>/<channel id> defaultAttenuation

This command configures the default attenuation per channel in the wavelength blocker.

```
admin@dcpf-189>config slot 1 och och-1/1/edfa/9140 defaultAttenuation

<value>  - The default attenuation value range [0.0 to 15.0 dB]
```

5.6.40.2 config slot < 1/2 > och och-1/x/<edfa/eq>/<channel id> description

This command configures the optical channels description.

```
admin@dcpf-189>config slot 1 och och-1/1/edfa/9140 description

<description>  - Interface description text, max 128 characters.
                 Use double quotation marks (") for a description text containing space
characters.
                 Use two double quotation marks ("") to clear description text.
                 Valid characters are A-Z, a-z, 0-9, [blank] and -_,.*$/()+=<>|@&
```

5.6.40.3 config slot < 1/2 > och och-1/x/<edfa/eq>/<channel id> portMode

This command configures the optical channels portMode.

```
admin@dcpf-189>config slot 1 och och-1/1/edfa/9140 portMode

off   - The channel is disabled.
on    - The channel is enabled.

Description:
This command configures the wanted usage of a specific channel.
```

5.6.40.4 config slot <1/2> och <channel id> wantedOutputPower

This command configures the optical channels wantedoutputpower.

```
admin@dcpf-189>config slot 1 och och-1/1/edfa/9140 wantedOutputPower

<power>  - The wanted output power for the channel.

Description:
This command is used to set a wanted output power for a specific channel.
```

5.6.41 config slot < 1/2 > och maxChannels (for R22)

This command sets the number of channels that will be used for the optical power channel plan for the EDFA's. When reducing the max amount of channels you need to first configure all unwanted channels to portmode off. This command is valid for R22, not for DE22.

```
admin@dcpf-189>config slot 1 och maxChannels

<channels>  - Maximum number of channels allowed.

Description:
This command sets the number of channels that will be used for the optical power
channel plan for the EDFA's.

admin@dcpf-189>config slot 1 och maxChannels
```

```
admin@dcpf-189>config slot 1 och maxChannels 40

This command will set wantedOutputPower to '4.0' [dBm] on all optical channels.
This will affect all optical channels and may cause a disturbance.
Are you sure you want to change maxChannels? (Yes/No): yes

Maximum channels set to '40'. WantedOutputPower set to '4.0' [dBm] on all
channels.

admin@dcpf-189>
```

```
admin@dcpf-189>config slot 1 och maxChannels 8

13 channels are active, active channels cannot exceed maxChannels.
Please turn channels off with "config slot x och <channel> portMode off".

admin@dcpf-189>
```

5.6.42 config < 1/2 > och och-1/x/<edfa/eq>/maxChannels <value> (for DE22)

This command sets the number of channels that will be used for the optical power channel plan for the EDFA's. When reducing the max amount of channels you need to first configure all unwanted channels to portmode off. This command is valid for DE22, not for R22.

```
admin@dcpf-189>config slot 1 och och-1/1/eq/maxChannels

<channels>  - Maximum number of channels allowed.

Description:
This command sets the number of channels that will be used for the optical power
channel plan for the EDFA's.
40
```

```
admin@dcpf-189>config slot 1 och och-1/1/eq/maxChannels 40

This command will set wantedOutputPower to '4.0' [dBm] on all optical channels.
This will affect all optical channels and may cause a disturbance.
Are you sure you want to change maxChannels? (Yes/No): yes

Maximum channels set to '40'. WantedOutputPower set to '4.0' [dBm] on all
channels.
```

```
admin@dcpf-189>config slot 1 och och-1/1/eq/maxChannels 8

13 channels are active, active channels cannot exceed maxChannels.
Please turn channels off with "config slot x och <channel> portMode off".
```

The command to turn off channels in the help text above is wrong. Please use:
config slot < 1/2 > och och-1/x/<edfa/eq>/<channel id> portMode off

5.6.43 config slot 1 ocm ocm-rx monitorPortOffset

This command configures the power offset in dB that is added to the power measured by the OCM on external port OCM. Configuring this value to a correct value will make the command “show slot x ocm ocm-rx” show more accurate values.

```
admin@dcpf-189>config slot 1 ocm ocm-rx monitorPortOffset

<offset>  - The wanted external OCM port power offset.

Description:
This command configures the power offset in dB that is added to the power
measured by the OCM on external port OCM.
Configuring this value to a correct value will make the command “show slot x ocm
ocm-rx” show more accurate values.

admin@dcpf-189>config slot 1 ocm ocm-rx monitorPortOffset
```

5.6.44 config slot < 1/2 > interface <interface_number> otdr start

This command starts a OTDR measurement on the interface. Only interface_number=2 is possible in this release.

Refl No : Reflection number.
Distance: Distance to the reflection.
Ghost : Indicates if the reflection is likely to be a ghost reflection.

```
admin@dcpf-189>config slot 1 interface 2 otdr start

OTDR measurement in progress ...

Date    : 2021-05-31
Time    : 19:08:12
OSC RTT : 83.2 [km]

Refl No  Distance  Ghost
           [m]
-------  --------  -----
1           10112  No
2           62678  No
3           83222  No
```

5.6.45 config slot < 1/2 > interface <interface_number> otdr refpoint <series no>

This command will set one of the earlier OTDR measurement series as a reference point series. This series is persistent and can be used to compare later OTDR measurements against a known reference point. Only interface_number=2 is possible in this release.

```
admin@dcpf-189>config slot 1 interface 2 otdr refpoint 1

OTDR refpoint set to series 1.
```

5.6.46 config slot < 1/2 > transponder <transponder number> service

This command will set service configuration for a transponder. Note that different transponders will have different options for service configurations. Use ? to see which service configurations that are available in CLI.

Example from DCP-1610.

```
admin@hostname>config slot 1 transponder 6 service

1GbE-1GbE      1GbE-OTU2Enc   8GFC-8GFC      8GFC-OTU2      8GFC-OTU2Enc
STM64-STM64    STM64-OTU2     STM64-OTU2Enc
10GbE-10GbE    10GbE-OTU2e    10GbE-OTU2eEnc 16GFC-16GFC    16GFC-OTU2xEnc
40GbE-OTU2e    40GbE-OTU2eEnc 40GbE-40GbE
OTU2-OTU2      OTU2-OTU2Enc   OTU2e-OTU2e    OTU2e-OTU2eEnc 1GbE-OTU2

admin@hostname>config slot 1 transponder 6 service 10GbE-OTU2e

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Error: Setting service '10GbE-OTU2e' for transponder 6 failed because the line
port is in loopback mode.

admin@hostname>
```

5.6.47 config slot < 1/2 > transponder <transponder number> service converter

This command will set service configuration for a transponder with converter. Note that different transponders will have different options for service configurations. Use ? to see which service configurations that are available in CLI.

Example from DCP-108 with QSFP28 to SFP converter.

```
admin@hostname>config slot 2 transponder 3 service converter
10GbE-10GbE     16GFC-16GFC     1GbE-1GbE       25GbE-25GbE     25GbE-25GbE-FEC
32GFC-32GFC     4GFC-4GFC       8GFC-8GFC
OC192-OC192     OTU-OTU         OTU1e-OTU1e     OTU2-OTU2       OTU2e-OTU2e
STM64-STM64

admin@hostname>config slot 2 transponder 3 service converter 10GbE-10GbE

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Transponder '3' service is set to '10GbE-10GbE'.

if-1/2/5 format is set to 10GbE.
if-1/2/6 format is set to 10GbE.

admin@hostname>
```

5.6.48 config slot < 1/2 > transponder <transponder number> llfMode

This command will define the conditions for the link loss forwarding decisions. This configuration decides what condition that will result in a Link Loss Forwarding action.
This configuration affects both local LLF(Line to Client on same board) and remote LLF(when the line

format is an OTU signal and the LLF action is transmitted to the remote transponder and affects the Client Tx on that transponder).

Example from DCP-1610.

```
admin@hostname>config slot 1 transponder 1 llfMode

default  - Configure the LLF mode to default mode(Loss of Signal + Loss of
Lock).
losOnly  - Configure the LLF mode to losOnly(Loss of Signal).

Description:
This configuration decides what condition that will result in a Link Loss
Forwarding action.
This configration affects both local LLF(Line to Client on same board) and
remote LLF(when the line format is an OTU signal and the LLF action is
transmitted to the remote transponder and affects the Client Tx on that
transponder).

default - Requires both input signal and lock to activate the remote output
signal.
losOnly - Requires only input signal to active the remote output signal.

admin@hostname>config slot 1 transponder 1 llfMode losOnly
Transponder '1' LLF mode is set to 'losOnly'.

admin@hostname>
```

5.6.49 config slot < 1/2 > transponder <transponder number> encryption

This command will enable or disable encryption for a transponder. Note that not all transponders support encryption. Only the crypto user can configure encryption.

Example from DCP-1610

```
crypto@smartoptics-dcp>config slot 1 transponder 1 crypto enable

Encryption enabled for slot 1 transponder 1.

crypto@smartoptics-dcp>
```

5.6.50 config slot < 1/2 > muxponder trafficMode <traffic configuration>

This command will set traffic configuration for a muxponder. Use ? to see which service configurations that are available in CLI.

Example from DCP-404

```
admin@hostname>config slot 2 muxponder trafficMode

mux:4x100G-400G mux:3x100G-300G mux:2x100G-200G mux:1x100G-100G

admin@hostname>config slot 2 muxponder trafficMode mux:4x100G-400G

This command can be service interrupting.
Are you sure you want to continue? (Yes/NO): yes

Muxponder traffic configuration set to 'mux:4x100G-400G'.

admin@hostname>
```

5.6.51 config snmp

```
admin@slotB>config snmp
community        - Configure SNMP community.
syscontact       - Configure SNMP syscontact.
syslocation      - Configure SNMP syslocation.
sysname          - Configure SNMP sysname.
testtrap         - Send an SNMP trap for test purposes.
timeMode         - Configure whether UTC+00:00 or local time zone is used in
SNMP DateAndTime.
trapdestination  - Configure an SNMP trapdestination.
v2c              - Configure SNMPv2c parameters.
v3               - Configure SNMPv3 parameters.
```

5.6.51.1 config snmp community

This command changes the SNMP community string.

```
root@DCP2-98>config snmp community

<community>  - SNMP community string, max 32 characters. String can not be empty
and blank character is not allowed.
               Valid characters are A-Z, a-z, 0-9 and +@#%_!:,.;

root@DCP2-98>config snmp community public
```

5.6.51.2 config snmp syscontact/syslocation/sysname

These commands sets the corresponding OIDs in the MIB-II.

```
admin@DCP-19>config snmp syscontact
<syscontact>  - New syscontact
```

```
admin@DCP-19>config snmp syslocation
<syslocation>  - New syslocation
```

```
admin@DCP-19>config snmp sysname
<sysname>  - New sysname
```

5.6.51.3 config snmp trapdestination add

This command configures the system to send traps to a management station.

```
admin@hostname>config snmp trapdestination add

<version>            - New trap destination for SNMP: v2c or v3.
<host IPv4 address>  - New trap destination host IPv4 address.
<community/user>     - New trap destination community for SNMP v2c or user for SNMP v3.

admin@hostname>config snmp trapdestination add v2c 10.10.132.27 public

Trap destination 'v2c 10.10.132.27 public' added.
```

5.6.51.4 config snmp trapdestination delete

This command removes the management station to which the SNMP traps should be sent.

```
admin@DCP-19>config snmp trapdestination delete
<number>  - Trap destination number to be deleted from list (1-10)
```

5.6.51.5 config snmp v3 user add

This command creates a new user. Several options can be selected. A wizard with a number of questions will be started when a new SNMPv3 user is added. Three options for authentication and privacy can be selected:

- noAuthNoPriv = No authentication or privacy will be configured
- authNoPriv = Authentication will be configured, but not privacy
- authPriv = Both authentication and privacy will be configured

```
admin@slotB>config snmp v3 user add

Adding SNMPv3 user.

Username: snmpTest1

Method (noAuthNoPriv, authNoPriv or authPriv): authPriv
Privacy protocol (DES or AES): AES
Privacy passphrase:
Error: Privacy passphrase must be between 12 and 32 characters long.
Privacy passphrase:

Authentication protocol (SHA or MD5): MD5
Authentication passphrase:
Confirm authentication passphrase:

SNMPv3 user 'snmpTest1' added.
```

5.6.51.6 config snmp v3 user delete

This command deletes a user. Start to run the show command to see which index the required user has.

```
admin@slotB>show snmp v3 users

SNMPv3 users:
  No.  User name  Security level  Authentication protocol  Privacy protocol
  ---  ---------  --------------  -----------------------  ----------------
  1    snmpTest1  noAuthNoPriv    n/a                      n/a

admin@slotB>config snmp v3 user delete 1

SNMPv3 user #1 deleted.
```

5.6.51.7 config snmp v3 enable

This command will enable SNMPv3.

```
admin@slotB>config snmp v3 enable

SNMPv3 enabled.
```

5.6.52 config syslog remote

```
dcp_cli> config syslog remote
access           - Configure sending access log to remote syslog servers.
adminStatus      - Configure remote syslog server admin status.
alarm            - Configure sending alarm log to remote syslog servers.
config           - Configure sending configuration log to remote syslog servers.
primaryServer    - Configure remote primary syslog server.
secondaryServer  - Configure remote secondary syslog server.
dcp_cli>
```

5.6.52.1 config syslog remote access enable/disable

This command is used to enable/disable sending access log system messages to remote syslog server.

```
dcp_cli>config syslog remote access enable

Enabled sending access log to remote syslog server.

admin@hostname>config syslog remote access disable

Disabled sending access log to remote syslog server.

dcp_cli>
```

5.6.52.2 config syslog remote adminStatus up/down

This command is used to enable/disable sending system messages to remote syslog server.

```
dcp_cli>config syslog remote adminStatus up
Remote syslog server admin status set to up.
dcp_cli>config syslog remote adminStatus down
Remote syslog server admin status set to down.
dcp_cli>
```

5.6.52.3 config syslog remote alarm enable/disable

This command is used to enable/disable sending alarm log system messages to remote syslog server.

```
dcp_cli>config syslog remote alarm enable
Enabled sending alarm log to remote syslog server.
dcp_cli>config syslog remote alarm disable
Disabled sending alarm log to remote syslog server.
dcp_cli>
```

5.6.52.4 config syslog remote config enable/disable

This command is used to enable/disable sending config log system messages to remote syslog server.

```
dcp_cli>config syslog remote config enable
Enabled sending configuration log to remote syslog server.
dcp_cli>config syslog remote config disable
Disabled sending configuration log to remote syslog server.
dcp_cli>
```

5.6.52.5 config syslog remote primaryServer address <address>

This command is used to configure the IP address of the primary syslog server.

```
dcp_cli> config syslog remote primaryServer address 10.10.11.22
Remote primary syslog server address set to '10.10.11.22'.
dcp_cli>
```

5.6.52.6 config syslog remote primaryServer port <port>

This command is used to configure the remote syslog port number for the primary server.

```
dcp_cli>config syslog remote primaryServer port 514
Remote primary syslog server port set to '514'.
dcp_cli>
```

5.6.52.7 config syslog remote primaryServer protocol <protocol>

This command is used to configure the remote syslog network protocol for the primary server.

```
admin@L8-109-B-D1>config syslog remote primaryServer protocol
tcp udp
admin@L8-109-B-D1>config syslog remote primaryServer protocol udp
Primary remote syslog server network protocol set to udp.
```

This command is used to set enable or disable the root access for the support root user account.

5.6.52.8 config syslog remote hostIdentification

This command is used to configure whether the source location should be presented by hostname or IP address. .

```
admin@Demo-DCP-M-109>config syslog remote hostIdentification


hostname   - Syslog uses hostname in messages sent to the remote syslog server.

ipAddress  - Syslog uses IP address in the messages sent to the remote syslog
server.


Description:

This configuration controls whether the source location is presented

by hostname or IP address when sending syslog messages to the remote server.


admin@Demo-DCP-M-109>config syslog remote hostIdentification hostname


Syslog host identification changed to 'hostname'.
```

5.6.53 config system rootaccess

The DCP platform got a root user account that can be used by support to debug issues with the system. By default this account is only enabled on the console port. This account can also be fully disabled or fully enabled by the user. It is recommended that the customer makes an active decision to decide what level of access the root user should have.
Possible settings:

- Disabled – The root account is disabled.
- Enabled – The root account is open over ssh and console.
- enableConsole – The root account is only open on console port.

```
rescueCLI->config system rootaccess enableConsole

rootaccess set to 'enableConsole'.
```

5.6.54 config techlog webserver

This command is used to enable or disable the web server on port 80(HTTP) used to fetch a techlog.

```
admin@dcpf-189>config techlog webserver

disable  - disable techlog webserver.
enable   - enable techlog webserver.

Description:
Command to enable or disable the web server on port 80(HTTP) used to fetch a
techlog.

admin@dcpf-189>config techlog webserver
```

5.6.55 config timezone

This command is used to configure the timezone.

```
admin@DCP-19>config timezone
Available timezones:
  Africa/Cairo  America/Anchorage America/Caracas
 America/Chicago America/Denver America/Los_Angeles America/New_York America/Sao_Paulo
  Asia/Dhaka Asia/Dubai Asia/Hong_Kong Asia/Karachi
 Asia/Tokyo  Australia/Adelaide Australia/Brisbane Australia/Darwin
 Australia/Sydney CET CST6CDT EET EST
 EST5EDT EST5EDT Etc/GMT Etc/GMT+0 Etc/GMT+1
 Etc/GMT+10 Etc/GMT+11 Etc/GMT+12 Etc/GMT+2 Etc/GMT+3
 Etc/GMT+4 Etc/GMT+5 Etc/GMT+6 Etc/GMT+7 Etc/GMT+8
 Etc/GMT+9 Etc/GMT-0 Etc/GMT-1 Etc/GMT-10 Etc/GMT-11
 Etc/GMT-12 Etc/GMT-13 Etc/GMT-14 Etc/GMT-2 Etc/GMT-3
 Etc/GMT-4 Etc/GMT-5 Etc/GMT-6 Etc/GMT-7 Etc/GMT-8
 Etc/GMT-9 Etc/GMT0 Etc/UCT Etc/UTC Etc/Universal
 EST5EDT Europe/London Europe/Moscow Europe/Paris GB
 Greenwich HST MET MST MST7MDT
 NZ NZ-CHAT PRC PST8PDT PST8PDT
 Pacific/Honolulu Pacific/Noumea ROC ROK W-SU
 WET Zulu
Time zone:  - Pick a Name from time zone list
admin@DCP-19>config timezone
```

5.6.56 config topology internal <port1> <port2>

This command is used to configured internal topology between two ports.

The command format: config topology internal <port1> <port2>

```
admin@dcpf-189> config topology internal if-1/1/2-rx ppm-1/1/2/osc-tx

Internal topology created
```

5.6.57 config user

This command can be used to enable a user or to change the password of the admin user.

Valid length is between 3 and 100 characters.

Allowed characters include uppercase and lowercase letters (A-Z, a-z), digits (0-9), and special characters! @ # $ % ^ & * ( ) _ + - = { } [ ] : ; " ' < > , . ? / \ | ~ `.

Spaces are not allowed.

```
admin@COL-R2-ROADM-202-SC28>config user

chpasswd  - Change password for admin user.

netconf   - Configure user netconf credentials.

operator  - Configure operator user status.

readonly  - Configure readonly user status.

sftpuser  - Configure sftpuser user status.

admin@COL-R2-ROADM-202-SC28>config user readonly enable

Enable user for chassis-0
Enable user for chassis-1
Enable user for chassis-2
Enable user for chassis-3

Changing password for 'readonly'.
Enter new password:
Confirm new password:

Updated password for chassis-0.

Updated password for chassis-1.

Updated password for chassis-2.

Updated password for chassis-3.

readonly user account set to 'enabled'
```

5.7 Clear commands

DCP-2

```
admin@Stockholm-97>clear
aaa         - Clear AAA configuration.
alarm       - Clear alarm configuration.
interface   - Clear interface configuration.
network     - Clear network configuration.
ntp         - Clear NTP configuration.
slot        - Clear slot configuration.
snmp        - Clear SNMP configuration.
syslog      - Clear syslog configuration.
topology    - Clear topology configuration.
```

DCP-M

```
admin@L8-99>clear
aaa         - Clear AAA configuration.
alarm       - Clear alarm configuration.
interface   - Clear interface configuration.
network     - Clear network configuration.
ntp         - Clear NTP configuration.
snmp        - Clear SNMP configuration.
syslog      - Clear syslog configuration.
```

DCP-R

```
admin@Uppsala-110-A-D1>clear
aaa         - Clear AAA configuration.
alarm       - Clear alarm configuration.
interface   - Clear interface configuration.
network     - Clear network configuration.
node        - Clear node.
ntp         - Clear NTP configuration.
snmp        - Clear SNMP configuration.
syslog      - Clear syslog configuration.
```

5.7.1 clear aaa radius primaryServer address

This command clears the configured RADIUS primaryserver address.

```
admin@dcpf-189>clear aaa tacplus primaryServer address
Primary RADIUS server address cleared.
```

5.7.2 clear aaa radius primaryServer key

This command clears the configured RADIUS primaryserver key.

```
admin@dcpf-189>clear aaa tacplus primaryServer key
Primary RADIUS server key cleared.
```

5.7.3 clear aaa radius secondaryServer address

This command clears the configured RADIUS secondaryserver address.

```
admin@dcpf-189>clear aaa tacplus secondaryServer address
Secondary RADIUS server address cleared.
```

5.7.4 clear aaa radius secondaryServer key

This command clears the configured RADIUS secondaryserver key

```
admin@dcpf-189>clear aaa tacplus secondaryServer key
Secondary RADIUS server key.
```

5.7.5 clear aaa tacplus primaryServer address

This command clears the configured TACACS+ primaryserver address.

```
admin@smartoptics-dcp>clear aaa tacplus primaryServer address
Primary TACACS+ server address cleared.
```

5.7.6 clear aaa tacplus primaryServer key

This command clears the configured TACACS+ primaryserver key.

```
admin@smartoptics-dcp>clear aaa tacplus primaryServer key
Primary TACACS+ server key cleared.
```

5.7.7 clear aaa tacplus secondaryServer address

This command clears the configured TACACS+ secondaryserver address.

```
admin@smartoptics-dcp>clear aaa tacplus secondaryServer address
Secondary TACACS+ server address cleared.
```

5.7.8 clear aaa tacplus secondaryServer key

This command clears the configured TACACS+ secondaryserver key

```
admin@smartoptics-dcp>clear aaa tacplus secondaryServer key
Secondary TACACS+ server key.
```

5.7.9 clear alarm log

This command clears the alarm log.

```
admin@smartoptics-dcp>clear alarm log
Alarm log cleared.
```

5.7.10 clear cli history

This command clears the cli history.

```
admin@DCP-M40-PAM4-ER-12>clear cli history

(enter)  - Execute the command.

Description:
This command clears the history for the current user.

admin@DCP-M40-PAM4-ER-12>clear cli history

Clearing history shuts down all CLI sessions, also for other users.
Are you sure you want to continue? (Yes/NO): yes
```

5.7.11 clear interface portreset

This command is used to default set the interfaces back to idle status.

```
admin@DCP-19>clear interface <interface> portreset
<interface>  - Can be if-1/slot/interface, if-1/interface or all.
Description:
This command will deactivate the interface such that there will not be any
active alarm for it.
This command is not traffic interrupting in any way. The interface will be
automatically activated again when it detects traffic.


admin@Uppsala-110-A-D1>clear interface all portreset

All interfaces has been reset.
```

5.7.12 clear interface diagnostics

This command will clear the FEC counters on the selected interface.

```
admin@hostname>clear interface diagnostics if-1/1/19

Cleared FEC counters
```

5.7.13 clear interface if-x/x/x pm <time interval>

This command will set the PM threshold back to default values for a specific port and time interval.

```
admin@long-term-dcp404-213>clear interface
all      if-1/1/1 if-1/1/2 if-1/1/3 if-1/1/4 if-1/1/5 if-1/2/1 if-1/2/2 if-1/2/3 if-1/2/4 if-1/2/5
admin@long-term-dcp404-213>
admin@long-term-dcp404-213>clear interface if-1/2/3 pm 15min
(enter)        rxBBEThreshold rxESThreshold  rxSESThreshold rxUASThreshold
admin@long-term-dcp404-213>
admin@long-term-dcp404-213>clear interface if-1/2/3 pm 15min rxSESThreshold

15 minutes PM Rx SES threshold set to factory default value '10' for interface if-1/2/3.

admin@long-term-dcp404-213>
```

```
admin@long-term-dcp404-213>clear interface
all      if-1/1/1 if-1/1/2 if-1/1/3 if-1/1/4 if-1/1/5 if-1/2/1 if-1/2/2 if-1/2/3 if-1/2/4 if-1/2/5
admin@long-term-dcp404-213>
admin@long-term-dcp404-213>clear interface all pm 24h
(enter)        rxBBEThreshold rxESThreshold  rxSESThreshold rxUASThreshold
admin@long-term-dcp404-213>
admin@long-term-dcp404-213>clear interface all pm 24h

Cleared all 24 hours PM counters for all interfaces.

admin@long-term-dcp404-213>
```

5.7.14 clear network ipv4dns

This command is used to clear the configured DNS server IP address.

```
admin@DCP-19>clear network ipv4dns
DNS IPv4 addresses cleared.
```

5.7.15 clear network if-x/osc lldp information

This command is used to clear the lldp information on an OSC interface .

```
admin@Uppsala-110-A-D1>clear network if-2/osc lldp information
```

5.7.16 clear network tunnel

This command deletes a management tunnel between a DCP-F card and a DCP-2 chassis.

```
root@DCP-2-DCP-F-DE22-A22--193>clear network tunnel 1

Do you want to delete Management tunnel if-1/1/2 to if-1/1/eth1 (Yes/No)? y

Management tunnel deleted.

root@DCP-2-DCP-F-DE22-A22--193>
```

5.7.17 clear node members

This command will delete the node member with the highest index.

```
admin@L8-109-B-D1>clear node members

This will remove node member chassis-3.
Are you sure you want to continue? (Yes/NO): y

Node chassis-3 is removed from node.
```

5.7.18 clear node topology internal

This command will delete an internal topology connection.

```
admin@L8-109-B-D1>clear node topology internal 4

Internal topology cleared.
```

5.7.19 clear ntp primaryServer

This command is used to default set the configured NTP primary server.

```
admin@DCP-19>clear ntp primaryServer
Primary NTP Server removed.
```

5.7.20 clear ntp secondaryServer

This command is used to default set the configured NTP primary server.

```
admin@DCP-19>clear ntp secondaryServer
Secondary NTP Server removed.
```

5.7.21 clear slot < 1/2 > alarm log

This command clears the slots alarm log.

```
admin@dcpf-189>clear slot 1 alarm log
Alarm log cleared.
admin@dcpf-189>
```

5.7.22 clear slot < 1/2 > boardMissingAlarm

This command deactivates a missing board alarm for instances when modules are removed on purpose.

```
admin@dcpf-189>clear slot 1 boardMissingAlarm
boardMissingAlarm set to deactivated.
admin@dcpf-189>
```

5.7.23 clear slot < 1/2 > och portreset

This command will deactivate the channel such that there will not be any active alarm for it. This command is not traffic interrupting in any way. The channel will be automatically activated again when it detects traffic. Use 'all' as <channel_id> to reset status for all channels.

```
admin@dcpf-189>clear slot 1 och portreset 9140
Channel has been reset.
admin@dcpf-189>

admin@dcpf-189>clear slot 1 och portreset all
All channels have been reset.
admin@dcpf-189>
```

5.7.24 clear snmp syscontact

This command is used to default set the configured SNMP syscontact.

```
admin@DCP-19>clear snmp syscontact
Syscontact cleared.
```

5.7.25 clear snmp syslocation

This command is used to default set the configured SNMP community.

```
admin@DCP-19>clear snmp syslocation
Syslocaton cleared.
```

5.7.26 clear syslog alarm

This command clears all syslog alarm entries.

```
admin@smartoptics-dcp>clear syslog alarm
Alarm log cleared.
admin@smartoptics-dcp>
```

5.7.27 clear syslog config

This command clears all syslog configuration entries.

```
admin@smartoptics-dcp>clear syslog config
Configuration log cleared.
admin@smartoptics-dcp>
```

5.7.28 clear syslog remote server

This command empties the remote syslog server address.

```
admin@smartoptics-dcp>> clear syslog remote server
Remote syslog server address cleared.
admin@smartoptics-dcp>>
```

5.7.29 clear topology internal <topology_ID>

This command shall be used to delete created internal topology entries.
Use *all* as <topology_id> to clear all internal topology.

```
admin@dcpf-189> clear topology internal if-1/1/2-rx<-->ppm-1/1/2/osc-tx

Internal topology 'if-1/1/2-rx<-->ppm-1/1/2/osc-tx' is cleared
```

6 Instruction how to generate a techlog

6.1 What is a techlog?

A techlog is a function which collects all relevant logs and generates a TAR file in the system which can be provided to Smartoptics to troubleshoot DCP Systems.

This techlog contains DCP CLI captures amongst other low level software and hardware states.

6.2 How to generate a techlog

There are two ways to generating a techlog.

1. Generate a techlog and downloading it from the systems webserver
2. Generate a techlog to be uploaded with FTP, HTTP, SCP or SFTP

6.2.1 Generate a techlog and downloading it from the systems webserver

6.2.1.1 Enable the webserver

After logging in to the system, enter the command "**`config techlog webserver enable`**"

```
admin@dcpf-189>config techlog webserver enable

Techlog web server set to enable.

admin@dcpf-189>
```

6.2.1.2 Download the techlog from the system

1. Open a browser to the chassis IP-address
2. Click on the "Generate techlog" button.
3. Save the file.

6.2.1.3 Disable the webserver

The webserver can be disabled with the command "**`config techlog webserver disable`**"

```
admin@dcpf-189>config techlog webserver disable

Techlog web server set to disable.

admin@dcpf-189>
```

6.2.2 Generate a techlog to be uploaded with FTP, HTTP, SCP or SFTP

After logging in to the system, enter the command “techlog ?”

There you will find different options on how to upload the techlog depending on which protocol suits you best. It can either be FTP, HTTP, SCP or SFTP.

Here is a description of the command syntax and an FTP example:

```
root@DCP-M-50.186>techlog generate local

Creating techlog.
Please be patient. This operation may take several minutes to
finish.
Collecting data from this unit.
Data collected successful from this unit.
Techlog 'Techlog-DCP-M-50.186-
S1939DCPM0546_20240521_134255.tar.gz' created.
Techlog available in /techlog/ with the sftp user account
sftpuser.
More details by running the same command again with "?" or in
system manual.

Timer to generate for this unit : 00:02:13
Total time to generate          : 00:02:13

root@DCP-M-50.186>techlog generate local

(enter)  - Execute the command.

Description:
Generates a technical log (techlog) file for troubleshooting
purposes. The file is saved locally and
can be retrieved from the /techlog folder via an SFTP connection
using the sftpuser account.
The sftpuser account is managed with "config user sftpuser" and is
disabled by default.

root@DCP-M-50.186>
```

6.2.3 Upload techlog with SCP

Here are three examples of how to use scp for uploading a techlog.

```
admin@DCP-M-50.186>techlog generate scp://10.10.50.63/tmp/
Enter username: user
Enter password:

Creating techlog.
Please be patient. This operation may take several minutes to
finish.
Collecting data from this unit.
Data collected successful from this unit.
Techlog 'Techlog-DCP-M-50.186-
S1939DCPM0546_20240521_150653.tar.gz' created.
Techlog uploaded successful to remote server.

admin@DCP-M-50.186>techlog generate scp://user@10.10.50.63/tmp/
Enter password:

Creating techlog.
Please be patient. This operation may take several minutes to
finish.
Collecting data from this unit.
Data collected successful from this unit.
Techlog 'Techlog-DCP-M-50.186-
S1939DCPM0546_20240521_151607.tar.gz' created.
Techlog uploaded successful to remote server.

admin@DCP-M-50.186>techlog generate
scp://user:password@10.10.50.63/tmp/

Creating techlog.
Please be patient. This operation may take several minutes to
finish.
Collecting data from this unit.
Data collected successful from this unit.
Techlog 'Techlog-DCP-M-50.186-
S1939DCPM0546_20240521_151607.tar.gz' created.
Techlog uploaded successful to remote server.

admin@DCP-M-50.186>
```