



**Lightspan FX/FELT-B uplink**  
**Embedded CLI Command Guide**  
**25.12**

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## Preface

This document is providing a reference of the "Embedded" CLI commands, hereafter referred to as eCLI commands.

Please read and verify the guidelines and recommendation below, before using eCLI on a Lightspan system.

In general, it is strongly recommended to use the Access Controller (Altiplano) and NETCONF for all actions on the Lightspan node to assure that the master database maintained by the Access Controller remains at all times synchronized with the Lightspan node. Several advantages of an SDAN network will work only properly if one adheres to this process. In such context, using CLI directly on the Lightspan is in general not recommended. Although, in some situations or deployments one may prefer to still fall back to CLI: e.g. when local troubleshooting is needed, preference for a more traditional deployment without Access Controller, etc. For the latter, several CLI options are supported, each one optimized and targeted to specific cases in the variety of situations and deployments, and further explained hereafter.

A first option is to use the vCLI (virtual CLI) on Altiplano (Nokia Access Controller). A field engineer connecting remotely over SSH to this vCLI will have a very similar CLI experience compared to what would be a remote CLI connection to the Lightspan node itself. But, vCLI has the advantage that it honors Altiplano being the master of the database: vCLI is first executed in Altiplano, and when there are configuration changes this triggers via the persistent Netconf connections between Altiplano and Lightspan the appropriate Netconf RPC's to Lightspan, guaranteeing they remain synchronized. Today wireline and wireless communication infrastructure is widely available at high speeds such that even a local field engineer sitting next to a Lightspan node may have access to the vCLI in Altiplano. Otherwise, it is an option to set up an SSH session through one of the physical interfaces (e.g. LEMI) on the Lightspan node to vCLI in Altiplano.

A second option is macro-eCLI. This is an embedded CLI (eCLI). Contrary to virtual CLI (vCLI) with a CLI session terminated in Altiplano in the cloud, eCLI means the CLI session is terminated in the Lightspan node. The name "macro" in macro-eCLI reflects the higher level of abstraction in many of its commands compared to the many details in the yang model. This "macro-level" is expected sufficient for rather common CLI usage.

Altiplano supports also macro-vCLI, and it is an advantage that macro-eCLI and macro-vCLI have the same look-and-feel. But, the commands supported in macro-eCLI are only a small subset of the ones available in macro-vCLI, since its scope is limited to initial turn-up of the Lightspan node and troubleshooting of the uplink connection to Altiplano. Therefore, it is targeted to deployments strongly adhering to SDAN concepts with Altiplano master of the configurations (and either using vCLI or not using CLI at all). When in such deployments a connection failure between Altiplano and Lightspan occurs and somebody needs to go on-site to fix it, macro-eCLI is the minimum needed and would be the first choice.

In addition to the above mentioned e/vCLI options, the Lightspan Access Node does also provide an unrestricted eCLI, which is referred to as YANG eCLI. This YANG eCLI is intended for expert level engineers who are familiar with the details of the embedded YANG models and can only be used where no SDAN Access Controller is involved, or, after any configuration changes equivalent changes are executed also on Access Controller to keep it aligned with Lightspan. Using YANG eCLI with direct access on the physical, does break the SDAN paradigm where an SDAN Access Controller is managing the virtual device having the full mastership on the virtual device database. It shall be clear to the user or operator, managing the Lightspan access node via eCLI is causing conflicts and risk for misaligned between Access Node and Access Controller. Typically, the Access Controller, having the sole mastership over the Access Device (virtual) database will overwrite all changes done on the physical device database via eCLI on every synchronization from the Access Controller to the Access Device.

Furthermore, the YANG eCLI is dynamically defined based on the embedded YANG management models. Any changes in the YANG model is reflected by changes in the YANG eCLI. Hence it is not advised to build any CLI

based scripts on the YANG eCLI given the potential changes over subsequent Lightspan software releases. It shall be noted that eCLI does not guarantee any backward compatibility due to this dependencies on possible YANG model changes where standardization is not final yet.

In summary, a large flexibility of CLI options and how they are combined exists:

1. Virtual CLI (vCLI): CLI managing the virtual access device and being terminated on the Altiplano Access Controller. There are three levels of CLI, from most abstract to most detailed being: intent vCLI, Macro vCLI, YANG vCLI. For more details, revert to Altiplano Access Controller customer documentation

2. Embedded Macro CLI (Macro eCLI): CLI being terminated on physical access devices (hence the name "embedded") and for which the scope is limited using abstracted macros. The scope of the Macro eCLI is limited to basic troubleshooting, device turn-up and OAM management link recovery with the Access Controller.

3. Embedded YANG eCLI (YANG eCLI): CLI being terminated on physical access devices (hence the name "embedded") providing unlimited access to the management objects in the Lightspan Access Node. The YANG eCLI is full derived from YANG and hence is subject to changes according the YANG model changes. The YANG eCLI ONLY to be used in absence of an Access Controller like Altiplano which is holding the mastership of the configuration of Access Node, or taking additional steps in the Access Controller to remain aligned with Lightspan.

Both the Embedded Macro CLI (Macro eCLI) and the Embedded Yang eCLI (Yang eCLI) are described throughout this document.

This eCLI guide is split in next chapters:

1. Guide usage: how to use the eCLI
2. YANG Configuration commands: allow to populate config true items of a yang model
3. YANG Operational commands: allow to view state data or read only data of a yang model
4. YANG Action commands: allow to do yang actions defined in a yang model
5. Builtin Operational commands: operational commands that are not derived from a yang model
6. Builtin Configuration commands: configuration commands that are not derived from a yang model
7. Macro commands: allow to update or read items in multiple yang models (via abstract view).

The eCLI guide bases itself on the default configured settings; behaviour can be modified via confdConfig options. Most common ones are described in this manual.

The eCLI guide shows all commands which a CLI user could access; in reality a CLI user is assigned to a group which has only access to a specific set of CLI commands.

As big part of Yang eCLI is autogenerated from the very detailed yang models it is quite an extensive list of eCLI commands. Some errors in execution of these commands are possible, and correcting them may be subject to a next release and not feasible earlier.

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# 1. Guide Usage

## 1.1 CLI users

While "admin" is the default user for YANG-eCLI, "cli\_user" is the default user for MACRO-eCLI. The "cli\_user" has limited access and is capable of executing only a set of predefined macro commands. It is primarily intended for troubleshooting purposes and is available on both shelf-ne and LT nodes. Each node has its own unique set of macro commands available to the user. In systems that have a management node and multiple NEs, the "cli\_user" can connect to the management node (shelf-ne) and execute any available macro for the shelf-ne or forward the connection to an LT and execute an LT macro.

Specifically, when it comes to iHub macros, the "cli\_user" can execute the macros directly from the shelf-ne CLI environment without needing to forward the connection to iHub, as iHub does not natively support macros.

In general, default users and newly created users are common between CLI and NETCONF, that is the same user with the same password can access the system both with CLI and with NETCONF. As passwords are changed for both users, it may be quite complex to remember what the latest valid password is. And this is especially true in the typical case where NETCONF is a machine interface (e.g. Altiplano Access Controller) and CLI is a human interface and both interfaces share the same user. Therefore, it is recommended to create dedicated users who are restricted to CLI only and other dedicated users restricted to NETCONF only.

To guarantee this recommended separation between a CLI user and a NETCONF user, the administrator has the option to assign users to the following available user groups:

- "cli-only-group": Allows CLI access only and therefore excluding NETCONF.
- "netconf-only-group": Allows NETCONF access only and therefore excluding CLI.

A user shall not belong to both groups at the same time and it is not permitted, since it would prevent any type of access.

Creating new CLI users, assigning CLI users to specific user groups and changing their passwords should always be done when connected to shelf-NE. When taking into account the recommendations explained in the section "Clear separation between CLI users and NETCONF user" then creating a new user while not being connected to shelf-NE is expected to be a Netconf user and not a CLI user, and will not get access to shelf-NE when created this way. And when following these recommendations, a CLI user would get an error response when attempting to change the password when not being connected to shelf-NE.

The number of default users available at initial start-up are limited for security reasons. Initially, only one "admin" user is available for both CLI and NETCONF. In deployments where admin privileges are needed for both CLI and NETCONF, the above recommendation can be easily realized by creating a second admin user (e.g. called "admin2"), and from then onwards each one dedicated either to CLI or Netconf. Note that creating such a second admin user is not always needed. As an example, in deployments where CLI limited to macro-eCLI only is sufficient, CLI already has a dedicated default CLI user called "cli\_user" (see chapter 'Macro Commands'), leaving then the "admin" user dedicated to NETCONF.

## 1.2 eCLI access

eCLI access can be done via LEMI, CRAFT and IP interfaces.

### 1.2.1 LEMI

All systems - except Lightspan FX - have a Local Ethernet Management Interface (LEMI).

Access is open by default and is controlled by these Configuration CLI commands:

- isam-reborn(config)#system management cli transport ssh lemi enable (false|true) [true]
- isam-reborn(config)#system management lemi operator enable (false|true) [true]

IP messages on LEMI should have:

- destination IP: 192.168.1.1
- source IP: within 192.168.1.1/24
- destination port:
  - 2024 (or 22) for single NE systems
  - 940 (or 22) for shelf-NE

The system can be configured to use the standard ssh port 22 for CLI access:

- isam-reborn(config)#system management cli transport ssh use\_port\_22 true

In a system with multiple NEs, for CLI access to the different NE one needs to navigate from SHELF-NE to another NE. Any user who is connected to the management NE (shelf-NE) can redirect their connection to any other NE (LTs and IHUB), regardless of whether or not they are configured in the destination NE. Once the connection is redirected to a NE, the user will be in the command line interface (CLI) environment of that destination NE and will inherit the rights of the user groups in which they are configured in the management NE. Username and password only have to be provided when connecting to the management node (shelf-NE). This capability of Single Sign-On (SSO) is available in all types of Lightspan nodes that have multiple NEs, including FX, MF2, MF14, and SF-8M among others. Whenever a connection is forwarded, an extra SSH connection is created automatically internally. A user who has used the forward command to connect to an LT from shelf-ne (NT) should first return to shelf-ne using the "exit" command before forwarding the connection to another LT. It is not possible to forward a connection directly from one LT to another LT.

```
NT# forward cli to lt-2
```

```
admin connected from 169.254.1.253 using ssh on isam-reborn
```

```
Welcome, admin!
```

```
LT-2# exit
```

```
Exited from lt-2
```

Note1: direct CLI access to the LT NE's (using ports 924-939) and IHUB NE (using port 922) is possible under condition that on these NE's CLI access is enabled.

Note2: the 'cli transport ssh lemi enable' and 'cli transport ssh use\_port\_22' value can be persistently saved ( on single NE systems) i.e the value will then be used after a reset to default DB. Saving the data is done via below command:

```
isam-reborn# persistent-connectivity-data save
```

## 1.2.2 CRAFT

On Lightspan FX platforms, NT cards have no LEMI but a serial line called CRAFT. The serial line allows to access shelf-NE and from there, access to the other NEs is possible via CLI 'forward' command.

Access is by default open and controlled by these Configuration CLI commands:

- isam-reborn(config)#system management cli serial enable (false|true) [true]
- isam-reborn(config)#system management serial enable (false|true) [true]

## 1.2.3 IP interface

All configured YANG IP interfaces (by default 'inband' is present).

Access is closed by default and is controlled by these Configuration CLI commands:

- isam-reborn(config)#system management cli transport ssh ip\_if enable (false|true) [true]

IP messages should have:

- destination IP: one of the configured management IP address(es)
- destination port:
  - 2024 (or 22) for single NE systems
  - 940 (or 22) for shelf-NE

The system can be configured to use the standard ssh port 22 for CLI access:

- isam-reborn(config)#system management cli transport ssh use\_port\_22 true

In a system with multiple NEs, for CLI access to the different NE one needs to navigate from SHELF-NE to another NE. Any user who is connected to the management NE (shelf-NE) can redirect their connection to any other NE (LTs and IHUB), regardless of whether or not they are configured in the destination NE. Once the connection is redirected to a NE, the user will be in the command line interface (CLI) environment of that destination NE and will inherit the rights of the user groups in which they are configured in the management NE. Username and password only have to be provided when connecting to the management node (shelf-NE). This capability of Single Sign-On (SSO) is available in all types of Lightspan nodes that have multiple NEs, including FX, MF2, MF14, and SF-8M among others. Whenever a connection is forwarded, an extra SSH connection is created automatically internally. A user who has used the forward command to connect to an LT from shelf-ne (NT) should first return to shelf-ne using the "exit" command before forwarding the connection to another LT. It is not possible to forward a connection directly from one LT to another LT.

```
NT# forward cli to lt-2
admin connected from 169.254.1.253 using ssh on isam-reborn
Welcome, admin!
LT-2# exit
Exited from lt-2
```

Note1: direct CLI access to the LT NE's (using ports 924-939) and IHUB NE (using port 922) is possible under condition that on these NE's CLI access is enabled.

Note2: the 'cli transport ssh ip\_itf enable' and 'cli transport ssh use\_port\_22' value can be persistently saved ( on single NE systems) , i.e the value will then be used after a reset to default DB. Saving the data is done via below command:

```
isam-reborn# persistent-connectivity-data save
```

## 1.3 eCLI modes

The eCLI has 2 modes: operational mode and configuration mode. By default, operational mode is entered.

In operational mode, the following CLI commands are available:

1. Show command(s) to display state data of YANG models.
2. Action command(s) to execute YANG actions and/or RPCs.
3. Builtin commands. Some examples (for the complete list, see chapter 5):
  - config : to enter config mode
  - help: show description from YANG models
  - history: to set history length
  - show running-config [details]: display current configuration
  - who: show all users managing the system

Configuration mode is entered by typing "config" and is used to create/update/delete data. It is possible to take an exclusive configuration session in which case a lock is taken preventing other CLI users to update the configuration data. For example, assume a user "admin" has started an exclusive config session. Then that user will be informed about other users (e.g oper1):

```
isam-reborn# config exclusive
Entering configuration mode exclusive
Warning: uncommitted changes will be discarded on exit
Current configuration users:
oper1 ssh (cli from 192.168.220.5) on since 2022-11-15 13:24:13 terminal mode
```

When user "oper1" logs in while another admin user has exclusive access, the "oper1" user will be informed:

```
isam-reborn# config
Entering configuration mode terminal
Current configuration users:
admin ssh (cli from 192.168.200.13) on since 2022-11-15 13:23:42 exclusive mode
```

When user "oper1" tries to commit in the config mode of the terminal, the config is denied.

```
isam-reborn(config)# system ntp server tom udp address 1.1.1.1
isam-reborn(config-server-tom)# commit
Are you really sure you want to commit? [yes,NO] yes
Aborted: the configuration database is locked by session 58 admin ssh (cli from
192.168.200.13) on since 2022-11-15 13:23:42
```

To identify who is logged on:

```
isam-reborn# who
Session User      Context From      Proto  Date      Mode
63   oper1      cli   192.168.220.5  ssh    13:24:13  config-terminal
*58   admin      cli   192.168.200.13  ssh    13:23:42  operational
```

It is also possible to force logout (when authorized):

```
isam-reborn# logout
```

Possible completions:

session Logout a specific session

user Logout a user from all Netconf and CLI sessions

In configuration mode, one can use this set of CLI commands:

1. Config Command(s) to create/modify/delete data of YANG models
2. Action Command(s) to execute YANG actions and/or RPCs
3. Builtin commands. Some examples (for the complete list, see chapter 6):
  - abort: Abort configuration session without extra confirmation prompt
  - clear: Remove all configuration changes
  - commit: Commit current set of changes
  - do: Run an operational-mode command
  - end: Terminate configuration session
  - exit: Exit from current mode
  - help: Provide help information
  - no: Negate a command or set its defaults
  - show
  - configuration: Show a parameter
  - full-configuration: Show a parameter
  - history: Display CLI config mode history
  - top: Exit to top level and optionally run command

Via describe command, find the link to the YANG model in chapter 1.6:

```
isam-reborn(config)# describe system
```

Common

Source : YANG

Module : ietf-system

Namespace : urn:ietf:params:xml:ns:yang:ietf-system

Path : /systemali

Node : container

Revision : 2014-08-06

Exported agents : all

Checksum : 3c15c4ebb4181951af1e729ce26ddc2f

To access operational commands in the config mode, use the command "do":

```
isam-reborn(config)# do show alarms
```

To display what is configured:

```
isam-reborn(config)#show full-configuration [details] [<pathfilter>]
```

To display what is planned to commit:

```
isam-reborn(config)#show configuration diff [<pathfilter>]
isam-reborn(config)#show configuration [<pathfilter>]
```

To display what is configured from within operational mode:

```
isam-reborn#show running-config [[details] [[tab]
```

In both modes the eCLI provides specific actions:

- [TAB] for auto-completion of partially typed commands, but also to provide/complete key values of lists.
- "?" for command syntax (e.g display allowed ranges)
- help (enabled for Macro and Builtin commands)
- Filtering and sorting of output, this is achieved via unix like pipe "|" command
- Support of displaying the output in different formats (xml, keypath, xpath, curly braces)
- Commands to modify the output/screen (paginate, screen-length, screen-width)
- History allowing to view history of commands (and when entered).
- Alias support, line editing commands and environmental settings

## 1.4 Command line editing

Moving the cursor:

- Move the cursor back one character: Ctrl-b or Left Arrow.
- Move the cursor back one word: Esc-b or Alt-b.
- Move the cursor forward one character: Ctrl-f or Right Arrow.
- Move the cursor forward one word: Esc-f or Alt-f.
- Move the cursor to the beginning of the command line: Ctrl-a or Home.
- Move the cursor to the end of the command line: Ctrl-e or End.

Delete characters:

- Delete the character before the cursor: Ctrl-h, Delete, or Backspace
- Delete the character following the cursor: Ctrl-d
- Delete all characters from the cursor to the end of the line: Ctrl-k
- Delete the whole line: Ctrl-u or Ctrl-x
- Delete the word before the cursor: Ctrl-w, Esc-Backspace, or Alt-Backspace
- Delete the word after the cursor: Esc-d or Alt-d

Display previous commands:

- Scroll backward through the command history: Ctrl-p or Up Arrow
- Scroll forward through the command history: Ctrl-n or Down Arrow
- Search the command history in reverse order: Ctrl-r
- Show a list of previous commands: run the "show history" command

Special:

- Abort a command in oper mode: Ctrl-c
- Clear line in oper mode: Ctrl-c
- Redraw the screen: Ctrl-l
- Transpose characters: Ctrl-t
- Enter multi-line mode. This allows multi-line values to be entered when prompted for a value in the CLI. It is not available when editing a CLI command: ESC-m
- Exit configuration mode: Ctrl-z, Ctrl-c

## 1.5 eCLI environment settings

There are a number of session variables in the CLI. They are only used during the session and are not persistent. Their values are inspected using "show cli" in operational mode.

- autowizard
- complete-on-space
- display-level
- history
- idle-timeout
- ignore-leading--space
- leaf-prompting
- paginate
- prompt1 (prompt used in operational mode)
- prompt2 (prompt used in configuration mode)
- screen length
- screen width
- show-defaults
- terminal
- timestamp

Detailed description can be found in chapter 5.

Some of the above items can also be set permanently via confdConfig options or per user. But the above settings overrule them.

Environment settings do not require a commit, as they are executed when entered.

## 1.6 Create/Update/Delete configuration data

Below YANG models (presented in a tree) are used in the examples:

```
module: ietf-system
+--rw system
| +--rw dns-resolver
| | +--rw search*   inet:domain-name
| | +--rw server* [name]
| | | +--rw name          nok-typ:nokia-string-ascii64
| | | +--rw (transport)
| | |   +--rw udp-and-tcp
| | |     +--rw address   inet:ip-address
| | |     +--rw port?    inet:port-number {dns-udp-tcp-port}?
| | +--rw options
| |   +--rw timeout?          uint8
| |   +--rw attempts?        uint8
| |   +--rw nokia-ietf-system-aug:ndots?  uint8
```

```
module: ietf-interfaces
+--rw interfaces
| +--rw interface* [name]
| | +--rw name          nok-typ:nokia-string-ascii64
| | +--rw description?  string
| | +--rw type          identityref <-- is mandatory
| | +--rw enabled?      boolean
| | +--rw bbf-if-port-ref:port-layer-if*  hardware-ref {hw:hardware-config}?
```

### 1.6.1 Leaf value

Type the xpath nodes (e.g system dns-resolver options) that need to be modified.

Make use of [TAB] to let the CLI mention the possible node options.

Make use of ? to know which values are supported, for example:

<1 .. 30>[5] means "5" is the default value and 1..30 are the supported values.

When entering an invalid value the CLI will immediately prompt the user:

```
isam-reborn# config
Entering configuration mode terminal
isam-reborn(config)# system dns-resolver options [TAB]
Possible completions:
attempts ndots timeout
isam-reborn(config)# system dns-resolver options timeout ?
Possible completions:
<unsignedByte, 1 .. 30>[5]
isam-reborn(config)# system dns-resolver options timeout 20
isam-reborn(config)# system dns-resolver options timeout 50
-----^
syntax error: "50" is out of range.
```

At the end of entering one or multiple commands enter "commit" and "yes" to apply. The "commit" command allows to create/update/delete items in a single transaction.

```
isam-reborn(config)# commit
Are you really sure you want to commit? [yes,NO] yes
Commit complete.
```

To clear the changes that are not committed yet, type "revert" or "clear".

When entering CTRL-C, CTRL-Z, or exit on the top node the user will be prompted to confirm:

```
isam-reborn(config)# [CTRL-Z|CTRL-C|exit]
Uncommitted changes found, commit them? [yes/no/CANCEL]
```

To get out of config mode without receiving the above warning, use "abort".

To revert a single update (ex: to remove a leaf when it is optional or to fallback to the default value) use the keyword "no" in front of the command. Note that "no" is also used to remove the complete content of a YANG presence container.

```
isam-reborn(config)# no system dns-resolver options timeout
```

As delete/create/update commands can be combined before committing, it can be useful to display what the final modification is that will be committed:

```
isam-reborn(config)# system dns-resolver options timeout 20
isam-reborn(config)# system dns-resolver options attempts 4
isam-reborn(config)# no system dns-resolver options attempts 4
isam-reborn(config)# show configuration
system dns-resolver options timeout 20
```

## 1.6.2 Leaf-list value

Below is an example of how 2 items of a leaf-list are configured.

```
isam-reborn(config)# system dns-resolver search tom
isam-reborn(config)# system dns-resolver search piet
isam-reborn(config)# commit
```

To configure them in a single line:

```
isam-reborn(config)# system dns-resolver search [ tom piet ]
isam-reborn(config)# commit
```

To remove a leaf-list entry:

```
isam-reborn(config)# no system dns-resolver search tom
```

To remove a complete-leaf list:

```
isam-reborn(config)# no system dns-resolver search
```

### 1.6.3 List

When entering a list, the prompt shows the created instance between '(' and ')'. Within this instance, edit/modify the list parameters. To leave the instance use "exit" or "top".

"exit" will move up one level.

```
isam-reborn(config)# system dns-resolver server dns_server1
isam-reborn(config-server-dns_server1)#
isam-reborn(config-server-dns_server1)# udp-and-tcp address 1.1.1.1
isam-reborn(config-server-dns_server1)# udp-and-tcp port 53
isam-reborn(config-server-dns_server1)# commit
Are you really sure you want to commit? [yes,NO] yes
Commit complete.
isam-reborn(config-server-dns_server1)#
isam-reborn(config-server-dns_server1)# exit
isam-reborn(config)#
```

Once the entries in a list are created, the CLI will show these list entries when [TAB] is used, allowing a CLI user to view the created keys and select them.

```
isam-reborn(config)# system dns-resolver server [TAB]
Possible completions:
<name:string, min: 1 chars, max: 64 chars> dns_server1
isam-reborn(config)#
```

Removal of a list entry is done via the 'no' keyword.

```
isam-reborn(config)# no system dns-resolver server dns_server1
```

When creating items in a list which has mandatory leaf(s), the CLI will prompt the user to give the mandatory parameters. Only after that CLI will have the updated instance prompt. Note that both mandatory and optional values can be entered on a single line.

```
isam-reborn(config)# interfaces interface tom
Value for 'type' [a12MppSwitch,aal2,aal5,actelisMetaLOOP,adsl,adsl2,...]:
The value must be one of: (first 100):
  a12MppSwitch      aal2      aal5
  ...
Value for 'type' [a12MppSwitch,aal2,aal5,...]: ethernetCsmacd
isam-reborn(config-interface-tom)#
```

As the interface YANG model is augmented with YANG 'when' clauses based on the mandatory interface type value, CLI is able to indicate to the CLI user which of the many augmented parameters are applicable for this interface type when pressing '?'.

To prevent entering a subnode instance when entering a leaf:

```
isam-reborn(config)# confdConfig cli enterSubmodeOnLeaf false
isam-reborn(config)# system ntp server tom3 udp address 3.3.3.3
isam-reborn(config)#
```

To enter the subnode, only specify the subnode (e.g system ntp server tom3)

```
isam-reborn(config)# system ntp server tom3
isam-reborn(config-server-tom3)#
```

Note that to enable auto-completion/help of top commands in a subnode, verify the below setting:

```
isam-reborn(config)#confdConfig cli topLevelCmdsInSubMode true
```

Without this setting, top-level commands can be entered but without any help/auto-completion.

## 1.6.4 Leaf-refs

Another nice feature of the CLI is that for leaf-refs it will display the possible key values when pressing [TAB] or "?".

For instance while creating an interface, a reference to one or more hardware components has to be provided:

```
isam-reborn(config-interface-tom)# port-layer-if
Possible completions:
DSL1 DSL2 DSL3 DSL4 DSL5 DSL6 DSL7 DSL8 DSL9 DSL10 ...
```

Note that a referred leaf can only be deleted when no leaf-ref is pointing to it:

```
isam-reborn(config)# no interfaces interface inband-l2term
isam-reborn(config)# commit
Are you really sure you want to commit? [yes,NO] yes
Aborted: illegal reference 'interfaces interface inband ipif-lower-layer sub-interface'
```

## 1.6.5 Error reporting

The CLI reports error at different levels.

Direct:

- when entering wrong names (i.e CLI knows the names of the possible container/leaf/... based on YANG schema) or when entering wrong values or references.

At Commit:

- must constraints between YANG leaves are violated.
- removing a leaf which is referred by a leaf-ref statement.
- the system does not support the configuration (see constraints manual for indication)
- the datastore is locked (i.e to prevent simultaneous updates)

In case committing updates violate multiple constraints, then CLI will only show one of the failures in contrast to NETCONF where multiple errors can be mentioned.

## 1.7 Display configuration data

To view what has been configured, use 'show full-configuration' within the config mode and complete eventually with xpath nodes to limit the output.

```
isam-reborn(config)# show full-configuration system dns-resolver
system dns-resolver options timeout 20 ! 5
```

The output shows the difference between the configured value and the default YANG value. The default YANG value (after '!') can be hidden:

```
isam-reborn# show-defaults false>true
```

The output can also show the default values that are not explicitly configured, by using '| details'.

In below output, the last 2 leaves were not configured, but become visible via details.

```
isam-reborn(config)# show full-configuration system dns-resolver | details
system dns-resolver options timeout 20 ! 5
system dns-resolver options attempts 2 ! 2
system dns-resolver options ndots 1 ! 1
```

When setting the value of a leaf explicitly to its default value (instead of using 'no' keyword), it will be displayed depending on below configuration option:

```
isam-reborn(config)# confdConfig cli trimDefaultShow true>false
```

If 'true', then leaf nodes that have the same value as the default value will not be displayed even when explicitly configured to have that value. If 'false', such leaves will be displayed if explicitly configured to have the value.

The output can be given in different formats:

```
show full-configuration system dns-resolver options | display
```

Possible completions:

curly-braces	Display output as curly braces
keypath	Display output as keypath
prefixes	Display namespace prefixes
xml	Display output as XML
xpath	Display output as xpath

```
isam-reborn(config)# show full-configuration system dns-resolver options | display xml
```

```
<config xmlns="http://tail-f.com/ns/config/1.0">
  <system xmlns="urn:ietf:params:xml:ns:yang:ietf-system">
    <dns-resolver>
      <options>
        <timeout>20</timeout>
      </options>
    </dns-resolver>
  </system>
</config>
```

```
isam-reborn(config)# show full-configuration system ntp server | display xpath
```

```
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
```

Another option is to display list items in a tabular format:

```
isam-reborn(config)# show full-configuration system ntp server | tab
```

		ASSOCIATION				KEY			
NAME	ADDRESS	PORT	TYPE	IBURST	PREFER	MINPOLL	MAXPOLL	ID	
tom1	1.1.1.1	123	server	false	false	poll-1min4sec	poll-17min4sec	-	
tom2	1.1.1.2	123	server	false	false	poll-1min4sec	poll-17min4sec	-	
tom3	1.1.1.3	123	server	false	false	poll-1min4sec	poll-17min4sec	-	

## 1.8 Manipulating lists and leaf-lists

When having configured a list or a leaf-list with elements ordered by user, it can occur that one wants to modify the order or add entries at a particular place.

- insert <path>[first|last|beforekey|afterkey]
- move <path>[first|last|beforekey|afterkey]

```
isam-reborn(config)# insert system dns-resolver search tom1
isam-reborn(config)# insert system dns-resolver search tom2
isam-reborn(config)# insert system dns-resolver search tom3
isam-reborn(config)# move system dns-resolver search piet
Possible completions:
  after before first last
isam-reborn(config)# move system dns-resolver search tom1 last
isam-reborn(config)# commit
isam-reborn(config)# show full-configuration system dns-resolver search
system dns-resolver search [ tom2 tom3 tom1 ]
```

Also, the key name of an entry in a list can be updated.

- rename <instance path> <new id>

## 1.9 Configuring sensitive parameters

Some YANG fields are required to not be echoed on the screen. Typical example is a sensitive parameter like password.

This implies that such parameters would be prompted by the system like below:

```
isam-reborn(config)# system radius server tom udp ?
```

Possible completions:

```
address authentication-port shared-secret
```

```
isam-reborn(config)# system radius server tom udp address 1.1.1.1
```

```
Value for 'shared-secret' (<AES encrypted string, min: 1 units, max: 128 units>): *****
```

```
isam-reborn(config-server-tom)#
```

Giving the sensitive parameter on the first line in clear-text will lead to an error.

## 1.10 Alias definition and usage

It is possible to define simple aliases and parametrised aliases, i.e. aliases that accepts parameters. The parameters are then expanded when the alias is applied. The alias can be used anywhere on the command line. After a command with an alias has been entered, the expanded command line is displayed so that the alias value can be verified.

```
isam-reborn(config)# alias foo(a,b) "show $(a) ; show $(b)"
isam-reborn(config)# alias myUser c87923
isam-reborn(config)# commit
isam-reborn(config)# foo(history,configuration)
isam-reborn(config)# show history ; show configuration
...
isam-reborn(config)# aaa authentication users user myUser
isam-reborn(config)# aaa authentication users user c87923
```

Note: Be aware while typing any CLI command where the alias name is present, the alias will be replaced. So add a specific prefix like \$foo for instance, so it does not collide with keyword/parameter names and/or parameter values.

There are other CLI options:

```
isam-reborn(config)#confdConfig cli expandAliasOnCompletion (false|true) [true]
If set to 'true' then aliases will be expanded before invoking the completion code.
```

```
isam-reborn(config)#confdConfig cli expandAliasEscape (false | charType) [false]
If set to a character then expanding an alias can be prevented by putting the
character in front of the alias.
```

## 1.11 Command completion and info texts

In general typing TAB or ? or multiple SPACES leads to auto-completion, by presenting a list of options and a descriptive text. This descriptive text is from YANG description. On a partially entered string, only strings starting with that prefix are displayed.

The list of options presented depends on the YANG schema.

When creating an interface of a particular type, it will show:

- items applicable for all interface types (i.e no 'when' clause).
- items only applicable for the given interface type (e.g 'augment' with 'when' clause matching the interface type).

When displaying data, the options displayed when pressing TAB will contain items which are not applicable (i.e. the YANG schema of read-only data does not have a 'when' clause).

Note: Once inside a submode then auto-completion will work only when the below option is set:

```
isam-reborn(config)# confdConfig cli topLevelCmdsInSubMode true
```

Whether the CLI is inside a subnode or not is visible via the prompt, i.e value between '(' and ')':

```
isam-reborn(config)# system ntp server tom udp address 1.1.1.1
isam-reborn(config-server-tom)# system ntp server [TAB]
```

CLI has an auto-rendering of enabled/disabled. If the data model contains an element called 'enabled' of type 'xs:boolean' then it will get some special treatment. Normally the user would have to enter 'enabled true' and 'enabled false' to enable/disable. To make this a bit more user friendly the CLI will also accept 'enabled' and 'disabled'. This option can be set via:

```
isam-reborn(config)#confdConfig cli useShortEnabled false|true [true]
```

The following options are available to not display any description (reduces output and scrolling):

```
isam-reborn(config)#confdConfig cli infoOnMatch (false|true) [true]
```

If 'true' then the CLI will add info strings when displaying possible match completions.

```
isam-reborn(config)#confdConfig cli infoOnSpace (false|true) [true]
```

If 'false' then no info strings will be displayed in the tab completion list when the user enters SPACE.

```
isam-reborn(config)#confdConfig cli infoOnTab (false|true) [true]
```

If 'false' then no info strings will be displayed in the tab completion list when the user enters TAB.

```
isam-reborn(config)# confdConfig cli ignoreLeadingWhitespace (false|true) [false]
```

If 'false' then the CLI will show completion help when the user enters TAB or SPACE as the first characters on a row. If set to 'true' then leading SPACE and TAB are ignored.

The user can enter '?' to get a list of possible alternatives.

## 1.12 Pasting a copied configuration

To copy out an output, it is advised to make sure that the output data does not contain defaults. It reduces saved output but also datastore size as defaults are then part of the YANG schema and not explicit configured.

```
isam-reborn# show-defaults false
isam-reborn# config
isam-reborn(config)# show full-configuration system
```

Copy the output and before pasting the output make sure next settings are done:

```
isam-reborn# autowizard false
isam-reborn# complete-on-space false
isam-reborn# config
isam-reborn(config) confdConfig cli ignoreLeadingWhitespace true
isam-reborn(config)# < paste saved output >
```

## 1.13 Configuring ranges

It is possible to modify a range of instances at the same time using range expressions, and to display a range of instances using a range expression.

Support of range expressions is present for:

- Key attributes that are integers.
- Key elements of other types as long as they are restricted to the pattern `[a-zA-Z-]*[0-9]+/[0-9]+/[0-9]+/.../[0-9]+`.  
i.e., the CLI understands the `[integer]/[integer]` syntax.

This is driven by the option `allowRangeExpressionAllTypes`. Note: A warning text "this line doesn't have a valid range expression" will appear when the syntax does not match with a range (this is purely informational) when this option is enabled.

Example below show updating interface DSL1 and DSL2 description fields:

```
isam-reborn# config
Entering configuration mode terminal
isam-reborn(config)# interfaces interface range DSL1-2 description "tommy"
isam-reborn(config-interface-DSL1-2)# commit
```

To show the content of description fields for DSL1-DSL3 and not other DSL lines:

```
isam-reborn(config)# show full-configuration interfaces interface DSL1-3 | select description
interfaces interface DSL1
description tommy
interfaces interface DSL2
description tommy
interfaces interface DSL3
description default
```

Some CLI range options:

```
isam-reborn(config)# confdConfig cli useDoubleDotRanges (boolean) [false]
useDoubleDotRanges is either 'true' or 'false'. If 'true' then range expressions are typed
as 1..3, if set to 'false' then ranges are typed as 1-3.
```

```
isam-reborn(config)# confdConfig cli allowRangeExpression (boolean) [true]
allowRangeExpression is either "true" or "false". If "true" then range expressions are
allowed for all key values of basic type integer.
```

```
isam-reborn(config)# confdConfig cli allowRangeExpressionAllTypes (boolean) [true]
allowRangeExpressionAllTypes is either "true" or "false". If "true" then range
expressions are allowed for all key values regardless of type.
```

```
isam-reborn(config)# confdConfig cli suppressRangeKeyword (boolean) [false]
suppressRangeKeyword is either "true" or "false". If "true" then 'range' keyword
is not allowed.
```

## 1.14 Filtering per Model and per Instance

Filters can be applied to the output of a 'show' command in order to limit the amount of information printed out to a relevant minimum.

Filters can be specified directly as part of the show command or as parameters to select or deselect pipe targets. The same rules with minor differences apply for filters as part of the 'show' command and for the select pipe target parameters. For the deselect pipe target the rules are mostly the inversion of those for the select pipe target, with some exceptions.

The filtering can be applied to lists, since nodes of other types can not contain several instances of the same structure and thus do not need filtering.

There are two kinds of filtering:

- the first kind is performed on a data structure, that is nodes are filtered based on their name and position in the YANG model. This is "model filtering".
- the second kind is "instance filtering", that is nodes are filtered based on their values.

Assume the below items are populated in the system model for 'ntp':

```
isam-reborn(config)# system ntp server tom1 udp address 1.1.1.1 port 123
isam-reborn(config)# system ntp server tom2 udp address 1.1.1.2 port 123
isam-reborn(config)# system ntp server tom3 udp address 1.1.1.3 port 123
```

Displaying the items without filter:

```
isam-reborn# show running-config system ntp server | display xpath
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom1']/udp/port 123
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom2']/udp/port 123
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
/system/ntp/server[name='tom3']/udp/port 123
```

Displaying the items with model filter (i.e only address field is shown):

```
isam-reborn# show running-config system ntp server udp address | display xpath
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
```

Displaying the items with instance filtering (i.e display the data belonging to address 1.1.1.1). Port is displayed as belonging to the instance:

```
isam-reborn# show running-config system ntp server udp address 1.1.1.1 | display xpath
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
```

```
/system/ntp/server[name='tom1']/udp/port 123
```

Similar behaviour of filtering can be achieved by '|' and 'select':

```
isam-reborn# show running-config system ntp server | select udp address | display xpath
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
```

```
isam-reborn# show running-config system ntp server | select udp address 1.1.1.1 | display xpath
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom1']/udp/port 123
```

```
isam-reborn# show running-config system ntp server | display xpath | de-select udp port
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
```

Filtering by a non-presence container is both model filtering and instance filtering. Model filtering's aspect works such that when a non-presence container is specified as a filter then only a subtree rooted at that container is displayed. Since the non-presence container cannot have its own value, rather exists only when nodes below it in the model exist, this makes instance filtering different from that for leaves and leaf-lists. Instance filtering's aspect works such that only instances where the non-presence container has nodes with

values (as direct children or indirect descendants) are shown.

When a sub-list name or presence container name is supplied as a filter then only list instances where the sub-list is not empty or a presence container is configured are shown (instance filtering). For each selected instance, only the subtree rooted at the sub-list or the container is shown (model filtering).

The difference between filtering by non-presence container and by presence container is that presence containers do have value in the sense that they can exist even if nothing is configured below them. Thus a filter on a presence container also selects instances with empty presence containers!

When filtering by sub-list is applied then it is not possible to directly use nodes under the sub-list as part of the filter. For this, one has to specify the wildcard "\*" as the sub-list key and then specify nodes under the sub-list.

```
module: ietf-hardware
  +--ro hardware-state
  | +--ro last-change?  yang:date-and-time
  | +--ro component* [name]
  |   +--ro name          string
  |   +--ro class          identityref
  |   +--ro bbfsim:software
  |     | +--ro bbfsim:software* [name]          <---- sublist
  |     | | +--ro bbfsim:name          bbfsim-yang:string-ascii64
```

```

| | | +--ro bbf-sim:download          <---- node under sublist
| | | +--ro bbf-sim:current-state
| | | | +--ro bbf-sim:state?          enumeration
| | | | +--ro bbf-sim:timestamp?      yang:date-and-time
| | | | +--ro bbf-sim:software-name?  software-name
| | | | +--ro nokia-swm-ext:download-progress? uint32

```

```

isam-reborn# show hardware-state component software software * download
hardware-state component

```

NAME	NAME	STATE	TIMESTAMP	NAME	PROGRESS
DSL1	cpe_software	idle	2022-11-18T08:42:11+00:00	-	-
DSL2	cpe_software	idle	2022-11-18T08:42:11+00:00	-	-
DSL16	cpe_software	idle	2022-11-18T08:42:11+00:00	-	-
Chassis	application_software	idle	2022-11-18T08:42:10+00:00	-	-

```

isam-reborn# show hardware-state component software software download
% No entries found.

```

Filters as parameters to select a pipe target mostly work the same.

## 1.15 Filtering display options

In this chapter a list of options after the pipe target is given. Note that the available options are slightly different between show of operational/configuration and of config data (i.e show configuration).

ascending: Display the file in ascending order.

begin: Begin with the line that matches.

```
isam-reborn# show running-config system ntp server | display xpath | begin tom2
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom2']/udp/port 123
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
/system/ntp/server[name='tom3']/udp/port 123
```

context-match: Context match [ only configuration data ].

Allows to specify a regular expression but gives more context than include target.

```
isam-reborn(config)# show full-configuration system ntp server | context-match
"1.1.1.1|1.1.1.2"
system ntp server tom1
udp address 1.1.1.1
system ntp server tom2
udp address 1.1.1.2
```

count: Count the number of lines in the output.

```
isam-reborn# show running-config system ntp server | count
Count: 12 lines
```

csv: Show table output in CSV format.

```
isam-reborn# show hardware-state component software software * download | csv
hardware-state component
NAME,NAME,STATE,TIMESTAMP,...
DSL1,cpe_software,idle,2022-11-18T08:42:11+00:00,-,-,-,-,-
DSL2,cpe_software,idle,2022-11-18T08:42:11+00:00,-,-,-,-,-
Chassis,application_software,idle,2022-11-18T08:42:10+00:00,-,-,-,-,-
```

de-select: De-select columns.

```
isam-reborn# show running-config system ntp server | display xpath | de-select udp port
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
```

descending: Display the file in descending order.

```
isam-reborn# show running-config system ntp server | display xpath | descending
/system/ntp/server[name='tom3']/udp/port 123
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
/system/ntp/server[name='tom2']/udp/port 123
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom1']/udp/port 123
```

```
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
```

display: Display options.

The display target can be used to display output in a set of output formats. Some of these output formats are unique to specific modes, such as configuration or operational mode. The output formats are json, keypath, xml, and xpath.

display-level: [ only operational data ]

to limit how many levels will be displayed by the show command

exclude: Exclude lines that match.

```
isam-reborn# show running-config system ntp server | display xpath | exclude tom1
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
/system/ntp/server[name='tom2']/udp/port 123
/system/ntp/server[name='tom3']/udp/address 1.1.1.3
/system/ntp/server[name='tom3']/udp/port 123
```

extended: Display referring entries [ only configuration data ].

include: Include lines that match.

The include target is used to only include lines matching a regular expression.

```
show full-configuration system ntp server | include "1.1.1.1|1.1.1.2"
```

```
udp address 1.1.1.1
```

```
udp address 1.1.1.2
```

```
isam-reborn# show running-config system ntp server | display xpath | include 123
```

```
/system/ntp/server[name='tom1']/udp/port 123
```

```
/system/ntp/server[name='tom2']/udp/port 123
```

```
/system/ntp/server[name='tom3']/udp/port 123
```

linnum: Enumerate lines in the output.

```
isam-reborn# show running-config system ntp server | display xpath | linnum
```

```
1: /system/ntp/server[name='tom1']/udp/address 1.1.1.1
```

```
2: /system/ntp/server[name='tom1']/udp/port 123
```

```
3: /system/ntp/server[name='tom2']/udp/address 1.1.1.2
```

```
4: /system/ntp/server[name='tom2']/udp/port 123
```

```
5: /system/ntp/server[name='tom3']/udp/address 1.1.1.3
```

```
6: /system/ntp/server[name='tom3']/udp/port 123
```

match-all: All selected filters must match.

When putting multiple filters, it requires all filters to match (and condition).

For example, give me all interfaces where "type=ethernetCsmacd" and "oper-status=down":

```
isam-reborn# show interfaces-state interface | select oper-status down
| select type ethernetCsmacd | match-all
```

match-any: At least one filter must match

When putting multiple filters, any filter that matches (or condition).

For example, give me all interfaces where "type=ethernetCsmacd" or "oper-status=down":

```
isam-reborn# show interfaces-state interface | select oper-status down
| select type ethernetCsmacd | match-any
```

more: Paginate output.

nomore: Suppress pagination.

notab: Suppress table output [only operational data].

numlines: Display the lines upto this specified number.

repeat: Repeat the 'show' command with a given interval [only operational data].

select: Select additional columns. Note that multiple selects can be piped with match-any.

sort-by: Select sorting indices.

The sort-by target makes it possible for the CLI user to control in which order instances should be displayed and can be used when the path points to a list. The argument to sort-by can either be a secondary index or an arbitrary set of leaves in the list. If a secondary index is given as an argument, the table will be sorted in the order defined by the secondary index. If a set of leaves is given as an argument, the table will be sorted in the order in which the leaves are entered.

tab: Enforce table output.

The tab pipe target is used to enforce tabular output which is only suitable for the list element. Naturally the table format is not suitable to display arbitrary data output since it needs to map the data to columns and rows.

until: End with the line that matches.

Output can also be ended when a line matches a regular expression. This is done with the 'until' target.

```
isam-reborn(config)# show full-configuration system ntp server | until 1.1.1.2 | display xpath
/system/ntp/server[name='tom1']/udp/address 1.1.1.1
/system/ntp/server[name='tom1']/udp/port 123
/system/ntp/server[name='tom2']/udp/address 1.1.1.2
```

Regular expressions are a subset of the regular expressions found in egrep and in the AWK programming language.

Some common operators are:

- . Matches any character.

- ^ Matches the beginning of a string.

- \$ Matches the end of a string.

- [abc...] Character class, which matches any of the characters abc...

Character ranges are specified by a pair of characters separated by a -.

[^abc...] Negated character class, which matches any character except abc....

r1 | r2 Alternation. It matches either r1 or r2.

r1r2 Concatenation. It matches r1 and then r2.

r+ Matches one or more rs.

r\* Matches zero or more rs.

r? Matches zero or one rs.

(r) Grouping. It matches r

Below is an example of alias usage for a long filter command:

```
alias show_G.fast show interfaces-state interface DSL * line bbf-fast:line status profile "|" select
line bbf-fast:line channel status downstream net-data-rate "|" select line
bbf-fast:line channel status upstream net-data-rate "|" select oper-status "|"
select admin-status "|" select line operational-mode "|" exclude VLAN "|" nomore
```

```
isam-reborn# show_G.fast
```

NAME	STATUS	STATUS	MODE	RATE	RATE	PROFILE
DSL1	up	up	mode-fast	1099159	356225	g.9701-profile-212a
DSL2	up	up	mode-fast	1099148	354867	g.9701-profile-212a
DSL3	up	up	mode-fast	1099148	357583	g.9701-profile-212a
DSL4	up	up	mode-fast	1099148	359360	g.9701-profile-212a
DSL5	up	up	mode-fast	1099148	360289	g.9701-profile-212a
DSL6	up	up	mode-fast	1099148	354571	g.9701-profile-212a
DSL7	up	up	mode-fast	1099148	358431	g.9701-profile-212a
DSL8	up	up	mode-fast	1099159	357429	g.9701-profile-212a

Note: The above command only works when at least one interface starting with DSL exists. In case no such interface exist an error will be displayed instead of "no entries exist". The reason is that CLI thinks it is a mistyped keyword.

## 1.16 Macro eCLI commands

Macro eCLI commands can only be executed by specific CLI users.

Macro CLI commands are internally mapped on the same set of RPCs as a NOKIA controller uses for vCLI. Therefore the show output of these commands has limited filter capabilities and a fixed display format.

The macro commands support ? and [TAB] for command completion (but not for getting the keys of a list). The order of parameters is fixed.

Supported commands after pipe are:

- ascending - Display the file in ascending order
- begin - Begin with the line that matches
- count - Count the number of lines in the output
- descending - Display the file in descending order
- exclude - Exclude lines that match
- include - Include lines that match
- linnum - Enumerate lines in the output
- more - Paginate output
- nomore - Suppress pagination
- numlines - Display the lines upto this specified number
- until - End with the line that matches

Example of setting an NTP server:

```
isam-reborn# macro system-date-time-ntp-edit maxpoll poll-8min32se minpoll poll-32sec
ntp-server-ip-address 2.2.2.3 ntp-server-name tom1 ntp-server-port 1233
isam-reborn#
System message at 2022-11-20 15:29:20...
Commit performed by admin via ssh using netconf.
```

Example of a macro getting data:

```
isam-reborn# macro system-date-time-ntp-get-config
ntp server name tom1
ntp server udp address 1.1.1.1
ntp server udp port 123
ntp server[2] name tom2
ntp server[2] udp address 1.1.1.2
ntp server[2] udp port 123
ntp server[3] name tom3
ntp server[3] udp address 1.1.1.3
ntp server[3] udp port 123
```

## 2. YANG Configuration Commands

### 2.1 alarms commands

#### 2.1.1 Command Tree

```
-- alarms control alarms-delay-profile alarm-type-profile <A>
  |-- clearance-delay <B>
  |-- clearance-delay-disabled
-- alarms control alarms-delay-profile system-clearance-delay <A>
```

#### 2.1.2 Commands

alarms control alarms-delay-profile alarm-type-profile <A> clearance-delay <B>

##### Input Parameters:

Parameter	Type	Description
A	identityref One of: ac-power-loss   all-freq-fail   all-phase-fail   backplane-data-link-failure   bat-failure   battery-low   battery-missing   battery- not-active   battery-temperature-out-of- range   battery-temperature-sensor-missing   bbf-alarm-type-id   bbf-security-alarm- type-id   bbf-threshold-crossing-alarm- type-id   bits-fail   bits-out-shutoff   board- capability-mismatch   board-communication- failure   board-initialization-failure   board- inserted-in-wrong-shelf   board-presence- mismatch   board-property-mismatch   board-reset-protection   board-sensor- failure   board-software-incompatibility   board-temperature-shutdown   ca-cert- expiration   certificate-alarms   chassis- property-mismatch-alarm   cipher-alarms   communications-alarm   completed-sztp- process-requires-closure   connection- failure   cpu-usage-exceeding   disk- usage-exceeding   end-cert-expiration   environmental-alarm   eqpt-environmental- alarms   equipment-alarm   est-connectivity- or-operations-failure   est-end-cert- expiration   est-server   eth-bp-alarms   ethsfp-alarms   expiration   export-interval- inadequate   external-alarm   external-	Identifies an alarm type. Only identities of concrete alarm types (present in the alarm inventory) can be configured. Usage of an abstract alarm type will be rejected. An abstract alarm type is used as a base for other alarm type ids and not as a value for an alarm.

	alarm-1   external-alarms   fan-alarms   fan-failure   fan-tray-missing   freq-port   gnss-fail   handshake-failure   handshake- failure   inband-duplicate-ipv6-address   internal-clk-fail   ipfix-connectivity-alarm   ipfix-service-alarm   keystore-alarms   l2forwarding   l2forwarding-duplicate- mac-learning   l2forwarding-mac-learning- collision   l2forwarding-mac-learning- collision-atl   lag-alarm   lag-alarm-type   lag- group-down   lag-sub-group-switch-over- failed   lag-sub-group-threshold-reached   license   license-alarms   license-key- exhausted   license-server-connection-lost   los   loss-of-connection   memory-usage- exceeding   mgntinterface   missing-key- pair   multiple-fan-alarm   nokia-alarms   non-recommended-cipher   ntp-alarms   ntp- server-cannot-respond   ntpserver   onu- alarm   phase-port   pinned-cert-expiration   power-circuit-failure   power-supply- unit   power-supply-unit-failure   power- supply-unit-not-active   power-supply-unit- voltage-high   power-supply-unit-voltage- low   processing-error-alarm   ptp-fail   quality-of-service-alarm   rpf-base-alarm   sealed-box-open   secure-transport-alarms   sensor-temperature-critical   sensor- temperature-high   sensor-temperature- low   sfp-extraction-alarm   single-fan-alarm   sw-alarms   sw-missing   sync-alarms   synce-fail   syslog   system-maximum-mac- exceeded   sztp-alarms   temperature   transceiver-alarm   transceiver-initialization- failure-alarm   transceiver-link-rx-power   transceiver-link-tx-bias   transceiver- link-tx-fault   transceiver-link-tx-power   transceiver-not-accessible-alarm   transceiver-presence-mismatch-alarm   transceiver-property-mismatch-alarm   transceiver-sensor-temperature-high   transceiver-sensor-temperature-high- warning   transceiver-sensor-temperature- low   transceiver-sensor-temperature- low-warning   transceiver-supply-voltage   unsupported-transceiver   water-seepage-in- box   zero-touch-provision-alarms	
B	uint8 [1..180]	Unit: seconds  Define the minimum timeframe without toggling from cleared to active state for an alarm. Whenever such a transition is

		detected, the clearance of the alarm will be postponed. This leaf controls the delay of alarms clearance for a specific alarm-type. This leaf overrule the clearance delay configuration on system level.
--	--	---

alarms control alarms-delay-profile alarm-type-profile <A> clearance-delay-disabled

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: ac-power-loss   all-freq-fail   all-phase-fail   backplane-data-link-failure   bat-failure   battery-low   battery-missing   battery-not-active   battery-temperature-out-of-range   battery-temperature-sensor-missing   bbf-alarm-type-id   bbf-security-alarm-type-id   bbf-threshold-crossing-alarm-type-id   bits-fail   bits-out-shutoff   board-capability-mismatch   board-communication-failure   board-initialization-failure   board-inserted-in-wrong-shelf   board-presence-mismatch   board-property-mismatch   board-reset-protection   board-sensor-failure   board-software-incompatibility   board-temperature-shutdown   ca-cert-expiration   certificate-alarms   chassis-property-mismatch-alarm   cipher-alarms   communications-alarm   completed-sztp-process-requires-closure   connection-failure   cpu-usage-exceeding   disk-usage-exceeding   end-cert-expiration   environmental-alarm   eqpt-environmental-alarms   equipment-alarm   est-connectivity-or-operations-failure   est-end-cert-expiration   est-server   eth-bp-alarms   ethsfp-alarms   expiration   export-interval-inadequate   external-alarm   external-alarm-1   external-alarms   fan-alarms   fan-failure   fan-tray-missing   freq-port   gnss-fail   handshake-failure   handshake-failure   inband-duplicate-ipv6-address   internal-clk-fail   ipfix-connectivity-alarm   ipfix-service-alarm   keystore-alarms   l2forwarding   l2forwarding-duplicate-mac-learning   l2forwarding-mac-learning-	Identifies an alarm type. Only identities of concrete alarm types (present in the alarm inventory) can be configured. Usage of an abstract alarm type will be rejected. An abstract alarm type is used as a base for other alarm type ids and not as a value for an alarm.

collision | l2forwarding-mac-learning-collision-atl | lag-alarm | lag-alarm-type | lag-group-down | lag-sub-group-switch-over-failed | lag-sub-group-threshold-reached | license | license-alarms | license-key-exhausted | license-server-connection-lost | los | loss-of-connection | memory-usage-exceeding | mgntinterface | missing-key-pair | multiple-fan-alarm | nokia-alarms | non-recommended-cipher | ntp-alarms | ntp-server-cannot-respond | ntpserver | onu-alarm | phase-port | pinned-cert-expiration | power-circuit-failure | power-supply-unit | power-supply-unit-failure | power-supply-unit-not-active | power-supply-unit-voltage-high | power-supply-unit-voltage-low | processing-error-alarm | ptp-fail | quality-of-service-alarm | rpf-base-alarm | sealed-box-open | secure-transport-alarms | sensor-temperature-critical | sensor-temperature-high | sensor-temperature-low | sfp-extraction-alarm | single-fan-alarm | sw-alarms | sw-missing | sync-alarms | synce-fail | syslog | system-maximum-mac-exceeded | sztp-alarms | temperature | transceiver-alarm | transceiver-initialization-failure-alarm | transceiver-link-rx-power | transceiver-link-tx-bias | transceiver-link-tx-fault | transceiver-link-tx-power | transceiver-not-accessible-alarm | transceiver-presence-mismatch-alarm | transceiver-property-mismatch-alarm | transceiver-sensor-temperature-high | transceiver-sensor-temperature-high-warning | transceiver-sensor-temperature-low | transceiver-sensor-temperature-low-warning | transceiver-supply-voltage | unsupported-transceiver | water-seepage-in-box | zero-touch-provision-alarms

alarms control alarms-delay-profile system-clearance-delay <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [1..180]	Unit: seconds  Define the minimum time without toggling from cleared to active state for an alarm.

		<p>Whenever such a transition is detected, the clearance of the alarm will be postponed. This leaf have system wide impact (affects all the alarm type ids), in case that it is not configured it is considered as disabled on system level. In case that an alarm-type-id should be excluded or a different value should be applied then a dedicated profile must be created in the alarm-type-profile list.</p>
--	--	---

## 2.2 alias commands

### 2.2.1 Command Tree

|-- [alias <A><B>](#)

### 2.2.2 Commands

alias <A><B>

#### Input Parameters:

Parameter	Type	Description
A	string	Name of the command alias. An alias name can be a single word or multiple words joined by a dash (-).
B	string	Original command syntax. Valid abbreviations of the original command syntax can be entered for the command-syntax argument.

## 2.3 applications commands

### 2.3.1 Command Tree

```
|-- applications enable-logging-for <A>
  |-- modules <B>
    |-- level <C> (Mandatory)
```

### 2.3.2 Commands

applications enable-logging-for <A> modules <B> level <C>

#### Input Parameters:

Parameter	Type	Description
A	string	This leaf provide the application name (sw module ).
B	string	This leaf represent an internal logger
C	enumeration One of: none   critical   error   warning   info   debug	This leaf specifies the syslog message severity.

## 2.4 certificate commands

### 2.4.1 Command Tree

|-- [certificate alarm-configuration certificate-expiration notify-days <A>](#)

### 2.4.2 Commands

certificate alarm-configuration certificate-expiration notify-days <A>

#### Input Parameters:

Parameter	Type	Description
A	uint8 [15..90]  default '30'	Unit: days  Number of days before the expiration of a certificate

## 2.5 cfm commands

### 2.5.1 Command Tree

```

|-- cfm maintenance-domain <A>
|  |-- mac-address-and-uint-type address <B> (Mandatory)
|  |-- mac-address-and-uint-type int <B> (Mandatory)
|  |-- char-string <B>
|  |-- dns-like-name <B>
|  |-- maintenance-association <B>
|     |-- vpn-id vpn-index <C> (Mandatory)
|     |-- vpn-id vpn-oui <C> (Mandatory)
|     |-- char-string <C>
|     |-- ltm-discard <C>
|     |-- maintenance-association-mep <C>
|     |-- mhf-creation <C>
|     |-- primary-vid <C>
|     |-- unsigned-int16 <C>
|  |-- md-level <B>
|  |-- none
|-- cfm maintenance-group <A>
|  |-- ma-id <B> (Mandatory)
|  |-- md-id <B> (Mandatory)
|  |-- forwarder <B>
|  |-- mep <B>
|     |-- direction <C> (Mandatory)
|     |-- interface <C> (Mandatory)
|     |-- ccm-ltm-inner-tag-priority <C>
|     |-- ccm-ltm-priority <C>
|     |-- enabled <C>

```

### 2.5.2 Commands

cfm maintenance-domain <A> mac-address-and-uint-type address <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	The MAC address.

cfm maintenance-domain <A> mac-address-and-uint-type int <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	uint16	The additional 2-octet (unsigned) integer.

cfm maintenance-domain <A> char-string <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..43} {pattern = [ --]*}  default 'DEFAULT'	RFC2579 DisplayString, except that the character codes 0-31 (decimal) are not used.

cfm maintenance-domain <A> dns-like-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..43}	Domain name like string, globally unique text string derived from a DNS name.

cfm maintenance-domain <A> maintenance-association <B> vpn-id vpn-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	uint32	4 octet VPN index identifying VPN according to OUI.

cfm maintenance-domain <A> maintenance-association <B> vpn-id vpn-oui <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	uint32 [0..16777215]	3 octet VPN authority Organizationally Unique Identifier.

cfm maintenance-domain <A> maintenance-association <B> char-string <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	string {length = 1..45} {pattern = [~~]*}	RFC2579 DisplayString, except that the character codes 0-31 (decimal) are not used.

cfm maintenance-domain <A> maintenance-association <B> ltm-discard <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	enumeration One of: user-port   network-port   subtended-node-port	<p>The LTM messages arriving on a port at the same level of a MIP where the interface's usage-type matches one of the configured values in the list, are discarded, because the device generating the LTM on that type of interface are considered as non-trusted.</p> <p>The interface usage not being added to this list means the devices connected to that type of interface are trusted. An empty list or a non-existing leaf means all peer devices are trusted and LTM messages will not be discarded.</p>

cfm maintenance-domain <A> maintenance-association <B> maintenance-association-mep <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	uint16 [1..8191]	Integer that is unique among all the MEPs in the same Maintenance Association.

cfm maintenance-domain <A> maintenance-association <B> mhf-creation <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	enumeration One of: mhf-none   mhf-default  default 'mhf-none'	Value indicating whether the management entity can create MHFs (MIP Half Function) for this Maintenance Association.

cfm maintenance-domain <A> maintenance-association <B> primary-vid <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	uint16 [1..4094]	Primary VLAN ID. 12 bits represented in a 2-octet integer.

cfm maintenance-domain <A> maintenance-association <B> unsigned-int16 <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.

B	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	Key of the Maintenance Association list of entries.
C	uint16	2-octet integer.

cfm maintenance-domain <A> md-level <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.
B	uint8 [0..7]  default '0'	The Maintenance Domain level.

cfm maintenance-domain <A> none

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The index to the Maintenance Domain list.

cfm maintenance-group <A> ma-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref	A reference to the maintenance association in the specified maintenance domain, that this maintenance group is associated with.

	: /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance-association/ma-id	
--	---	--

cfm maintenance-group <A> md-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /cfm/maintenance-domain/md-id	A reference to the maintenance domain that this maintenance group is associated with.

cfm maintenance-group <A> forwarder <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /bbf-l2-fwd:forwarding/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder/bbf-l2-fwd:name	This leaf references a forwarder.

cfm maintenance-group <A> mep <B> direction <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref	Integer that is unique among all the MEPs in the same Maintenance Association.

	: /cfm/maintenance-domain[md-id = current()../md-id]/maintenance-association[ma-id = current()../ma-id]/maintenance-association-mep/mep-id	
C	enumeration One of: down   up	The direction in which the MEP faces on the Bridge Port. Example, up or down.

cfm maintenance-group <A> mep <B> interface <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /cfm/maintenance-domain[md-id = current()../md-id]/maintenance-association[ma-id = current()../ma-id]/maintenance-association-mep/mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.
C	leafref : /if:interfaces/if:interface/if:name	References the interface on which the MEP shall be created. Note that MEPs can be VLAN-unaware and refer to a -link level- interface, and can be VLAN-aware and refer to a VLAN sub-interface. Note that the Link Aggregation Group (LAG) is not part of the -link level- interfaces. This is because IEEE 802.1ag defines that if a LAG is used in combination with VLAN-unaware MEPs, then the MEPs are configured below the LAG, i.e. per Ethernet interface.

cfm maintenance-group <A> mep <B> ccm-ltm-inner-tag-priority <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.

B	leafref : /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance- association[ma-id = current()/../ma-id]/ maintenance-association-mep/mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.
C	uint8 [0..7]	Priority.3 bit value to be used in the inner tag, if present in the transmitted frame. If this optional leaf is not configured and the CFM packet need to send with the inner tag then default value 7 implicitly considered for the inner tag.

cfm maintenance-group <A> mep <B> ccm-ltm-priority <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance- association[ma-id = current()/../ma-id]/ maintenance-association-mep/mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.
C	uint8 [0..7]  default '7'	The priority value for CCMs and LTMs transmitted by the MEP. The default value is the highest priority allowed to pass through the Bridge Port for any of the MEPs VID(s).

cfm maintenance-group <A> mep <B> enabled <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref	Integer that is unique among all the MEPs in the same Maintenance Association.

	: /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance-association[ma-id = current()/../ma-id]/maintenance-association-mep/mep-id	
C	boolean  default 'false'	The administrative state of the MEP. TRUE indicates that the MEP is to functional normally, and FALSE indicates that it is to cease functioning.

## 2.6 classifiers commands

### 2.6.1 Command Tree

```

|-- classifiers classifier-entry <A>
|  |-- any-frame
|  |-- classifier-action-entry-cfg <B>
|     |-- bac-color <C>
|     |-- dei-marking-cfg dei-marking-list <C>
|        |-- dei-from-frame-tag <D>
|        |-- dei-value <D>
|     |-- discard
|     |-- pass
|     |-- pbit-marking-cfg pbit-marking-list <C>
|        |-- pbit-from-frame-tag <D>
|        |-- pbit-value <D>
|     |-- policing policing-profile <C>
|     |-- policing-traffic-class <C>
|     |-- rate-limit-frames burst-size <C>
|     |-- rate-limit-frames rate <C>
|     |-- scheduling-traffic-class <C>
|-- dei-marking-list <B>
|  |-- dei-value <C>
|-- description <B>
|-- enhanced-filter-name <B>
|-- filter-operation <B>
|-- ip-common (Presence)
|  |-- dscp <B>
|  |-- dscp-range <B>
|  |-- protocol <B>
|-- match-criteria any-protocol
|-- match-criteria dei-marking-list <B>
|  |-- dei-value <C>
|-- match-criteria dscp-range <B>
|-- match-criteria match-all
|-- match-criteria pbit-marking-list <B>
|  |-- pbit-value <C>
|-- match-criteria protocol <B>
|-- match-criteria tag <B>
|  |-- in-dei <C>
|  |-- in-pbit-list <C>
|-- match-criteria untagged
|-- metered-color <B>
|-- metered-flow <B>
|-- pbit-marking-list <B>
|  |-- pbit-value <C>
|-- protocol <B>
|-- vlans (Presence)
|  |-- tag <B>
|     |-- in-dei <C>
|     |-- in-pbit-list <C>
|-- untagged

```

## 2.6.2 Commands

classifiers classifier-entry <A> any-frame

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	Classifier name.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> bac-color <C>

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	enumeration One of: green   yellow   red	When: ../bbf-qos-clc:action-type="bbf-qos-plc:bac-color"  Defines the packet color for color aware BAC queuing.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> dei-marking-cfg dei-marking-list  
<C> dei-from-frame-tag <D>

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64}	Classifier name.

	{pattern = [ --]*}	
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint8	The index associated with a DEI value.
D	uint8 [0..1]	Specifies from which input VLAN tag the DEI field MUST be copied to the frame's metadata marking list.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> dei-marking-cfg dei-marking-list <C> dei-value <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint8	The index associated with a DEI value.
D	uint8 [0..1]	A DEI value to be inserted in the DEI bit of a packet's VLAN tag or as match criteria for another classifier associated with the same QoS policy.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> discard

**Input Parameters:**

Parameter	Type	Description
A	string	Classifier name.

	{length = 1..64} {pattern = [ ~~]*}	
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> pass

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~~]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> pbit-marking-cfg pbit-marking-list  
<C> pbit-from-frame-tag <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~~]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint8	The index associated with a p-bit value.

D	uint8 [0..1]	Specifies from which input VLAN tag the p-bits field MUST be copied to the frame's metadata marking list.
---	-----------------	---

classifiers classifier-entry <A> classifier-action-entry-cfg <B> pbit-marking-cfg pbit-marking-list <C> pbit-value <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~~]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint8	The index associated with a p-bit value.
D	uint8 [0..7]	A p-bit value to be inserted in the p-bits of a packet's VLAN tag or as match criteria for another classifier associated with the same QoS policy.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> policing policing-profile <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~~]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	leafref	The name of the referenced policing-profile.

	: /bbf-qos-plc:policing-profiles/bbf-qos-plc:policing-profile/bbf-qos-plc:name	
--	--	--

classifiers classifier-entry <A> classifier-action-entry-cfg <B> policing-traffic-class <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint32 [0..7]	Defines the traffic class for policing.  This classifier action is used by policer types 'two-rate-three-color-marker-with-cos' and 'two-rate-three-color-marker-mef-with-cos' to prioritize the traffic in token buckets during Policing.  Traffic can be assigned with a 'policing-traffic-class' using its Class of Service(CoS) parameters like 'pbit/dei'. Example: pbit to policing-traffic-class mapping.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> rate-limit-frames burst-size <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking	This defines the action type.

	policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	
C	uint32 [1..3000]	Unit: frames  The burst-size together with the frame-rate define a mechanism to control a frame rate.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> rate-limit-frames rate <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint32 [1..3000]	Unit: frames per second  Limits the number of frames per second to this number.

classifiers classifier-entry <A> classifier-action-entry-cfg <B> scheduling-traffic-class <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	identityref One of: bac-color   dei-marking   discard   dscp-marking   flow-color   pass   pbit-marking   policing   policing-traffic-class   rate-limit-frames   scheduling-traffic-class	This defines the action type.
C	uint32	When: ../action-type=

	[0..7]	'bbf-qos-cls:scheduling-traffic-class' Define the traffic class for scheduling.
--	--------	--

classifiers classifier-entry <A> dei-marking-list <B> dei-value <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	Classifier name.
B	uint8	The index associated with a DEI value.
C	uint8 [0..1]	A DEI value to be used as match criteria.

classifiers classifier-entry <A> description <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	Classifier name.
B	string {length = 0..64} {pattern = [ --~]*}	Description of the class template.

classifiers classifier-entry <A> enhanced-filter-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	Classifier name.
B	leafref	A reference to an enhanced filter.

	: /bbf-qos-filt:filters/bbf-qos-enhfilt:enhanced-filter/bbf-qos-enhfilt:name	
--	--	--

classifiers classifier-entry <A> filter-operation <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	identityref One of: match-all-filter   match-any-filter  default 'bbf-qos-cls:match-all-filter'	Filters are applicable as any or all filters.

classifiers classifier-entry <A> ip-common

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.

classifiers classifier-entry <A> ip-common dscp <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	uint8 [0..63]	Differentiated Services Code Point.

classifiers classifier-entry <A> ip-common dscp-range <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	union string {pattern = (([0-9][0-5][0-9][6][0-3])(-[0-9][0-5][0-9][6][0-3]))?((,[0-9][0-5][0-9][6][0-3])(-[0-9][0-5][0-9][6][0-3]))?)*}  enumeration One of: any	String identifying the DSCP values and/or range.

classifiers classifier-entry <A> ip-common protocol <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	uint8	Internet Protocol number. Refers to the protocol of the payload. In IPv6, this field is known as 'next-header', and if extension headers are present, the protocol is present in the 'upper-layer' header.

classifiers classifier-entry <A> match-criteria any-protocol

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.

classifiers classifier-entry <A> match-criteria dei-marking-list <B> dei-value <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	uint8	The index associated with a DEI value.
C	uint8 [0..1]	A DEI value to be used as match criteria from the output of another classifier associated with the same QoS policy.

classifiers classifier-entry <A> match-criteria dscp-range <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	union string {pattern = (([0-9][0-5][0-9][6][0-3])-( [0-9][0-5][0-9][6][0-3]))?(,([0-9][0-5][0-9][6][0-3])-( [0-9][0-5][0-9][6][0-3]))?)*}  enumeration One of: any	String identifying the DSCP values and/or range.

classifiers classifier-entry <A> match-criteria match-all

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
---	--	------------------

classifiers classifier-entry <A> match-criteria pbit-marking-list <B> pbit-value <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	uint8	The index associated with a p-bit value.
C	uint8 [0..7]	A p-bit value to be used as match criteria from the output of another classifier associated with the same QoS policy.

classifiers classifier-entry <A> match-criteria protocol <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	enumeration One of: igmp   mld   dhcpv4   dhcpv6   pppoe- discovery   icmpv6   nd   arp   cfm   dot1x   lacp	Defines the protocols which will be matched.

classifiers classifier-entry <A> match-criteria tag <B> in-dei <C>

**Input Parameters:**

Parameter	Type	Description
A	string	Classifier name.

	{length = 1..64} {pattern = [ ~~]*}	
B	uint8 [0..1]	The index into the tag stack, outermost tag first.
C	uint8 [0..1]	<p>Filter containing DEI bit value(s) to be matched with the values of the corresponding packet fields. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. For example, an untagged packet does not contain a DEI bit, hence this packet will not match a specified DEI bit value. In case the leaf is unknown, no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the DEI bit of the outermost VLAN tag of the packet, the element with index 1 is used to match with the DEI bit of the second VLAN tag of the packet.</p>

classifiers classifier-entry <A> match-criteria tag <B> in-pbit-list <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~~]*}	Classifier name.
B	uint8 [0..1]	The index into the tag stack, outermost tag first.
C	string {pattern = ([0-7](-[0-7])?([0-7](-[0-7])?)*)}	Filter containing P-bit value(s) to be matched with the value of the corresponding packet field. The list of values form an OR condition: in case the value of the packet field matches with one of the values of the leaf then there is a match. In case the leaf specifies a set of values and none of them appear in the packet, then there is no match. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. For example, an

		<p>untagged packet does not contain P-bits, hence this packet will not match a specified P-bit value. In case the leaf is an empty list, or unknown, then no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the P-bits of outermost VLAN tag of the packet, the element with index 1 is used to match with the P-bits of the second VLAN tag of the packet.</p>
--	--	--

classifiers classifier-entry <A> match-criteria untagged

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Classifier name.

classifiers classifier-entry <A> metered-color <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Classifier name.
B	boolean	Matches the frames which are color-marked after policing by certain policer types.

classifiers classifier-entry <A> metered-flow <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	boolean	Matches the frames which are metered by policer.

classifiers classifier-entry <A> pbit-marking-list <B> pbit-value <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	uint8	The index associated with a metadata P-bit value.
C	uint8 [0..7]	This leaf-list provides a set of possible P-bit values as a criterion for classifying packets.  There is a match if the identified packet 's metadata P-bit is one of the values specified in the leaf-list.

classifiers classifier-entry <A> protocol <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Classifier name.
B	enumeration One of: igmp   mld   dhcpv4   dhcpv6   pppoe- discovery   icmpv6   nd   arp   cfm   dot1x   lACP	This leaf-list provides a set of protocols as a criterion for classifying packets with the intention to apply actions at matching condition.  There is a match if the packet is of one of the protocols specified in the leaf-list. If the leaf-list is not configured, then the protocol

		is not a criterion and then 'all packets match'.
--	--	--

classifiers classifier-entry <A> vlans

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Classifier name.

classifiers classifier-entry <A> vlans tag <B> in-dei <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Classifier name.
B	uint8 [0..1]	The index into the tag stack with the outermost tag represented by index 0.
C	uint8 [0..1]	<p>Filter containing DEI bit value(s) to be matched with the values of the corresponding packet fields. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. E.g. an untagged packet does not contain a DEI bit, hence this packet will not match a specified DEI bit value. In case the leaf is unknown, no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the DEI bit of the outermost VLAN tag of the packet, the element with index 1 is used to match with the DEI bit of the second VLAN tag of the packet.</p>

classifiers classifier-entry <A> vlans tag <B> in-pbit-list <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Classifier name.
B	uint8 [0..1]	The index into the tag stack with the outermost tag represented by index 0.
C	string {pattern = ([0-7](-[0-7])?([0-7](-[0-7])?)*)}	<p>Filter containing P-bit value(s) to be matched with the value of the corresponding packet field. The list of values form an OR condition: in case the value of the packet field matches with one of the values of the leaf then there is a match. In case the leaf specifies a set of values and none of them appear in the packet, then there is no match. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. E.g. an untagged packet does not contain P-bits, hence this packet will not match a specified P-bit value. In case the leaf is an empty list, or unknown, then no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the P-bits of outermost VLAN tag of the packet, the element with index 1 is used to match with the P-bits of the second VLAN tag of the packet.</p>

classifiers classifier-entry <A> vlans untagged

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ -~]*}	Classifier name.
---	--	------------------

## 2.7 confdConfig commands

### 2.7.1 Command Tree

```
|-- confdConfig aaa (Presence)
|   |-- auditUserName <A>
|   |-- authenticationCallback (Presence)
|   |   |-- enabled <A>
|   |-- authOrder <A>
|   |-- authorization (Presence)
|   |   |-- callback (Presence)
|   |   |   |-- enabled <A>
|   |   |-- enabled <A>
|   |   |-- nacmCompliant <A>
|   |-- defaultGroup <A>
|   |-- expirationWarning <A>
|   |-- externalAuthentication (Presence)
|   |   |-- enabled <A>
|   |   |-- executable <A>
|   |   |-- includeExtra <A>
|   |   |-- useBase64 <A>
|   |-- externalValidation (Presence)
|   |   |-- enabled <A>
|   |   |-- executable <A>
|   |   |-- includeExtra <A>
|   |   |-- useBase64 <A>
|   |-- localAuthentication (Presence)
|   |   |-- enabled <A>
|   |-- maxPasswordLength <A>
|   |-- pam (Presence)
|   |   |-- enabled <A>
|   |   |-- service <A>
|   |   |-- timeout <A>
|   |-- rest (Presence)
|   |   |-- authCacheTTL <A>
|   |   |-- enableAuthCacheClientIp <A>
|   |-- sshLoginGraceTime <A>
|   |-- sshMaxAuthTries <A>
|   |-- sshPubkeyAuthentication <A>
|   |-- validationCallback (Presence)
|   |   |-- enabled <A>
|   |-- validationOrder <A>
|-- confdConfig cli (Presence)
|   |-- actionCallNoListInstance <A>
|   |-- addErrorPrefixSuffix <A>
|   |-- addExtraTableSpacing <A>
|   |-- allOrNothingLoad <A>
|   |-- allowAbbrevCmds <A>
|   |-- allowAbbrevCmdsOnLoad <A>
|   |-- allowAbbrevEnums <A>
|   |-- allowAbbrevKeys <A>
|   |-- allowAbbrevParamNames <A>
|   |-- allowAllAsWildcard <A>
```

```
-- allowCaseInsensitiveEnums <A>
-- allowImplicitWildcard <A>
-- allowOldStyleModeCmds <A>
-- allowOverwriteOnCopy <A>
-- allowParenQuotes <A>
-- allowRangeExpression <A>
-- allowRangeExpressionAllTypes <A>
-- allowTableCellWrap <A>
-- allowTableOverflow <A>
-- allowWildcard <A>
-- asyncPromptRefresh <A>
-- auditLogMode <A>
-- autocommitLoad <A>
-- autocommitLoadChunkSize <A>
-- autoWizard (Presence)
  |-- enabled <A>
-- banner <A>
-- bannerFile <A>
-- bypassAllowAbbrevKeys <A>
-- cAbortedPrefix <A>
-- cAlignLeafValues <A>
-- caseInsensitive <A>
-- caseInsensitiveKeys <A>
-- cConfigAlignLeafValues <A>
-- cErrorPrefix <A>
-- cExtendedCmdSearch <A>
-- cHelp <A>
-- cmdAAAFForAutowizard <A>
-- cModeExitFormat <A>
-- columnStats <A>
-- commandTimeout <A>
-- commitActivityClock <A>
-- commitMessage <A>
-- commitMessageFormat <A>
-- commitRetryTimeout <A>
-- compactShow <A>
-- compactStatsShow <A>
-- compactTable <A>
-- completionListLine <A>
-- completionMetaInfo <A>
-- completionShowMax <A>
-- completionShowOldVal <A>
-- compListCompact <A>
-- confirmUncommittedOnExit <A>
-- continueOnErrorCmdStack <A>
-- cPrivate <A>
-- cPrompt1 <A>
-- cPrompt2 <A>
-- cRestrictiveNo <A>
-- cSilentNo <A>
-- cStrictAAA <A>
-- cStylePromptInJStyle <A>
```

[-- cSuppressCmdSearch <A>](#)  
[-- cTab <A>](#)  
[-- cTabInfo <A>](#)  
[-- cWarningPrefix <A>](#)  
[-- defaultDisplayLevel <A>](#)  
[-- defaultLeafListStyle <A>](#)  
[-- defaultPrefix <A>](#)  
[-- defaultTableBehavior <A>](#)  
[-- dequoteHidden <A>](#)  
[-- disableIdleTimeoutOnCmd <A>](#)  
[-- disablePipe <A>](#)  
[-- disablePipeConfig <A>](#)  
[-- displayEmptyConfigContainers <A>](#)  
[-- displayNonPresenceAttributes <A>](#)  
[-- docWrap <A>](#)  
[-- editWrapMode <A>](#)  
[-- enableCliCache <A>](#)  
[-- enabled <A>](#)  
[-- enableDisplayGroups <A>](#)  
[-- enableDisplayLevel <A>](#)  
[-- enableLoadMerge <A>](#)  
[-- enableLoadMergeLeafList <A>](#)  
[-- enterSubmodeOnLeaf <A>](#)  
[-- enumKeyInfo <A>](#)  
[-- escapeBackslash <A>](#)  
[-- execNavigationCmds <A>](#)  
[-- exitConfigModeOnCtrlC <A>](#)  
[-- exitModeOnEmptyRange <A>](#)  
[-- expandAliasEscape <A>](#)  
[-- expandAliasOnCompletion <A>](#)  
[-- explicitSetCreate <A>](#)  
[-- externalActionErrorMsg <A>](#)  
[-- forcedExitFormat <A>](#)  
[-- hideDotFiles <A>](#)  
[-- historyMaxSize <A>](#)  
[-- historyRemoveDuplicates <A>](#)  
[-- historySave <A>](#)  
[-- idleTimeout <A>](#)  
[-- ignoreLeadingWhitespace <A>](#)  
[-- ignoreShowWithDefaultOnDiff <A>](#)  
[-- ignoreSubsystemFailures <A>](#)  
[-- inconsistentDatabaseSuffix <A>](#)  
[-- indentTemplates <A>](#)  
[-- infoOnMatch <A>](#)  
[-- infoOnSpace <A>](#)  
[-- infoOnTab <A>](#)  
[-- inheritPaginate <A>](#)  
[-- instanceDescription <A>](#)  
[-- invalidDataString <A>](#)  
[-- jAbortedPrefix <A>](#)  
[-- jAlignLeafValues <A>](#)  
[-- jAllowDeleteAll <A>](#)

```
-- jEnableLoadMergeLeafList <A>
-- jErrorPrefix <A>
-- jExtendedShow <A>
-- jHideHelp <A>
-- jShowCR <A>
-- jShowTableRecursive <A>
-- jShowUnset <A>
-- jShowUnsetText <A>
-- jStatusFormat <A>
-- jWarningPrefix <A>
-- laxBarQuoting <A>
-- leafPrompting <A>
-- loadActivityClock <A>
-- mapActions <A>
-- matchCompletionsFormat <A>
-- matchCompletionsSearchLimit <A>
-- maxLineLength <A>
-- messageFormat <A>
-- messageMaxSize <A>
-- messageQueueSize <A>
-- messageWordWrap <A>
-- mixedMode <A>
-- modelInfoInAAA <A>
-- modelInfoInAudit <A>
-- modelNameStyle <A>
-- moreBufferLines <A>
-- multiPatternOperation <A>
-- newInsert <A>
-- newLogout <A>
-- noEmbeddedComments <A>
-- noFollowIncompleteCommand <A>
-- noMatchCompletionsFormat <A>
-- oldDetailsArg <A>
-- orderedShowConfig <A>
-- pipeHelpMode <A>
-- possibleCompletionsFormat <A>
-- prettifyStatsName <A>
-- prioritizeSubmodeCmds <A>
-- prompt1 <A>
-- prompt2 <A>
-- promptEnumLimit <A>
-- promptHostnameDelimiter <A>
-- promptSessionsCLI <A>
-- quickSshTeardown <A>
-- quoteStyle <A>
-- reallocateOperTrans <A>
-- reconfirmHidden <A>
-- reportInvalidCompletionInput <A>
-- resetScreenAfterMore <A>
-- restrictedFileAccess <A>
-- restrictedFileRegexp <A>
-- rollbackAAA <A>
```

```
-- rollbackMax <A>
-- rollbackNumbering <A>
-- rollbackNumberingInitial <A>
-- safeScriptExecution <A>
-- showAllNs <A>
-- showAnnotations <A>
-- showCommitProgress <A>
-- showDefaults <A>
-- showDescription <A>
-- showEditors <A>
-- showEmptyContainers <A>
-- showKeyName <A>
-- showLogDirectory <A>
-- showMatchBeforePossible <A>
-- showNedErrorAsInfo <A>
-- showPipe <A>
-- showPipeConfig <A>
-- showServiceMetaData <A>
-- showSubsystemMessages <A>
-- showTableLabelsIfMultiple <A>
-- showTags <A>
-- singleElemPattern <A>
-- smartRenameFiltering <A>
-- sortLocalCmds <A>
-- sortShowElems <A>
-- sortSubmodeCmds <A>
-- spaceCompletion (Presence)
  -- enabled <A>
-- ssh (Presence)
  -- banner <A>
  -- bannerFile <A>
  -- dscp <A>
  -- enabled <A>
  -- extralPorts <A>
  -- ip <A>
  -- netns <A>
  -- port <A>
  -- vrf <A>
-- startupScriptNonInteractive <A>
-- stopLoadOnError <A>
-- strictRefsOnLoad <A>
-- style <A>
-- supportQuotedEOL <A>
-- suppressBurstErrors <A>
-- suppressCommitMessages (Presence)
  -- context <A>
-- suppressFastShow <A>
-- suppressNedErrors <A>
-- suppressRangeKeyword <A>
-- tabExtend <A>
-- tableLabel <A>
-- tableLookAhead <A>
```

```
|-- tableOverflowTruncate <A>
|-- templateFilter <A>
|   |-- callback <B>
|-- timestamp (Presence)
|   |-- clock24 <A>
|   |-- enabled <A>
|   |-- format <A>
|-- timezone <A>
|-- topLevelCmdsInSubMode <A>
|-- transactionCtrlCmds <A>
|-- transactions <A>
|-- trimDefaultSave <A>
|-- trimDefaultShow <A>
|-- turboParser reportNoExists <A>
|-- unifiedHistory <A>
|-- useDoubleDotRanges <A>
|-- useExposeNsPrefix <A>
|-- useShortEnabled <A>
|-- utcOffset <A>
|-- waitLockedConfigMode <A>
|-- whoHistoryDateTimeFormat <A>
|-- whoShowMode <A>
|-- withDefaults <A>
|-- wrapInfo <A>
|-- wrapPrompt <A>
|-- confdConfig encryptedStrings (Presence)
|   |-- AESC128 (Presence)
|   |   |-- key <A> (Mandatory)
|   |   |-- initVector <A>
|   |-- DES3CBC (Presence)
|   |   |-- key1 <A> (Mandatory)
|   |   |-- key2 <A> (Mandatory)
|   |   |-- key3 <A> (Mandatory)
|   |   |-- initVector <A>
|   |-- externalKeys (Presence)
|   |   |-- command <A> (Mandatory)
|   |   |-- commandArgument <A>
|   |   |-- commandTimeout <A>
|-- confdConfig hideGroup <A>
|   |-- callback <B>
|   |-- password <B>
|-- confdConfig logs (Presence)
|   |-- auditLog (Presence)
|   |   |-- enabled <A>
|   |   |-- file (Presence)
|   |   |   |-- name <A> (Mandatory)
|   |   |   |-- enabled <A>
|   |   |-- syslog (Presence)
|   |   |   |-- enabled <A>
|   |   |   |-- facility <A>
|-- auditLogCommit <A>
|-- auditLogCommitDefaults <A>
```

```

|-- auditNetworkLog (Presence)
|   |-- enabled <A>
|   |-- file (Presence)
|       |-- name <A> (Mandatory)
|       |-- enabled <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|-- confdLog (Presence)
|   |-- enabled <A>
|   |-- file (Presence)
|       |-- name <A> (Mandatory)
|       |-- enabled <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|-- developerLog (Presence)
|   |-- enabled <A>
|   |-- file (Presence)
|       |-- name <A> (Mandatory)
|       |-- enabled <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|-- developerLogLevel <A>
|-- errorLog (Presence)
|   |-- filename <A> (Mandatory)
|   |-- debug (Presence)
|       |-- enabled <A>
|       |-- level <A>
|       |-- tag <A>
|   |-- enabled <A>
|   |-- maxSize <A>
|-- jsonrpcLog (Presence)
|   |-- enabled <A>
|   |-- file (Presence)
|       |-- name <A> (Mandatory)
|       |-- enabled <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|-- netconfLog (Presence)
|   |-- enabled <A>
|   |-- file (Presence)
|       |-- name <A> (Mandatory)
|       |-- enabled <A>
|   |-- logReplyStatus <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|-- netconfTraceLog (Presence)
|   |-- filename <A> (Mandatory)

```

```
|-- enabled <A>
|-- format <A>
|-- progressTrace (Presence)
|   |-- dir <A> (Mandatory)
|   |-- enabled <A>
|-- snmpGatewayLog (Presence)
|   |-- filename <A> (Mandatory)
|   |-- enabled <A>
|   |-- northbound <A>
|   |-- southbound <A>
|-- snmpLog (Presence)
|   |-- enabled <A>
|   |-- file (Presence)
|       |-- name <A> (Mandatory)
|       |-- enabled <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|-- snmpLogLevel <A>
|-- syslogConfig (Presence)
|   |-- facility <A>
|   |-- syslogServers (Presence)
|       |-- server <A>
|           |-- enabled <B>
|           |-- facility <B>
|           |-- port <B>
|           |-- version <B>
|   |-- udp (Presence)
|       |-- host <A> (Mandatory)
|       |-- enabled <A>
|       |-- port <A>
|   |-- version <A>
|-- webuiAccessLog (Presence)
|   |-- dir <A> (Mandatory)
|   |-- enabled <A>
|   |-- syslog (Presence)
|       |-- enabled <A>
|       |-- facility <A>
|   |-- trafficLog <A>
|-- webuiBrowserLog (Presence)
|   |-- filename <A> (Mandatory)
|   |-- enabled <A>
|-- xpathTraceLog (Presence)
|   |-- filename <A> (Mandatory)
|   |-- enabled <A>
|-- confdConfig netconf (Presence)
|   |-- enabled <A>
|   |-- extendedSessions <A>
|   |-- idleTimeout <A>
|   |-- maxBatchProcesses <A>
|   |-- rpcErrors <A>
|   |-- sendDefaults <A>
```

```
|-- transport (Presence)
|  |-- ssh (Presence)
|    |-- dscp <A>
|    |-- enabled <A>
|    |-- extralpPorts <A>
|    |-- ip <A>
|    |-- netns <A>
|    |-- port <A>
|    |-- vrf <A>
|  |-- sshCallHomeExecutable <A>
|  |-- tcp (Presence)
|    |-- dscp <A>
|    |-- enabled <A>
|    |-- extralpPorts <A>
|    |-- ip <A>
|    |-- netns <A>
|    |-- port <A>
|    |-- vrf <A>
|  |-- writeTimeout <A>
|-- confdConfig notifications (Presence)
|  |-- eventStreams stream <A>
|    |-- description <B> (Mandatory)
|    |-- replaySupport <B> (Mandatory)
|    |-- builtinReplayStore (Presence)
|      |-- dir <B> (Mandatory)
|      |-- maxFiles <B> (Mandatory)
|      |-- maxSize <B> (Mandatory)
|      |-- enabled <B>
|-- confdConfig opcache (Presence)
|  |-- timeout <A> (Mandatory)
|  |-- enabled <A>
|-- confdConfig parserLimits (Presence)
|  |-- maxAttributeCount <A>
|  |-- maxAttributeLength <A>
|  |-- maxAttributeValueLength <A>
|  |-- maxDataLength <A>
|  |-- maxTagLength <A>
|  |-- maxXmlnsCount <A>
|  |-- maxXmlnsPrefixLength <A>
|  |-- maxXmlnsValueLength <A>
|-- confdConfig proxyForwarding (Presence)
|  |-- autoLogin <A>
|  |-- proxy <A>
|    |-- address <B> (Mandatory)
|    |-- cli (Presence)
|      |-- ssh port <B>
|    |-- netconf (Presence)
|      |-- ssh port <B>
|      |-- tcp port <B>
|-- confdConfig rest (Presence)
|  |-- customHeaders (Presence)
|    |-- header <A>
```

```
|-- value <B> (Mandatory)
|-- enabled <A>
|-- showHidden <A>
|-- confdConfig restconf (Presence)
|-- customHeaders (Presence)
|   |-- header <A>
|       |-- value <B> (Mandatory)
|-- enabled <A>
|-- requireModuleName (Presence)
|   |-- enabled <A>
|-- rootResource <A>
|-- schemaServerUrl <A>
|-- tokenResponse (Presence)
|   |-- tokenCookie (Presence)
|       |-- directives <A>
|       |-- name <A>
|-- xAuthToken <A>
|-- confdConfig sessionLimits (Presence)
|   |-- configSessionLimit <A>
|       |-- maxSessions <B> (Mandatory)
|-- maxConfigSessions <A>
|-- maxSessions <A>
|-- sessionLimit <A>
|   |-- maxSessions <B> (Mandatory)
|-- confdConfig snmpAgent (Presence)
|   |-- authenticationFailureNotifyName <A>
|   |-- candidate (Presence)
|       |-- maxLockWait <A>
|       |-- pendingChangesAction <A>
|-- contexts <A>
|-- dropWhenInUse <A>
|-- dscp <A>
|-- enabled <A>
|-- extralPPorts <A>
|-- ip <A>
|-- mibs (Presence)
|   |-- file <A>
|   |-- fromLoadPath <A>
|-- netns <A>
|-- port <A>
|-- sessionIgnorePort <A>
|-- snmpEngine (Presence)
|   |-- snmpEngineID <A> (Mandatory)
|   |-- snmpEngineMaxMessageSize <A>
|-- snmpVersions (Presence)
|   |-- v1 <A>
|   |-- v2c <A>
|   |-- v3 <A>
|-- system (Presence)
|   |-- sysDescr <A>
|   |-- sysObjectID <A>
|   |-- sysORTable (Presence)
```

```
|-- sysOREntry <A>
|   |-- sysORDescr <B> (Mandatory)
|   |-- sysORID <B> (Mandatory)
|-- sysServices <A>
|-- temporaryStorageTime <A>
|-- vrf <A>
|-- confdConfig snmpgw (Presence)
|   |-- agent <A>
|       |-- ip <B> (Mandatory)
|       |-- community <B>
|       |-- community_bin <B>
|       |-- enabled <B>
|       |-- forwardNotifStream <B>
|       |-- module <B>
|       |-- netns <B>
|       |-- port <B>
|       |-- retries <B>
|       |-- subscriptionId <B>
|       |-- timeout <B>
|       |-- version <B>
|       |-- vrf <B>
|   |-- enabled <A>
|   |-- rowCacheMaxAge <A>
|   |-- rowCacheMaxSize <A>
|   |-- trapPort <A>
|-- confdConfig ssh (Presence)
|   |-- algorithms (Presence)
|       |-- dhGroup (Presence)
|           |-- maxSize <A>
|           |-- minSize <A>
|       |-- encryption <A>
|       |-- kex <A>
|       |-- mac <A>
|       |-- serverHostKey <A>
|   |-- clientAliveCountMax <A>
|   |-- clientAliveInterval <A>
|   |-- idleConnectionTimeout <A>
|-- confdConfig subagents (Presence)
|   |-- subagent <A>
|       |-- mount_path <B> (Mandatory)
|       |-- disableSubtreeOptimization <B>
|       |-- enabled <B>
|       |-- mount_node <B>
|       |-- ssh (Presence)
|           |-- ip <B> (Mandatory)
|           |-- password <B> (Mandatory)
|           |-- user <B> (Mandatory)
|           |-- netns <B>
|           |-- port <B>
|           |-- vrf <B>
|       |-- tcp (Presence)
|           |-- confdAuth_group <B> (Mandatory)
```

```

|-- confdAuth user <B> (Mandatory)
|-- ip <B> (Mandatory)
|-- netns <B>
|-- port <B>
|-- vrf <B>
|-- confdConfig webui (Presence)
|-- absoluteTimeout <A>
|-- allowSymlinks <A>
|-- audit <A>
|-- cacheRefreshSecs <A>
|-- cgi (Presence)
|-- dir <A>
|-- enabled <A>
|-- maxRequestLength <A>
|-- php (Presence)
|-- enabled <A>
|-- requestFilter <A>
|-- customDir <A>
|-- customHeaders (Presence)
|-- header <A>
|-- value <B> (Mandatory)
|-- disableAuth (Presence)
|-- dir <A>
|-- docroot <A>
|-- enabled <A>
|-- idleTimeout <A>
|-- loginDir <A>
|-- matchHostName <A>
|-- maxRefEntries <A>
|-- rateLimiting <A>
|-- serverName <A>
|-- transport (Presence)
|-- ssl (Presence)
|-- caCertFile <A>
|-- certFile <A>
|-- ciphers <A>
|-- depth <A>
|-- disableNonAuthRedirect <A>
|-- dscp <A>
|-- ellipticCurves <A>
|-- enabled <A>
|-- extralpPorts <A>
|-- ip <A>
|-- keyFile <A>
|-- netns <A>
|-- port <A>
|-- protocols <A>
|-- readFromDb <A>
|-- redirect <A>
|-- verify <A>
|-- vrf <A>
|-- tcp (Presence)

```

```

|-- disableNonAuthRedirect <A>
|-- dscp <A>
|-- enabled <A>
|-- extralPorts <A>
|-- ip <A>
|-- netns <A>
|-- port <A>
|-- redirect <A>
|-- vrf <A>
|-- unauthenticatedMessageLimit <A>
|-- webuiIndexUrl <A>
|-- X-Frame-Options <A>

```

## 2.7.2 Commands

confdConfig aaa

confdConfig aaa auditUserName <A>

### Input Parameters:

Parameter	Type	Description
A	enumeration One of: always   known   never   truncated  default 'always'	<p>Controls the logging of the user name when a failed authentication attempt is logged to the audit log.</p> <p>If set to 'always', the user name is always logged.</p> <p>If set to 'known', the user name is only logged when it is known to be valid (i.e. when attempting localAuthentication and the user exists in /aaa/authentication/users), otherwise it is logged as '[withheld]'.</p> <p>If set to 'never', the user name is always logged as '[withheld]'.</p> <p>If set to 'truncated', the user name is always logged but will be truncated to 60 characters suffixed by the number of characters removed.</p>

confdConfig aaa authenticationCallback

confdConfig aaa authenticationCallback enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', ConfD will invoke an application callback when authentication has succeeded or failed. The callback may reject an otherwise successful authentication. If the callback has not been registered, all authentication attempts will fail. See confd_lib_dp(3) for the callback details.

confdConfig aaa authOrder <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>By default the AAA system will try to authenticate a user in the following order. (1) localAuthentication i.e. the user is found inside /aaa/authentication/users. (2) pam - i.e PAM authentication - if enabled - is tried. (3) externalAuthentication i.e. an external program is invoked to authenticate the user.</p> <p>The default is thus:</p> <p>'localAuthentication pam externalAuthentication'</p> <p>To change the order - change this string. For example in order to always try pam authentication before local auth set it to: 'pam localAuthentication'</p>

confdConfig aaa authorization

confdConfig aaa authorization callback

confdConfig aaa authorization callback enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', ConfD will invoke application callbacks for authorization. If the callbacks have not been registered, all authorization checks will be rejected. See confd_lib_dp(3) for the callback details.

confdConfig aaa authorization enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	When set to 'false', all authorization checks are turned off, similar to the -noaaa flag in confd_cli.

confdConfig aaa authorization nacmCompliant <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	In earlier versions, ConfD did not fully comply with the NACM specification: the 'module-name' leaf was required to match toplevel nodes, but it was not considered for the node being accessed. If this leaf is set to 'false', this non-compliant behavior remains - this setting is only provided for backward

		compatibility with existing rule sets, and is not recommended.
--	--	--

confdConfig aaa defaultGroup <A>

**Input Parameters:**

Parameter	Type	Description
A	string	If the group of a user cannot be found in the AAA sub-system, a logged in user will end up as a member of the default group (if specified). If a user logs in and the group membership cannot be established, the user will have zero access rights.

confdConfig aaa expirationWarning <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: ignore   display   prompt  default 'ignore'	<p>When PAM or external authentication is used, the authentication mechanism may give a warning that the user's password is about to expire. This parameter controls how ConfD processes that warning message.</p> <p>If set to 'ignore', the warning is ignored.</p> <p>If set to 'display', interactive user interfaces will display the warning message at login time.</p> <p>If set to 'prompt', interactive user interfaces will display the warning message at login time, and require that the user acknowledges the message before proceeding.</p>

confdConfig aaa externalAuthentication

confdConfig aaa externalAuthentication enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', external authentication is used.

confdConfig aaa externalAuthentication executable <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>If we enable external authentication, an executable on the local host can be launched to authenticate a user. The executable will receive the username and the cleartext password on its standard input. The format is '[\${USER};\${PASS};]\n'. For example if user is 'bob' and password is 'secret', the executable will receive the string '[bob;secret;]' followed by a newline on its standard input. The program must parse this line.</p> <p>The task of the external program, which for example could be a RADIUS client, is to authenticate the user and also provide the user to groups mapping. Refer to the External authentication section of the AAA chapter in the User Guide for the details of how the program should report the result back to ConfD.</p>

confdConfig aaa externalAuthentication includeExtra <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	When set to 'true', additional information items will be provided to the executable:

	default 'false'	source IP address and port, context, and protocol. I.e. the complete format will be '[\${USER}];\${PASS};\${IP};\${PORT};\${CONTEXT};\${PROTO};]\n'. Example: '[bob;secret;192.168.1.1;12345;cli;ssh;]\n'.
--	-----------------	--

confdConfig aaa externalAuthentication useBase64 <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', \${USER} and \${PASS} in the data passed to the executable will be base64-encoded, allowing e.g. for the password to contain ';' characters. For example if user is 'bob' and password is 'secret', the executable will receive the string '[Ym9i;c2VjcmV0;]' followed by a newline.

confdConfig aaa externalValidation

confdConfig aaa externalValidation enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', external token validation is used.

confdConfig aaa externalValidation executable <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>If we enable external token validation, an executable on the local host can be launched to validate a user. The executable will receive a cleartext token on its standard input. The format is '\${TOKEN};\n'. For example if the token is '7ea345123', the executable will receive the string '7ea345123;' followed by a newline on its standard input. The program must parse this line.</p> <p>The task of the external program, which for example could be a FUSION client, is to validate the token and also provide the token to user and groups mappings. Refer to the External validation section of the AAA chapter in the User Guide for the details of how the program should report the result back to ConfD.</p>

confdConfig aaa externalValidation includeExtra <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>When set to 'true', additional information items will be provided to the executable: source IP address and port, context, and protocol. I.e. the complete format will be '\${TOKEN};\${IP};\${PORT};\${CONTEXT};\${PROTO};\n'. Example: '7ea345123;192.168.1.1;12345;cli;ssh;\n'.</p>

confdConfig aaa externalValidation useBase64 <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	<p>When set to 'true', \${TOKEN} in the data passed to the executable will be base64-</p>

	default 'false'	encoded, allowing e.g. for the token to contain ';' characters.
--	-----------------	---

confdConfig aaa localAuthentication

confdConfig aaa localAuthentication enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	When set to 'true', ConfD uses local authentication. That means that the user data kept in the aaa namespace is used to authenticate users. When set to 'false' some other authentication mechanism such as PAM or external authentication must be used.

confdConfig aaa maxPasswordLength <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16  default '32'	<p>The maximum length of the cleartext password for all forms of password authentication. Authentication attempts using a longer password are rejected without attempting verification.</p> <p>The hashing algorithms used for password verification, in particular those based on sha-256 and sha-512, require extremely high amounts of CPU usage when verification of very long passwords is attempted.</p>

confdConfig aaa pam

confdConfig aaa pam enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', ConfD uses PAM for authentication.

confdConfig aaa pam service <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'common-auth'	The PAM service to be used for the authentication. This can be any service we have installed in the /etc/pam.d directory. Different unices have different services installed under /etc/pam.d, and some use a file /etc/pam.conf instead - choose a service which makes sense or create a new one.

confdConfig aaa pam timeout <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT10S'	The maximum time that authentication will wait for a reply from PAM. If the timeout is reached, the PAM authentication will fail, but authentication attempts may still be done with other mechanisms as configured for /confdConfig/aaa/authOrder. Default is PT10S, i.e. 10 seconds.

```
confdConfig aaa rest
```

```
confdConfig aaa rest authCacheTTL <A>
```

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT10S'	The amount of time that REST API and RESTCONF locally caches authentication credentials before querying the AAA server. Default is PT10S, i.e. 10 seconds. Setting to PT0S, i.e. 0 seconds, effectively disables the authentication cache.

```
confdConfig aaa rest enableAuthCacheClientIp <A>
```

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If enabled, a clients source IP address will also be stored in the REST/RESTCONF authentication cache.

```
confdConfig aaa sshLoginGraceTime <A>
```

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT1M'	<p>ConfD closes ssh connections after this time if the client has not successfully authenticated itself by then. If the value is 0, there is no time limit for client authentication.</p> <p>This is a global value for all ssh servers in ConfD.</p>

	Modification of this value will only affect ssh connections that are established after the modification has been done.
--	--

confdConfig aaa sshMaxAuthTries <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded   default 'unbounded'	<p>ConfD closes ssh connections when the client has made this number of unsuccessful authentication attempts.</p> <p>This is a global value for all ssh servers in ConfD.</p> <p>Modification of this value will only affect ssh connections that are established after the modification has been done.</p>

confdConfig aaa sshPubkeyAuthentication <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: none   local   system   default 'system'	<p>Controls how the ConfD SSH daemon locates the user keys for public key authentication.</p> <p>If set to 'none', public key authentication is disabled.</p> <p>If set to 'local', and the user exists in /aaa/authentication/users, the keys in the user's 'ssh_keydir' directory are used.</p> <p>If set to 'system', the user is first looked up in /aaa/authentication/users, but only if /confdConfig/aaa/localAuthentication/enabled is set to 'true' - if localAuthentication is disabled, or the user does not exist in /aaa/authentication/users, but the user does exist in the OS</p>

		password database, the keys in the user's \$HOME/.ssh directory are used.
--	--	---

confdConfig aaa validationCallback

confdConfig aaa validationCallback enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true', ConfD will invoke an application callback when validation has succeeded or failed. The callback may reject an otherwise successful validation. If the callback has not been registered, all validation attempts will fail. See confd_lib_dp(3) for the callback details.

confdConfig aaa validationOrder <A>

**Input Parameters:**

Parameter	Type	Description
A	string	By default the AAA system will try token validation for a user by the externalValidation configurables, as that is the only one currently available - i.e. an external program is invoked to validate the token.  The default is thus:  'externalValidation'

confdConfig cli

confdConfig cli actionCallNoListInstance <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: create-instance   deny-call  default 'deny-call'	actionCallNoListInstance can be set to either 'deny-call', or 'create-instance'. If attempting to call an action placed in a non existing list instance, 'deny-call' will give an error. 'create-instance' will create the missing list instance and subsequently call the action. This is only effective in configuration mode in C-style CLI.

confdConfig cli addErrorPrefixSuffix <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	addErrorPrefixSuffix is either 'true' or 'false'. If 'true' then the CLI will add 'Error: ' or 'Aborted: ' and when operations fail in the CLI. If set to 'false' then the prefix will not be added for errors generated by some callback.

confdConfig cli addExtraTableSpacing <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	addExtraTableSpacing is either 'true' or 'false'. If set to 'true' then an additional newline will be added on each side of the table. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli allOrNothingLoad <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	allOrNothingLoad is either 'true' or 'false'. If set to 'true' then the transaction will be reset and all changes discarded if an error is encountered when loading a file. This behavior will not happen when the 'best effort' pipe target is used, nor when stopLoadOnError is set to 'false', nor when autocommitLoad is set to 'true'.

confdConfig cli allowAbbrevCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowAbbrevCmds is either 'true' or 'false'. If 'false' then commands are not allowed to be abbreviated in the CLI.

confdConfig cli allowAbbrevCmdsOnLoad <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowAbbrevCmdsOnLoad is either 'true' or 'false'. If 'false' then commands are not allowed to be abbreviated in the CLI in non interactive mode, ie when loading configurations from file.

confdConfig cli allowAbbrevEnums <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowAbbrevEnums is either 'true' or 'false'. If 'false' then enums entered in the cli cannot be abbreviated.

confdConfig cli allowAbbrevKeys <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	allowAbbrevKeys is either 'true' or 'false'. If 'false' then key elements are not allowed to be abbreviated in the CLI. This is relevant in the J-style CLI when using the commands 'delete' and 'edit'. In the C/I-style CLIs when using the commands 'no', 'show configuration' and for commands to enter submodes.

confdConfig cli allowAbbrevParamNames <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	allowAbbrevParamNames is either 'true' or 'false'. If 'false' then cli command parameter names, ie <name>xx</name>, cannot be abbreviated.

confdConfig cli allowAllAsWildcard <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Wildcard is normally written as '*' but with 'allowAllAsWildcard' set to 'true' the string 'all' will also be accepted in place of '*'.

confdConfig cli allowCaseInsensitiveEnums <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowCaseInsensitiveEnums is either 'true' or 'false'. If 'false' then enums entered in the cli must match in case, ie you cannot enter FALSE if the cli asks for 'true' or 'false'.

confdConfig cli allowImplicitWildcard <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	When set to 'true', users do not need to explicitly type * in the place of keys in lists, in order to see all list instances. When set to 'false', users have to explicitly type * to see all list instances. This option can be set to 'false', to help in the case where tab completion in the CLI takes long time when performed on lists with many instances.

confdConfig cli allowOldStyleModeCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	allowOldStyleModeCmds is either 'true' or 'false'. If set to 'true' then CLI commands in I and C-style are interpreted as mode commands if the path coincides with a list in the data-model. The recommended way to mount commands in a submode is instead to use the 'mount' attribute.

confdConfig cli allowOverwriteOnCopy <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	allowOverwriteOnCopy is either 'true' or 'false'. If set to 'true' then the copy command in the CLI will overwrite the target if it exists. If set to 'false' then an error will be displayed if the target exists.
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confdConfig cli allowParenQuotes <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	allowParenQuotes is either 'true' or 'false'. If set to 'true' then parentheses are treated as quotes, ie the string (xx yy) will be equivalent to 'xx yy' and xx\ yy on the CLI command line.

confdConfig cli allowRangeExpression <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowRangeExpression is either 'true' or 'false'. If 'true' then range expressions are allowed for all key values of type basic type integer. An alternative is to specify hasRange for each path in the clispec.

confdConfig cli allowRangeExpressionAllTypes <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowRangeExpressionAllTypes is either 'true' or 'false'. If 'true' then range expressions are allowed for all key values regardless of type. An alternative is to specify hasRange for each element in the yang files.

confdConfig cli allowTableCellWrap <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowTableCellWrap is either 'true' or 'false'. If 'true' then tables displayed in a Cisco style CLI will be allowed to wrap if the initial cell-width estimate proves to be too narrow. If 'false' a too wide table cell will overflow instead, pushing the rest of the line to the right.

confdConfig cli allowTableOverflow <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	allowTableOverflow is either 'true' or 'false'. If 'true' then tables displayed in a Cisco style CLI will be allowed to overflow. If 'false' a too wide table will be displayed as a 'setting - value' list instead.

confdConfig cli allowWildcard <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	allowWildcard is either 'true' or 'false'. If 'true' then wildcard expressions are allowed in show commands.

confdConfig cli asyncPromptRefresh <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	asyncPromptRefresh is either 'true' or 'false'. If set to 'true' the CLI prompt will be refreshed when asynchronous tasks prints messages in the CLI, such as messages from other users.

confdConfig cli auditLogMode <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: all   none   denied   allowed  default 'all'	auditLogMode is either 'all', 'allowed', or 'denied'. If 'all', then all commands that the user tries to execute will be logged in the audit trail log. If 'allowed', only allowed commands will be logged, ie commands that are actually run by the user. If 'denied', only commands that the user were not allowed to execute will be logged, prefixed with 'denied'.

confdConfig cli autocommitLoad <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	autocommitLoad is either 'true' or 'false'. If 'true' then when executing the 'load' command each line will be committed as soon as it has been read. Note that this is normally not a good idea. Only applies when transactions are disabled.

confdConfig cli autocommitLoadChunkSize <A>

**Input Parameters:**

Parameter	Type	Description
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A	uint64 [1 .. max]  default '1'	autocommitLoadChunkSize is used to avoid auto committing after each line but instead commit after a chunk of lines have been read.
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confdConfig cli autoWizard

confdConfig cli autoWizard enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true' the CLI will prompt the user for required attributes when a new identifier is created. This configuration parameter takes effect only for new sessions.

confdConfig cli banner <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 0..2048}  default ''	Banner shown to the user when the CLI is started. Default is empty. This configuration parameter takes effect only for new sessions.

confdConfig cli bannerFile <A>

**Input Parameters:**

Parameter	Type	Description
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A	string  default ''	Name of a file whose contents are shown to the user when the CLI is started. If empty, the message, if any, set via /confdConfig/cli/banner is shown. Default is empty. This configuration parameter takes effect only for new sessions.
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confdConfig cli bypassAllowAbbrevKeys <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	bypassAllowAbbrevKeys is either 'true' or 'false'. If 'true' then /confdConfig/cli/allowAbbrevKeys setting does not take any effect. It means that no matter what is set for /confdConfig/cli/allowAbbrevKeys, the key elements are not allowed to be abbreviated in the CLI. This is relevant in the J-style CLI when using the commands 'delete' and 'edit'. In the C/I-style CLIs when using the commands 'no', 'show configuration' and for commands to enter submodes.

confdConfig cli cAbortedPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Aborted: '	cAbortedPrefix is a string that is placed in front of aborted messages when they are displayed in the CLI. I- and C-style CLI.

confdConfig cli cAlignLeafValues <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'true'	cAlignLeafValues is either 'true' or 'false'. If 'true' then the leaf values of all siblings in a container or list will be aligned.
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confdConfig cli caseInsensitive <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	caseInsensitive is either 'true' or 'false'. If 'false' then all CLI commands must have the correct case. If set to 'true' then case is mostly ignored. Note that if set to 'true' then all data model files and clispec-files must be written with this in mind. You cannot have two elems that conflict in case.

confdConfig cli caseInsensitiveKeys <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	caseInsensitiveKeys is either 'true' or 'false'. If 'false' then all user defined instance names must have correct case. If set to 'true' then case is mostly ignored. Note that if set to 'true' then all data model files and clispec-files must be written with this in mind. You cannot have two elems that conflict in case.

confdConfig cli cConfigAlignLeafValues <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	cConfigAlignLeafValues is either 'true' or 'false'. If 'true' then the leaf values of all

	default 'true'	siblings in a container or list will be aligned when displaying configuration.
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confdConfig cli cErrorPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Error: '	cErrorPrefix is a string that is placed in front of error messages when they are displayed in the CLI. I- and C-style CLI.

confdConfig cli cExtendedCmdSearch <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Extend the available submode commands to all commands in parent (and grand-parent) modes. These commands are not visible during completion but will be executed if entered. If set to 'false' then only commands for entering other submodes are available in parent and grand-parent modes, if set to 'true' all commands in parent and grand-parent modes are available.

confdConfig cli cHelp <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	cHelp is either 'true' or 'false'. If 'true' the Cisco style CLI will not display any desc text when the user enters '?'. If 'false' then desc text will be shown when entering '?', similarly to the Juniper-style CLI.

confdConfig cli cmdAAAFForAutowizard <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	cmdAAAFForAutowizard is either 'true' or 'false'. If set to 'true' then the CLI will generate synthetic commands, and perform AAA command rule checks for, for all paths and values requested by the autowizard functionality.

confdConfig cli cModeExitFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '!'	cModeExitFormat is the string used in the CLI when displaying the running configuration to indicate exit from a submode.

confdConfig cli columnStats <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	columnStats is either 'true' or 'false'. If 'false' then the container element is repeated on each line when displaying config='false' data in the C and I style CLIs using the 'show' command. If set to 'true' then the name of the container will not be repeated, instead all leaves will be indented. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli commandTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	union string  enumeration One of: infinity  default 'infinity'	Global command timeout. Terminate command unless the command has completed within the timeout. It is generally a bad idea to use this feature since it may have undesirable effects in a loaded system where normal commands take longer to complete than usual.  This timeout can be overridden by a command specific timeout specified in the confd.cli file.

confdConfig cli commitActivityClock <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	commitActivityClock can be either 'true' or 'false'. If set to 'true' then a  /-  style animation will be displayed if the commit operation takes more than 200 ms to complete. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli commitMessage <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	commitMessage is either 'true' or 'false'. If set to 'true' then a message will be displayed in the CLI whenever a commit operation is performed in the system. This is always disabled in l-style, and in transactionless mode. This configuration parameter takes effect only for new sessions.

confdConfig cli commitMessageFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\nSystem message at \$(time)... \nCommit performed by \$(user) via \$(proto) using \$(ctx).\n'	commitMessageFormat controls how commit messages are displayed in the CLI. The format string may contain the variables \$(user), \$(time), \$(ctx), \$(date), \$(time12), \$(time12ampm), \$(time12hm), \$(host), \$(hostname), and \$(proto). This configuration parameter takes effect for both existing and new sessions.

confdConfig cli commitRetryTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	union string  enumeration One of: infinity  default 'PT0S'	Commit timeout in the CLI. This timeout controls for how long the commit operation will attempt to complete the operation when some other entity is locking the database, e.g. some other commit is in progress or some managed object is locking the database.  There is a similiar configuration parameter, / confdConfig/commitRetryTimeout, which sets a timeout for all ConfD transactions, not just for CLI transactions.

confdConfig cli compactShow <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Use compact representation when showing the configuration in C and I style CLIs. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli compactStatsShow <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Use compact representation when showing the operational data in C and I style CLIs. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli compactTable <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	compactTable is either 'true' or 'false'. If 'true' then tables with multiple dynamic levels will be displayed more compactly. The first instance of the sub-element will appear on the same row as the parent instance. When set to 'false' all new instances will appear on a new row. This configuration parameter takes effect only for new sessions.

confdConfig cli completionListLine <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	completionListLine is either 'true' or 'false'. If 'true' then the CLI will display completion lists one item per line. If set to 'false' one-line presentation will be used for items with info texts and compact for the rest (if compListCompact above is set to 'true' there may be a mix of the two formats in the same listing). This configuration parameter takes effect for both existing and new sessions.

confdConfig cli completionMetaInfo <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: false   alt1   alt2  default 'false'	completionMetaInfo is either 'false', 'alt1' or 'alt2'. This option only applies to the J-style CLI. If set to 'alt1' then the alternatives shown for possible completions will be prefixed as follows:  containers with > lists with + leaf-lists with +  For example:  Possible completions: ... > applications + apply-groups ... + dns-servers ...  If set to 'alt2', then possible completions will be prefixed as follows:  containers with > lists with children with +> lists without children with +  For example:  Possible completions: ... > applications +>apply-groups ... + dns-servers ...

confdConfig cli completionShowMax <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [5 .. 2147483647]  default '100'	Maximum number of possible alternatives to present when doing completion.

confdConfig cli completionShowOldVal <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	completionShowOldVal is either 'true' or 'false'. If set to 'true' a leaf's old value will be displayed inside brackets during command line completion. If set to 'false' it will not be shown.

confdConfig cli compListCompact <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	compListCompact is either 'true' or 'false'. If 'true' then the CLI will display items with an associated info text one per line, and all the rest in compact format. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli confirmUncommittedOnExit <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: prompt   discard   commit  default 'prompt'	If set to 'prompt' then the user will be prompted whether to discard uncommitted changes or not. If set to 'discard' then uncommitted changes will be discarded without prompting the user. If set to 'commit' then uncommitted changes will be automatically committed without asking the user.

confdConfig cli continueOnErrorCmdStack <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	continueOnErrorCmdStack is either 'true' or 'false'. If set to 'true' then command stack execution will continue even if an earlier command in the stack failed with an error, ie show xx ; show zz will execute both 'show xx' and 'show zz' even if 'show xx' failed with an error. If set to 'false' then command execution will be aborted as soon as a command fails.
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confdConfig cli cPrivate <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	cPrivate is either 'true' or 'false'. If set to 'true' then the term 'private' will be used in place of 'terminal' for denoting the private/terminal configuration mode. When set to 'false' the term 'terminal' will be used instead.

confdConfig cli cPrompt1 <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\hM# '	Prompt used in operational mode in C style. The string may contain a number of backslash-escaped special characters which are decoded as described above. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli cPrompt2 <A>

**Input Parameters:**

Parameter	Type	Description
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A	string  default '\h(\m)# '	Prompt used in configuration mode in C style. The string may contain a number of backslash-escaped special characters which are decoded as described above. This configuration parameter takes effect for both existing and new sessions.
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confdConfig cli cRestrictiveNo <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If a leaf value is given when an optional leaf is deleted, the given value is normally ignored and the node is deleted regardless of the value. When cRestrictiveNo is set to 'true', the given value is required to be equal to the old value in order to the delete operation to be allowed. For example the Cisco style command 'no interface eth0 mtu 1500' will only succeed if the mtu has the value 1500.

confdConfig cli cSilentNo <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Silently ignore deletes of non-existing instances.

confdConfig cli cStrictAAA <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	cStrictAAA is either 'true' or 'false'. If set to 'true' then the CLI will match all auto-

	default 'false'	rendered C-style commands (eg. C-style config commands and C-style actions) against AAA data-rules and all other C-Style commands will be matched against AAA command-rules. If set to 'false', the CLI will match all commands against both AAA data-rules and AAA command-rules.
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confdConfig cli cStylePromptInJStyle <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If set to 'true' then the \m and \M will be expanded just as in C- and I-style

confdConfig cli cSuppressCmdSearch <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Prevent non-local commands from being executed. This negates the effect of cExtendedCmdSearch above. It is recommended to also set cModeExitFormat to 'exit' when this option is set to 'true'.

confdConfig cli cTab <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	cTab is either 'true' or 'false'. If 'true' the Cisco style CLI will not display any help text when the user enters TAB. If 'false' then help text will be shown when entering TAB, similarly to the Juniper-style CLI.

confdConfig cli cTabInfo <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	cTabInfo is either 'true' or 'false'. If 'false' the Cisco style CLI will not display any info text when the user enters TAB. If 'true' then info text will be shown when entering TAB, similarly to the Juniper-style CLI.

confdConfig cli cWarningPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Warning: '	cWarningPrefix is a string that is placed in front of warnings when they are displayed in the CLI. I- and C-style CLI.

confdConfig cli defaultDisplayLevel <A>

**Input Parameters:**

Parameter	Type	Description
A	int64  default '99999999'	If enableDisplayLevel is set to 'true' then this settings controls the default display level used if no explicit display level is specified. It is also used as the initial value of the (set) 'display-level' command in the CLI.

confdConfig cli defaultLeafListStyle <A>

**Input Parameters:**

Parameter	Type	Description
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A	enumeration One of: flat-list   range-list	Make all plain leaf-lists behave as they were decorated with either 'tailf:cli-flat-list-syntax' or 'tailf:cli-range-list-syntax'
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confdConfig cli defaultPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default "	defaultPrefix is a string that is placed in front of the default value when a configuration is shown with default values as comments.

confdConfig cli defaultTableBehavior <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: dynamic   suppress   enforce  default 'dynamic'	defaultTableBehavior is either 'dynamic', 'suppress', or 'enforce'. If set to 'dynamic' then list nodes will be displayed as tables if the resulting table will fit on the screen. If set to suppress, then list nodes will not be displayed as tables unless a table has been specified by some other means (ie through a setting in the clispec-file or through a command line parameter), if set to 'enforce' then list nodes will always be displayed as tables unless otherwise specified in the clispec-file or on the command line.

confdConfig cli dequoteHidden <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	If set to 'true' the value that the user entered will be dequoted, ie if the user enters \n

	default 'false'	it will be interpreted as a newline. This is the default behavior for all other leaf types. If set to 'false' then no unquoting will be performed for hidden (non-echoing) data types when the CLI explicitly prompts for their values. Dequoting will still be performed for values entered directly on the command line.
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confdConfig cli disableIdleTimeoutOnCmd <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	disableIdleTimeoutOnCmd is either 'true' or 'false'. If set to 'false' then the idle timeout will trigger even when a command is running in the CLI. If set to 'true' the idle timeout will only trigger if the user is idling at the CLI prompt.

confdConfig cli disablePipe <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	disablePipe is either 'true' or 'false'. If set to 'true' then the pipe commands are disabled in operational mode.

confdConfig cli disablePipeConfig <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	disablePipeConfig is either 'true' or 'false'. If set to 'true' then the pipe commands are disabled in configure mode.

confdConfig cli displayEmptyConfigContainers <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	displayEmptyConfigContainers is either 'true' or 'false'. If set to 'true' then 'show status' in the J-style CLI will display empty lists that are 'config true' even when there is no data to display. If set to 'false' the those containers will not be shown.

confdConfig cli displayNonPresenceAttributes <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	displayNonPresenceAttributes is either 'true' or 'false'. If set to 'true' then all non presence containers will display their attributes even if the container is empty similar to how presence containers displays its attributes. If set to 'false' (default behaviour) those attributes will not be shown automatically.

confdConfig cli docWrap <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	docWrap is either 'true' or 'false'. If 'false' then certain documentation texts will not be enclosed in '<' and '>', if set to 'true' they will be.

confdConfig cli editWrapMode <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: wrap   newline   vt100  default 'wrap'	editWrapMode is either 'wrap', 'newline' or 'vt100'. If 'wrap' or 'vt100' is used then cut-and-paste will work in xterms (and other terminal emulators) but the CLI may behave oddly if the screen width is manually configured to something other than the true screen width. If 'vt100' is used then no >space<>backspace< sequence is used to force line wrapping. This makes it easier for scripts that rely on command line echoing but the cursor will disappear at the end of the line temporarily.

confdConfig cli enableCliCache <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enableCliCache is either 'true' or 'false'. If 'true' the CLI will operate with a builtin caching mechanism to speed up some of its operations. This is the default and preferred method. Only turn this off for very special cases.

confdConfig cli enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	When set to 'true', the CLI server is started.

confdConfig cli enableDisplayGroups <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enableDisplayGroups is either 'true' or 'false'. If 'false' then the user will not be able to provide a set of display groups when issuing the show command.

confdConfig cli enableDisplayLevel <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: true   false   pipe  default 'pipe'	<p>enableDisplayLevel is either 'true', 'false' or 'pipe'. If 'false' then the 'displaylevel' option to the show command will not be available in the CLIs. If set to 'pipe' then a special pipe target called 'display-level' will be available.</p> <p>The displaylevel option can be used to limit how many levels will be displayed by the show command. If a display level of 1 is specified then only the direct children of an element will be shown. If a display level of 3 is specified then only elements at depth 3 below a given element will be displayed, etc.</p> <p>A user can also modify the default display level for a given CLI- session using the display-level setting in the CLI, similarly to the screen-width, or idle-timeout settings.</p>

confdConfig cli enableLoadMerge <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	enableLoadMerge is either 'true' or 'false'. If 'false' then the 'load' command in the C

	default 'true'	and I-style CLIs will not have an option for how to load a config file. If set to 'true' then the 'load' command will have an additional option for loading the file either in 'override' mode or in 'merge' mode. 'override' is the mode used if enableLoadMerge is set to 'false'.
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confdConfig cli enableLoadMergeLeafList <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enableLoadMergeLeafList is either 'true' or 'false'. If 'true' then the 'load merge' command will merge the leaf-list elements in a config file with the existing leaf-list elements. If set to 'false' then the 'load merge' will have same effect as 'load replace' for leaf-list when loading the config file.

confdConfig cli enterSubmodeOnLeaf <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enterSubmodeOnLeaf is either 'true' or 'false'. If set to 'true' (the default) then setting a leaf in a submode from a parent mode results in entering the submode after the command has completed. If set to 'false' then an explicit command for entering the submode is needed. For example, if running the command  interface FastEthernet 1/1/1 mtu 1400  from the top level in config mode. If enterSubmodeOnLeaf is 'true' the CLI will end up in the 'interface FastEthernet 1/1/1' submode after the command execution. If set to 'false' then the CLI will remain at the

		<p>top level. To enter the submode when set to 'false' the command</p> <p>interface FastEthernet 1/1/1</p> <p>is needed. Applied to the C- and I- style CLI.</p>
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confdConfig cli enumKeyInfo <A>

**Input Parameters:**

Parameter	Type	Description
A	<p>boolean</p> <p>default 'false'</p>	<p>If set to 'true' the CLI will add the text &lt;keyname:enumeration&gt; whenever it is displaying a completion list for entering a key value that is an enumeration. For example:</p> <p>io(config)# vqe dsp channel 1 Possible completions: &lt;b-id:enumeration&gt; 10 11 12 13 14 5 6 9</p>

confdConfig cli escapeBackslash <A>

**Input Parameters:**

Parameter	Type	Description
A	<p>boolean</p> <p>default 'false'</p>	<p>escapeBackslash is either 'true' or 'false'. If 'true' then backslash is escaped in the CLI.</p>

confdConfig cli execNavigationCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	<p>execNavigationCmds is either 'true' or 'false'. If set to 'true' then it is possible to</p>

	default 'false'	enter a submode also in exec mode in C- and I-style CLI.
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confdConfig cli exitConfigModeOnCtrlC <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	exitConfigModeOnCtrlC is either 'true' or 'false'. If set to 'false' the user will not be thrown out of config mode when ctrl-c is pressed on an empty command line.

confdConfig cli exitModeOnEmptyRange <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	exitModeOnEmptyRange is either 'true' or 'false'. If 'true' and if standing in a range submode, the CLI will exit to the parent submode if all instances in the range has been deleted by the user.

confdConfig cli expandAliasEscape <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: false  string {length = 1}  default 'false'	expandAliasEscape is either 'false' or a character. If set to a character then expanding an alias can be prevented by putting the character in front of the alias.

confdConfig cli expandAliasOnCompletion <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	expandAliasOnCompletion is either 'true' or 'false'. If set to 'true' then aliases will be expanded before invoking the completion code.

confdConfig cli explicitSetCreate <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	explicitSetCreate is either 'true' or 'false'. If set to 'true' then the 'set' command in J-style CLI cannot be used to create instances. Instead a new command called 'create' becomes available for creating instances. Note that this deviates from a typical Juniper style CLI where instance creation is performed by the 'set' command.

confdConfig cli externalActionErrorMsg <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The externalActionErrorMsg value is displayed whenever an external error occurs when executing an action in the CLI.

confdConfig cli forcedExitFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\nYou are forced out of configure mode by \$(sender).\n'	forceExitFormat controls which message to display when a user is forced out of configure mode by another user. The format string may contain the variables \$(user), \$(time), \$(date), \$(time12), \$(time12ampm), \$(time12hm), \$(host) and \$(hostname).

confdConfig cli hideDotFiles <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	hideDotFile is either 'true' or 'false'. If 'true' then files starting with a '.' will not be visible in the CLI.

confdConfig cli historyMaxSize <A>

**Input Parameters:**

Parameter	Type	Description
A	int64  default '1000'	Sets maximum configurable history size.

confdConfig cli historyRemoveDuplicates <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If set to 'true' then repeated commands in the CLI will only be stored once in the history. Each invocation of the command will only update the date of the last entry. If

		set to 'false' duplicates will be stored in the history.
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confdConfig cli historySave <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	If set to 'true' then the CLI history will be saved between CLI sessions. The history is stored in the state directory.

confdConfig cli idleTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT30M'	Maximum idle time before terminating a CLI session. Default is PT30M, ie 30 minutes. PT0M means no timeout. Will be silently capped to 49 days 17 hours. This configuration parameter takes effect only for new sessions.

confdConfig cli ignoreLeadingWhitespace <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	ignoreLeadingWhitespace is either 'true' or 'false'. If 'false' then the CLI will show completion help when the user enters TAB or SPACE as the first characters on a row. If set to 'true' then leading SPACE and TAB are ignored. The user can enter '?' to get a list of possible alternatives. Setting the value to 'true' makes it easier to paste scripts into the CLI.

confdConfig cli ignoreShowWithDefaultOnDiff <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When set to 'true' ConfD will ignore the annotation tailf:cli-show-with-default when displaying the configuration changes in the C-style CLI.

confdConfig cli ignoreSubsystemFailures <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	ignoreSubsystemFailures is either 'true' or 'false'. If 'true' the CLI will make a best effort to display data even if a data provider is unavailable.

confdConfig cli inconsistentDatabaseSuffix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default ''	The inconsistentDatabaseSuffix is a message that is appended to the warning message that the CLI displays when it detects that the running database have got inconsistent.

confdConfig cli indentTemplates <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	indentTemplates is either 'true' or 'false'. If set to 'true' then the text resulting from a show template will be indented to the same level as the surrounding auto-rendered show text. If set to 'false' then no automatic indentation will occur. The automatic variable '.indent' may be used in the templates to do manual indentation.

confdConfig cli infoOnMatch <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	infoOnMatch is either 'true' or 'false'. If 'true' then the CLI will add info texts when displaying possible match completions. If set to 'false' then the info text will not be shown.

confdConfig cli infoOnSpace <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	infoOnSpace is either 'true' or 'false'. If 'false' then no info strings will be displayed in the tab completion list when the user enters SPACE.

confdConfig cli infoOnTab <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	infoOnTab is either 'true' or 'false'. If 'false' then no info strings will be displayed in the

	default 'true'	tab completion list when the user enters TAB.
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confdConfig cli inheritPaginate <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	inheritPaginate is either 'true' or 'false'. If set to 'true' then the paginate setting of a pipe command will be determined by the paginate setting of the main command. If set to 'false', then the output from a pipe command will not be paginated unless pagination for that pipe command has been overridden in a clispec file.

confdConfig cli instanceDescription <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	instanceDescription is either 'true' or 'false'. If 'true' then the CLI will look for description elems and add their values as info texts when displaying possible completions in the CLI. This makes it easier to identify the different instances.

confdConfig cli invalidDataString <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '--ERROR--'	invalidDataString is a string that is displayed instead of the real value whenever a data provider returns an invalid data element.

confdConfig cli jAbortedPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Aborted: '	jAbortedPrefix is a string that is placed in front of aborted messages when they are displayed in the CLI. J-style CLI.

confdConfig cli jAlignLeafValues <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	jAlignLeafValues is either 'true' or 'false'. If 'true' then the leaf values of all siblings in a container or list will be aligned.

confdConfig cli jAllowDeleteAll <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	jAllowDeleteAll is either 'true' or 'false'. If set to 'true' then the J-style CLI will show the command 'delete' without arguments, if set to 'false' then an argument is required.

confdConfig cli jEnableLoadMergeLeafList <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	DEPRECATED - use enableLoadMergeLeafList instead.

	default 'false'	jEnableLoadMergeLeafList is either 'true' or 'false'. If 'true' then the 'load merge' command in the J-style CLI will merge the leaf-list elements in a config file with the existing leaf-list elements. If set to 'false' then the 'load merge' will have same effect as 'load replace' for leaf-list when loading the config file.
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confdConfig cli jErrorPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Error: '	jErrorPrefix is a string that is placed in front of error messages when they are displayed in the CLI. J-style CLI.

confdConfig cli jExtendedShow <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	jExtendedShow is either 'true' or 'false'. If set to 'true' then the J-style CLI will have auto-rendered show commands in the same style as the C and I-style CLIs. The 'show status' command can still be used for viewing config='false' data.

confdConfig cli jHideHelp <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	jHideHelp is either 'true' or 'false'. If 'true' the Juniper style CLI will not display any desc

	default 'false'	text when the user enters '?'. If 'false' then desc text will be shown when entering '?'.
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confdConfig cli jShowCR <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	jShowCR is either 'true' or 'false'. If set to 'true' then the J-style CLI will show >cr< in the completion list whenever it is legal to press cr.

confdConfig cli jShowTableRecursive <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	jShowTableRecursive is either 'true' or 'false'. If 'true' the J-style CLI will attempt to display the result of the command 'show table' as a table even when a list is not directly specified. If set to 'false' then a table will only be produced if a list node is specified as argument to 'show table'.

confdConfig cli jShowUnset <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	jShowUnset is either 'true' or 'false'. If set to 'true' then the J-style CLI will show unset leaves with the value of jShowUnsetText when doing 'show configuration'.

confdConfig cli jShowUnsetText <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'UNSET'	jShowUnsetText is the text printed for unset values if jShowUnset has been set to 'true'.

confdConfig cli jStatusFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '[\$(status)][\$(time)]\n'	jStatusFormat controls which status message is displayed after executing a CLI command in the J-style CLI. The format string may contain the variables \$(status), \$(time), \$(date), \$(time12), \$(time12ampm), \$(time12hm), \$(host), \$(hostname), and \$(proto).

confdConfig cli jWarningPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Warning: '	jWarningPrefix is a string that is placed in front of warnings when they are displayed in the CLI. J-style CLI.

confdConfig cli laxBarQuoting <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	laxBarQuoting is either 'true' or 'false'. If set to 'true' then   and ; are only quoted if they appear by them selves. A consequence of this is that the user must have whitespace on both sides of   and ; on the command line when these characters are used as pipe ( ) or concatenator (;).
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confdConfig cli leafPrompting <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	leafPrompting is either 'true' or 'false'. If 'true' the CLI will prompt the user for leaf values if they are not provided on the command line. If 'false' then an error message will be displayed if the user does not provide a value for a leaf.

confdConfig cli loadActivityClock <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	loadActivityClock can be either 'true' or 'false'. If set to 'true' then a  /-  style animation will be displayed if the load operation takes more than 200 ms to complete.

confdConfig cli mapActions <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of:	mapActions is either 'both', 'config', or 'oper'. If 'both', then actions are available both in

	both   config   oper  default 'both'	operational mode and in configure mode. If 'oper' then they are only available in operational mode, and if 'config' then they are only available in configure mode.
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confdConfig cli matchCompletionsFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Possible match completions:'	matchCompletionsFormat is the string displayed before the displaying the actual match completion possibilities.

confdConfig cli matchCompletionsSearchLimit <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded  default '50'	matchCompletionsSearchLimit is either unbounded or an integer value. It determines how many list instances should be looked at in order to determine if a leaf should be included in the match completions list. It can be very expensive to explore all instances if the configuration contains many list instances.

confdConfig cli maxLineLength <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32	When set to a number larger than zero, this number will be the maximum line length which can be entered into the CLI. This

	default '0'	allows ConfD to reject extremely large lines that can otherwise potentially consume all memory. Note that this option does not take effect in the J-style load command.
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confdConfig cli messageFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\nMessage from \$(sender) at \$(time)... \n\$(message)\nEOF\n'	messageFormat controls how messages between users and from the system should be presented to the user. The format string may contain the variables \$(sender), \$(time), \$(message), \$(date), \$(time12), \$(time12ampm), \$(time12hm), \$(host), \$(hostname), and \$(user).

confdConfig cli messageMaxSize <A>

**Input Parameters:**

Parameter	Type	Description
A	int64  default '10000'	Maximum size of user message.

confdConfig cli messageQueueSize <A>

**Input Parameters:**

Parameter	Type	Description
A	int64  default '10'	Some messages are not displayed in the CLI when a command executed, but are delayed until the current command execution has finished. The size of the queue of pending messages is configured in messageQueueSize. This configuration

		parameter takes effect for both existing and new sessions.
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confdConfig cli messageWordWrap <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	messageWordWrap is either 'true' or 'false'. If set to 'true' then all system/user/prio messages in the CLI will be word-wrapped to the current terminal width.

confdConfig cli mixedMode <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	mixedMode is either 'true' or 'false'. If set to 'true' all oper mode commands are available in config mode.

confdConfig cli modelInfolnAAA <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: true   false   path  default 'false'	modelInfolnAAA is either 'true', 'false' or 'path'. If 'true', then all commands will be prefixed with major and minor mode name when processed by the AAA-rules. This means that it is possible to differentiate between commands with the same name in different modes. Major mode is 'operational' or 'configure' and minor mode is 'top' in J-style and the name of the submode in C- and I-mode. On the top-level in C- and I-mode it is also 'top'. If set to 'path' and

		if the command operation is 'read' the major mode will be followed by the path to the submode which will be followed by the command. If set to 'path' and if the command operation is 'execute' the major mode will instead be followed by the command and the path to the submode will be prepended to any path arguments of the command.
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confdConfig cli modelInfoInAudit <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: true   false   path  default 'false'	modelInfoInAudit is either 'true', 'false' or 'path'. If 'true', then all commands will be prefixed with major and minor mode name when logged as audit messages. This means that it is possible to differentiate between commands with the same name in different modes. Major mode is 'operational' or 'configure' and minor mode is 'top' in J-style and the name of the submode in C- and I-mode. On the top-level in C- and I-mode it is also 'top'. If set to 'path' the major mode will be followed by the full command path to the submode.

confdConfig cli modeNameStyle <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: short   two   full  default 'short'	modeNameStyle is either 'short', 'two', or 'full'. If 'short', then the mode name of submodes in the Cisco style CLIs will be constructed from the last element in the path and the instance key. If set to 'two' then the two last modes will be used for the mode name. If set to 'full' then all components in the path will be used in the mode name.

confdConfig cli moreBufferLines <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded   default '5000'	moreBufferLines is used to limit the buffering done by the more process. It can be 'unbounded' or a positive integer describing the maximum number of lines to buffer.

confdConfig cli multiPatternOperation <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: any   all  default 'any'	multiPatternOperation is one of 'any', and 'all'. When set to 'any' a pattern is true if at least one match is found, if set to 'all', all patterns needs to be found for the pattern expression to be considered true.

confdConfig cli newInsert <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	newInsert is either 'true' or 'false'. If 'false' then the old insert command will be used. If set to 'true' then the new insert command, capable of inserting ordered-by-user list elements, will be used.

confdConfig cli newLogout <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	newLogout is either 'true' or 'false'. If 'false' then the I and C modes will have a single 'logout' command for logging out a user and a specific session. If set to 'true' then there will be two different commands - 'logout user <name>' and 'logout session <id>'

confdConfig cli noEmbeddedComments <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Do not allow embedded comments in the CLI, only comments that are preceeded by whitespace are allowed. All other uses of the comment character is considered valid input.

confdConfig cli noFollowIncompleteCommand <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	noFollowIncompleteCommand is either 'true' or 'false'. If set to 'true' then the 'no' command will take incomplete-command declarations into account. If set to 'false' it will not.

confdConfig cli noMatchCompletionsFormat <A>

**Input Parameters:**

Parameter	Type	Description
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A	string  default ""	noMatchCompletionsFormat is the string displayed when there are no matching completion possibilities. The string is empty by default.
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confdConfig cli oldDetailsArg <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	oldDetailsArg is either 'true' or 'false'. If 'false' then commands that display the configuration will not have a 'details' argument but instead have a pipe flag called 'details'. The setting is present for backwards compatibility, the recommended setting for future use is 'false'.

confdConfig cli orderedShowConfig <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	orderedShowConfig is either 'true' or 'false'. If 'true' then the commands displayed when running the 'show configuration' command in C-mode will take leafrefs and cli-diff-dependency into account.

confdConfig cli pipeHelpMode <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: always   auto   never	If showPipe is set to 'true', then pipeHelpMode determines how the pipe option will be displayed to the user. If set to 'auto', then the description text 'Output modifiers' will only be displayed if there are

	default 'auto'	any other options with help texts, otherwise it will not be shown. If set to 'always' then the help text will always be displayed, if set to 'never' then it will never be displayed.
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confdConfig cli possibleCompletionsFormat <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'Possible completions:'	possibleCompletionsFormat is the string displayed before the displaying the actual completion possibilities.

confdConfig cli prettifyStatsName <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Default setting for prettifying, ie changing _ and - to space in element names when displaying config='false' data in key-value listings.

confdConfig cli prioritizeSubmodeCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	prioritizeSubmodeCmds is either 'true' or 'false'. If set to 'true' then local submode commands are prioritized before commands in parent (and grand-parent) modes in C and I-style. This means that if a command in local submode is ambiguous with a command in parent (or grand-parent) mode the local submode command is executed. See also cExtendedCmdSearch.

confdConfig cli prompt1 <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\u@\h\M> '	<p>Prompt used in operational mode. The string may contain a number of backslash-escaped special characters which are decoded as follows:</p> <p>\[ and \] Enclosing sections of the prompt in \[ and \] makes that part not count when calculating the width of the prompt. This makes sense, for example, when including non-printable characters, or control codes that are consumed by the terminal. The common control codes for setting text properties for vt100/xterm are ignored automatically, so are control characters. Updating the xterm title can be done using a control sequence that may look like this: &lt;prompt1&gt;\[&amp;#x1b;]0;\u@\h&amp;#x07;\]\u@\h&gt;; &lt;/prompt1&gt; \d the date in 'YYYY-MM-DD' format (e.g., '2006-01-18') \h the hostname up to the first '.' (or delimiter as defined by promptHostnameDelimiter) \H the hostname \s the client source ip \S the name provided by the -H argument to confd_cli \t the current time in 24-hour HH:MM:SS format \T the current time in 12-hour HH:MM:SS format \@ the current time in 12-hour am/pm format \A the current time in 24-hour HH:MM format \u the username of the current user \m the mode name (only used in XR style) \m{N} same as \m, but the number of trailing components in the displayed path is limited to be max N (an integer). Characters removed are replaced with an ellipsis (...). \M the mode name inside parenthesis if in a mode \M{N} same as \M, but the number of trailing components in the displayed path is limited to be max N (an integer). Characters removed are replaced with an ellipsis (...).</p>

confdConfig cli prompt2 <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\u@\h\M% '	Prompt used in configuration mode. The string may contain a number of backslash-escaped special characters which are decoded as described for prompt1.

confdConfig cli promptEnumLimit <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]  default '4'	promptEnumLimit controls how many enumerations should be included in the prompt when prompting the user for a value where there are a number of alternatives. If the number of alternatives exceeds the above configured limit then the list will be truncated and the string '...' will be added.

confdConfig cli promptHostnameDelimiter <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '.'	When the \h token is used in a prompt the first part of the hostname up until the first occurrence of the promptHostnameDelimiter is used. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli promptSessionsCLI <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	promptSessionsCLI is either 'true' or 'false'. If set to 'true' then only the current CLI sessions will be displayed when the user tries to start a new CLI session and the maximum number of sessions has been reached. Note that MAAPI sessions with their context set to 'cli' would be regarded as CLI sessions and would be listed as such.
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confdConfig cli quickSshTeardown <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	quickSshTeardown controls if CLI sessions initiated through an SSH sessions should be torn down directly when the socket is closed, or not. When set to 'true' the socket will be closed as soon as the CLI receives a tcp shutdown, if set to 'false' it will wait until all pending data has been written.

confdConfig cli quoteStyle <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: quote   backslash  default 'backslash'	quoteStyle is either 'quote' or 'backslash'. If set to 'quote' then the quote characters will be used on the CLI command line for quoting strings with troublesome characters. If set to 'backslash' then a backslash will be used. For example  Using quote:  io(config)# description 'description with spaces'  Using backslash:  io(config)# description description\ with\ spaces

confdConfig cli reallocateOperTrans <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	reallocateOperTrans is either 'true' or 'false'. If 'true' then a new read transaction will be allocated for each oper-mode command. When set to 'false' a single oper transaction will be used for the entire CLI session.

confdConfig cli reconfirmHidden <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If set to 'true' the user will have to re-confirm non-echoing values in the CLI. Ie, when the CLI prompts the user for a value that is not echoed the user will be asked to enter it twice.

confdConfig cli reportInvalidCompletionInput <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	reportInvalidCompletionInput is either 'true' or 'false'. If set to 'true' the CLI will display an error message during completion when the user press '?' to indicate if an invalid token has been entered on the command line.

confdConfig cli resetScreenAfterMore <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'true'	resetScreenAfterMore is used to control if a terminal reset sequence should be sent if control characters have been printed. This is to restore the terminal after showing potentially terminal controlling sequences.
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confdConfig cli restrictedFileAccess <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	restrictedFileAccess is either 'true' or 'false'. If this is set to 'true', then the user only has access to the home directory (or the directory where confd_cli is started), or if a directory is specified in a cli command parameter (params/param/type/directory{wd} or params/param/type/file{wd}) to that directory.

confdConfig cli restrictedFileRegexp <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default ''	restrictedFileRegexp is either an empty string or an regular expression (AWK style). If not empty then all files and directories created or accessed must match the regular expression. This can be used to ensure that certain symbols do not occur in created file names.

confdConfig cli rollbackAAA <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	If set to 'true' then AAA rules will be applied when a rollback file is loaded. This means

	default 'false'	that rollback may not be possible if some other user have made changes that the current user does not have access privileges to.
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confdConfig cli rollbackMax <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [0 .. 2147483647]  default '1000'	Maximum number of rollback changes to allow through the CLI. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli rollbackNumbering <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: fixed   rolling  default 'rolling'	rollbackNumbering is either 'fixed' or 'rolling'. If set to 'rolling' then rollback file '0' will always contain the last commit. When using 'fixed' each rollback will get a unique increasing number. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli rollbackNumberingInitial <A>

**Input Parameters:**

Parameter	Type	Description
A	int64  default '10000'	rollbackNumberingInitial is the starting point of the rollback numbering when the 'increasing' rollback numbering scheme is used. This configuration parameter takes effect when ConfD initially starts.

confdConfig cli safeScriptExecution <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	safeScriptExecution is either 'true' or 'false'. If set to 'true' then 'exit', 'abort', 'end', and 'commit' are not allowed inside a script loaded through maapi with maapi_load_config().

confdConfig cli showAllNs <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showAllNs is either 'true' or 'false'. If 'true' then all element names will be shown with their namespace prefix in the CLI. This is visible when displaying the running configuration and when modifying the configuration.

confdConfig cli showAnnotations <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	showAnnotations is either 'true' or 'false'. If 'true' the CLI will display configuration annotations if they are present. If set to 'false' then the annotations will not be displayed by default.

confdConfig cli showCommitProgress <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showCommitProgress can be either 'true' or 'false'. If set to 'true' then the commit operation in the CLI will provide some progress information when the output is piped to the 'details' target.

confdConfig cli showDefaults <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showDefaults is either 'true' or 'false'. If 'true' then default values will be shown when displaying the configuration. The default value is shown inside a comment on the same line as the value. Showing default values can also be enabled in the CLI per session using the operational mode command 'set show defaults true'. This configuration parameter takes effect only for new sessions.

confdConfig cli showDescription <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	showDescription is either 'true' or 'false'. If set to 'false' then the Description: xx text will not be displayed.

confdConfig cli showEditors <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'true'	showEditors is either 'true' or 'false'. If set to 'true' then a list of current editors will be displayed when a user enters configure mode.
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confdConfig cli showEmptyContainers <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showEmptyContainers is either 'true' or 'false'. If 'true' the CLI will display empty container nodes when displaying the configuration. If 'false' then empty static containers will not be shown.

confdConfig cli showKeyName <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	showKeyName controls if the name of the key should be shown in the type string during completion.

confdConfig cli showLogDirectory <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '/var/log'	Location where the 'show log' command looks for log files.

confdConfig cli showMatchBeforePossible <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showMatchBeforePossible is either 'true' or 'false'. If set to 'true' then the match completions will be displayed before the other possible completions, if set to 'false' then the match completions will be displayed after.

confdConfig cli showNedErrorAsInfo <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Description not available.

confdConfig cli showPipe <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	showPipe is either 'true' or 'false'. If set to 'true' the completion list will contain   in operational mode if it is legal to enter  . In J-style the jShowCR must also be set to enable this. If disablePipe is set to 'true', it will override the setting of showPipe and imply the same behavior as if showPipe is 'false'.

confdConfig cli showPipeConfig <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showPipeConfig is either 'true' or 'false'. If set to 'true' the completion list will contain   in configure mode if it is legal to enter  . In J-style the jShowCR must also be set to enable this. If disablePipeConfig is set to 'true', it will override the setting of showPipeConfig and imply the same behavior as if showPipeConfig is 'false'.

confdConfig cli showServiceMetaData <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Description not available.

confdConfig cli showSubsystemMessages <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	showSubsystemMessages is either 'true' or 'false'. If 'true' the CLI will display a system message whenever a connected daemon is started or stopped.

confdConfig cli showTableLabelsIfMultiple <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	showTableLabelsIfMultiple is either 'true' or 'false'. If set to 'true' then table labels will only be displayed if multiple tables, or a table and additional data is displayed. If set

		to 'false' then table labels are always shown if they exists and tableLabel is enabled.
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confdConfig cli showTags <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	showTags is either 'true' or 'false'. If 'true' the CLI will display configuration tags if they are present. If set to 'false' then the tags will not be displayed by default.

confdConfig cli singleElemPattern <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	singleElemPattern is either 'true' or 'false'. If 'true' then filters/patterns to show commands can be used to specify that you want to see a specific leaf element of all lists. Only that leaf element will be shown for each list entry. This works for both tables and row based rendering.

confdConfig cli smartRenameFiltering <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	smartRenameFiltering is either 'true' or 'false'. If set to 'true' then only paths that leads to existing instances will be presented when doing completion. This will lead to some extra calls to get_next() in order to determine if a path has instances or not. When set to 'false' all paths with potential instances are presented.

confdConfig cli sortLocalCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	sortLocalCmds is either 'true' or 'false'. If set to 'true' and sortSubmodeCmds are also set to 'true', then local submode commands are listed before global commands when the user enters ? in a submode in C and I-style, and the order of the commands is alphabetically ordered. If set to 'false' then the order of the local submode commands are the same as in the data model.

confdConfig cli sortShowElems <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	sortShowElems is either 'true' or 'false'. If 'false' then the show commands will display the elements in the order they appear in the data model. If set to 'true' then all non-lists will appear before the lists. This setting only applies to the C- and I-style CLIs.

confdConfig cli sortSubmodeCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	sortSubmodeCmds is either 'true' or 'false'. If set to 'true' then local submode commands are listed before global commands when the user enters ? in a submode in C and I-style.

confdConfig cli spaceCompletion

confdConfig cli spaceCompletion enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true' command and argument completion will be performed when <space> is entered.

confdConfig cli ssh

confdConfig cli ssh banner <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 0..2048}  default ""	banner is a string that will be presented to the client before authenticating when logging in to the CLI via the built-in SSH server.

confdConfig cli ssh bannerFile <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default ""	Name of file whose contents will be presented to the client before authenticating when logging in to the CLI via the built-in SSH server. If ../banner is non-empty, the contents of the file will be appended to the value of ../banner.

confdConfig cli ssh dscp <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [0 .. 63]	Support for setting the Differentiated Services Code Point (6 bits) for traffic originating from the CLI for SSH connections.

confdConfig cli ssh enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true' ConfD will use the built in SSH server.

confdConfig cli ssh extralPorts <A>

**Input Parameters:**

Parameter	Type	Description
A	string	extralPorts is a leaf-list of pipe-separated ip:port pair, network namespace name and VRF interface name which the CLI also listens to for SSH connections. For IPv6 addresses, the syntax [ip]:port may be used. If the ':port' is omitted, /confdConfig/cli/ssh/port is used. If the 'netns' is omitted, /confdConfig/cli/ssh/netns is used. If the 'vrf' is omitted, /confdConfig/cli/ssh/vrf is used. Example:  <extralPorts>10.45.22.11:4777 netns=clins0 vrf=vrf0</extralPorts> <extralPorts>127.0.0.1 vrf=vrf1</extralPorts> <extralPorts> <extralPorts>:::88 netns=clins1</extralPorts> <extralPorts>[::]</extralPorts>

confdConfig cli ssh ip <A>

**Input Parameters:**

Parameter	Type	Description
A	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string   default '0.0.0.0'	ip is an IP address which the ConfD CLI should listen to for SSH sessions. 0.0.0.0 means that it listens to the port (/confdConfig/cli/ssh/port) for all IPv4 addresses on the machine.

confdConfig cli ssh netns <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The network namespace name where the listening socket should belong to.

confdConfig cli ssh port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '2024'	The port number for CLI SSH

confdConfig cli ssh vrf <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The VRF interface name to which the listening socket should bind.

confdConfig cli startupScriptNonInteractive <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	startupScriptNonInteractive is either 'true' or 'false'. If set to 'true' then a CLI startup script will be evaluated also for non-interactive sessions.

confdConfig cli stopLoadOnError <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	stopLoadOnError is either 'true' or 'false'. If 'false' then the 'load' command in the C and I-style CLIs will not terminate on the first error but continue to process commands from the file.

confdConfig cli strictRefsOnLoad <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	strictRefsOnLoad is either 'true' or 'false'. If 'false' then keyref/leafref targets does not have to exist when loading a config from a file. If set to 'true' then the target creation

		must appear earlier in the loaded file than the reference to the target. Note that there is a rather heavy performance penalty for loading files with many keyrefs when this is set to 'true', or for piping CLI commands into confd_cli.
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confdConfig cli style <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: j   c   i  default 'j'	style is either 'j', 'c', or 'i'. If 'j', then the CLI will be presented as a Juniper style CLI. If 'c' then the CLI will appear as Cisco XR style, and if 'i' then a Cisco IOS style CLI will be rendered.

confdConfig cli supportQuotedEOL <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	supportQuotedEOL is either 'true' or 'false'. If set to 'true' then a final backslash (\) on a line means that the next line will be concatenated with the previous line, similarly to a Linux Shell.

confdConfig cli suppressBurstErrors <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	suppressBurstErrors is either 'true' or 'false'. If 'true' then only the first error in a series of consecutive load errors will be reported. If set to 'false' then all errors will be reported.

confdConfig cli suppressCommitMessages

confdConfig cli suppressCommitMessages context <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Suppress commit messages from certain contexts. The values of 'context' should be the name of a context. For example 'system'

confdConfig cli suppressFastShow <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	suppressFastShow is either 'true' or 'false'. If 'true' then an internal API is used to determine if a configuration subtree contains any configuration. This avoids exploring the subtree when displaying the configuration.

confdConfig cli suppressNedErrors <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Description not available.

confdConfig cli suppressRangeKeyword <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	suppressRangeKeyword is either 'true' or 'false'. If 'true' then 'range' keyword is not allowed in C- and I-style for range expressions.

confdConfig cli tabExtend <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	tabExtend is either 'true' or 'false'. If 'true' the CLI will extend the current token to the next longer alternative.

confdConfig cli tableLabel <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	tableLabel is either 'true' or 'false'. If 'true' then tables displayed in C and I style CLI will have a relative location label to make it possible to know which table is displayed.

confdConfig cli tableLookAhead <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [1 .. max]  default '50'	The tableLookAhead element tells confd how many rows to pre-fetch when displaying a table. The prefetched rows are used for calculating the required column widths for the table. If set to a small number it is recommended to explicitly configure the column widths in the clispec file.

confdConfig cli tableOverflowTruncate <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	tableOverflowTruncate is either 'true' or 'false'. If 'true' then overflowing tables will be truncated instead of wrapped.

confdConfig cli templateFilter <A> callback <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Name of template filter.
B	string	Name of callback. The callback receives a string as first argument, optionally followed by the list of arguments given to the filter in the show template.

confdConfig cli timestamp

confdConfig cli timestamp clock24 <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	clock24 is either 'true' or 'false'. If 'true' the 24-hour time notation will be used when displaying hours. This configuration parameter takes effect for both existing and new sessions.

confdConfig cli timestamp enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true' the CLI will print a timestamp before the output of each command. This configuration parameter takes effect only for new sessions.

confdConfig cli timestamp format <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '\d{1,4}\m{1,5}\D{1,3}\H{r,2,0}:\t{r,2,0}:\s{r,2,0}.\c{1,3,0} UTC\u{l,1}\o{r,2,0}:\k{r,2,0}'	<p>Specifies the format of the timestamp. The string may contain a number of backslash-escaped special characters which are decoded as follows:</p> <p>\Y the current year (YYYY) \M the current month (1-12) \D the current day of month (1-31) \m the name of the current month (Jan, Feb, ...) \d the name of the current day of week (Mon, Tue, ...) \H the current hour (0-23 or 1-12) \t the current minute (0-59) \a am/pm (available only in 12-hour notation) \A AM/PM (available only in 12-hour notation) \s the current second (0-59) \c the current microsecond (0+) \u UTC offset sign (-/+ ) \o UTC offset hour (0-23 or 1-12) \k UTC offset minute (0-59)</p> <p>NOTE: the UTC offset characters \u, \o and \k can still be used even if the timezone (/ confdConfig/cli/timezone) is set to 'local'. The characters \a (am/pm) and \A (AM/PM) should only be used when clock24 (/ confdConfig/cli/timestamp/clock24) is set to 'false'.</p> <p>After each special character another character sequence can be specified in order to control the field width, alignment and padding character. The sequence can be either {A, W, P} or {A,W} where A is the</p>

		<p>alignment and can be either 'l' or 'r', W is the field width and P is the padding character. If P is not specified, ' ' will be used as the padding character. Example, the format '\d{l,4}\m{l,5}\D{l,3}\H{r,2,0}:\t{r,2,0}' would translate into 'Wed Jun 3 08:35'.</p> <p>This configuration parameter takes effect for both existing and new sessions.</p>
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confdConfig cli timezone <A>

**Input Parameters:**

Parameter	Type	Description
A	<p>enumeration</p> <p>One of:</p> <p>utc   local</p> <p>default 'local'</p>	Used to specify which timezone should be used when displaying the time in the CLI. If 'local' is specified then the timezone that is configured on the device will be used.

confdConfig cli topLevelCmdsInSubMode <A>

**Input Parameters:**

Parameter	Type	Description
A	<p>boolean</p> <p>default 'false'</p>	topLevelCmdsInSubMode is either 'true' or 'false'. If set to 'true' all top level commands in I and C-style CLI are available in sub modes.

confdConfig cli transactionCtrlCmds <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	transactionCtrlCmds is either 'true' or 'false'. If 'true', then the CLI will have commands

	default 'false'	for enabling and disabling transactions in configure mode, ie 'enable transactions' and 'disable transactions'. If set to 'false' no such commands will be present.
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confdConfig cli transactions <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Control whether commit should be supported in the CLI or not. When set to 'false' all commands will be automatically committed when the user presses ENTER in the CLI.

confdConfig cli trimDefaultSave <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>trimDefaultSave is either 'true' or 'false'. If 'true' then leaf nodes that have the same value as the default value will not be displayed even when explicitly configured to have that value. When set to 'false' such leaves will be displayed if explicitly configured to have the value. This setting applies to the save command.</p> <p>If this behavior is wanted, it is recommended to set /confdConfig/defaultHandlingMode to trim instead of using this parameter, in order to get a consistent behavior for all northbound interfaces.</p> <p>If the default handling mode is trim, explicitly configured values that are the same as the default value are never stored in the data store. This means that if the default handling mode is trim, this parameter has no effect.</p>

		This configuration parameter takes effect for both existing and new sessions.
--	--	---

confdConfig cli trimDefaultShow <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>trimDefaultShow is either 'true' or 'false'. If 'true' then leaf nodes that have the same value as the default value will not be displayed even when explicitly configured to have that value. When set to 'false' such leaves will be displayed if explicitly configured to have the value. This setting applies to show commands, ie show running-config and show config.</p> <p>If this behavior is wanted, it is recommended to set /confdConfig/defaultHandlingMode to trim instead of using this parameter, in order to get a consistent behavior for all northbound interfaces.</p> <p>If the default handling mode is trim, explicitly configured values that are the same as the default value are never stored in the data store. This means that if the default handling mode is trim, this parameter has no effect.</p> <p>This configuration parameter takes effect for both existing and new sessions.</p>

confdConfig cli turboParser reportNoExists <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If enabled, the Turbo Parser will report non existing configuration as errors to the caller.

confdConfig cli unifiedHistory <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If set to 'true' then the 'show history' command will display the unified command history, ie the command history from all modes. If set to 'false' then only the command history from the current mode will be shown. Also, if set to 'true' then the 'clear history' command will adopt the same behaviour as described above.

confdConfig cli useDoubleDotRanges <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	useDoubleDotRanges is either 'true' or 'false'. If 'true' then range expressions are types as 1..3, if set to 'false' then ranges are given as 1-3.

confdConfig cli useExposeNsPrefix <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	useExposeNsPrefix is either 'true' or 'false'. If 'true' then all nodes annotated with the tailf:cli-expose-ns-prefix will result in the namespace prefix being shown/required. If set to 'false' then the tailf:cli-expose-ns-prefix annotation will be ignored.

confdConfig cli useShortEnabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	useShortEnabled is either 'true' or 'false'. If set to 'true' then the CLI will display 'enabled' or 'disabled' in place of 'enabled true' and 'enabled false'.

confdConfig cli utcOffset <A>

**Input Parameters:**

Parameter	Type	Description
A	int64  default '0'	If the timezone is set to UTC this can be set to specify the UTC offset measured in minutes.

confdConfig cli waitLockedConfigMode <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	waitLockedConfigMode is either 'true' or 'false'. This setting controls the behaviour when trying to enter configure mode while another entity is locking the database, e.g. some other commit is in progress or some managed object is locking the database. If set to 'true' then the CLI will wait with entering configure mode, rendering the CLI unusable until the database is unlocked. If set to 'false' the CLI will not wait but instead display an error message.

confdConfig cli whoHistoryDateTimeFormat <A>

**Input Parameters:**

Parameter	Type	Description
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A	enumeration One of: long   short  default 'short'	whoHistoryDateTimeFormat decides if the date should always include the date (long), or only include the date when different from today (short).
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confdConfig cli whoShowMode <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	whoShowMode is either 'true' or 'false'. If set to 'true' then an 'Config Mode' column will be added to the table shown when issuing the 'who' command in C- and I-mode.

confdConfig cli withDefaults <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>DEPRECATED - use /confdConfig/defaultHandlingMode instead to control this behavior consistently for all northbound interfaces. Set /confdConfig/defaultHandlingMode to report-all to display default values.</p> <p>withDefaults is either 'true' or 'false'. If 'false' then leaf nodes that have their default values will not be shown when the user displays the configuration, unless the user gives the 'details' option to the 'show' command.</p> <p>This is useful when there are many settings which are seldom used. When set to 'false' only the values actually modified by the user will be shown.</p>

confdConfig cli wrapInfo <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	wrapInfo is either 'true' or 'false'. If 'false' then the CLI will not automatically wrap the info field in 'Possible completion:' listings. If set to 'true' then the info text will be word-wrapped and indented.

confdConfig cli wrapPrompt <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	wrapPrompt is either 'true' or 'false'. If 'false' then the CLI will not automatically word wrap the prompt when prompting the user for some input. If set to 'true' then the prompt will be word-wrapped according to the current terminal width.

confdConfig encryptedStrings

confdConfig encryptedStrings AESCFB128

confdConfig encryptedStrings AESCFB128 key <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig encryptedStrings AESCFB128 initVector <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig encryptedStrings DES3CBC

confdConfig encryptedStrings DES3CBC key1 <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig encryptedStrings DES3CBC key2 <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig encryptedStrings DES3CBC key3 <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig encryptedStrings DES3CBC initVector <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig encryptedStrings externalKeys

confdConfig encryptedStrings externalKeys command <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Path to command executed to output keys.

confdConfig encryptedStrings externalKeys commandArgument <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Argument available in externalKeys command as the environment variable CONF_EXTERNAL_KEYS_ARGUMENT.

confdConfig encryptedStrings externalKeys commandTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	union string	Command timeout. Timeout is measured between complete lines read from the output.

	enumeration One of: infinity	
	default 'PT60S'	

confdConfig hideGroup <A> callback <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Name of hide group. This name should correspond to a hide group name in some data model.
B	string	<p>A callback can optionally be specified for a hide group. If no callback or password is given then the hide group can be unhidden without giving a password.</p> <p>If a callback is specified then the hide group cannot be enabled unless a password is entered and the callback successfully verifies the password. Using a callback it is possible to have short lived unhide passwords and per-user unhide passwords.</p> <p>The callback must be registered as a command() callback with confd_register_action_cbs(), see confd_lib_dp(3). The 'path' argument to the callback is always 'hidegroup', while argv[0] is the name of the hide group, argv[1] is the name of the user issuing the unhide command, and argv[2] is the given password. The callback should return CONFD_OK to allow the unhiding, otherwise CONFD_ERR.</p>

confdConfig hideGroup <A> password <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Name of hide group. This name should correspond to a hide group name in some data model.
B	string  default "	<p>A password can optionally be specified for a hide group. If no password or callback is given then the hide group can be unhidden without giving a password.</p> <p>If a password is specified then the hide group cannot be enabled unless the password is entered.</p> <p>To completely disable a hide group, ie make it impossible to unhide it, remove the entire hideGroup container for that hide group.</p>

confdConfig logs

confdConfig logs auditLog

confdConfig logs auditLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the log is enabled.

confdConfig logs auditLog file

confdConfig logs auditLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs auditLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.

confdConfig logs auditLog syslog

confdConfig logs auditLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.

confdConfig logs auditLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
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A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.
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confdConfig logs auditLogCommit <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>Controls whether the audit log should include messages about the resulting configuration changes for each commit to the running data store. This configuration parameter takes effect for both existing and new sessions. If set to 'true', the audit log will include entries of the form:</p> <pre>commit thandle &lt;N&gt; begin [confirmed [extended]] commit thandle &lt;N&gt; comment &lt;comment&gt; commit thandle &lt;N&gt; label &lt;label&gt; commit thandle &lt;N&gt; &lt;path&gt; created commit thandle &lt;N&gt; &lt;path&gt; deleted commit thandle &lt;N&gt; &lt;path&gt; moved first commit thandle &lt;N&gt; &lt;path&gt; moved after {&lt;keys&gt;} commit thandle &lt;N&gt; &lt;path&gt; set to '&lt;value&gt;' commit thandle &lt;N&gt; &lt;path&gt; default set (&lt;value&gt;) (*) commit thandle &lt;N&gt; &lt;path&gt; attribute '&lt;name&gt;' set to '&lt;value&gt;' commit thandle &lt;N&gt; &lt;path&gt; attribute '&lt;name&gt;' deleted commit thandle &lt;N&gt; end commit confirmed completed commit confirmed canceled</pre> <p>(*) The presence of these entries are controlled by the parameter auditLogCommitDefaults.</p> <p>The 'commit thandle &lt;N&gt; begin' entry indicates the start of a commit for the transaction with handle N. This is followed by a 'commit thandle &lt;N&gt; comment &lt;comment&gt;' entry and/or a 'commit thandle</p>

		<p>&lt;N&gt; label &lt;label&gt;' entry if a commit comment and/or label was given, then a number of 'commit thandle &lt;N&gt; &lt;path&gt; ...' entries detailing the changes, and finally a 'commit thandle &lt;N&gt; end' entry.</p> <p>If 'begin' is followed by 'confirmed', it means that the changes are part of a confirmed commit that will not be permanent until a 'commit confirmed completed' entry is logged - if 'commit confirmed canceled' is logged instead, the changes have been reverted. If 'begin confirmed' is followed by 'extended', it means that the changes are part of a confirmed commit that extends a confirmed commit that is already in progress.</p>
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confdConfig logs auditLogCommitDefaults <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>If this leaf is set to 'true', then the auditCommitLog will contain entries on the form:</p> <p>commit thandle &lt;N&gt; &lt;path&gt; default set (&lt;value&gt;)</p> <p>Adding these entries can have a performance impact.</p>

confdConfig logs auditNetworkLog

confdConfig logs auditNetworkLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the log is enabled.
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confdConfig logs auditNetworkLog file

confdConfig logs auditNetworkLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs auditNetworkLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.

confdConfig logs auditNetworkLog syslog

confdConfig logs auditNetworkLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.
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confdConfig logs auditNetworkLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.

confdConfig logs confdLog

confdConfig logs confdLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the log is enabled.

confdConfig logs confdLog file

confdConfig logs confdLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs confdLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.

confdConfig logs confdLog syslog

confdConfig logs confdLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.

confdConfig logs confdLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
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A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.
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confdConfig logs developerLog

confdConfig logs developerLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the log is enabled.

confdConfig logs developerLog file

confdConfig logs developerLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs developerLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.

confdConfig logs developerLog syslog

confdConfig logs developerLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.

confdConfig logs developerLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.

confdConfig logs developerLogLevel <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: error   info   trace  default 'info'	Controls which level of developer messages are printed in the developer log. This configuration parameter takes effect for both existing and new sessions.

confdConfig logs errorLog

confdConfig logs errorLog filename <A>

**Input Parameters:**

Parameter	Type	Description
A	string	filename is the full path to the actual log file. This parameter must be set if the errorLog is enabled.

confdConfig logs errorLog debug

confdConfig logs errorLog debug enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Description not available.

confdConfig logs errorLog debug level <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16  default '2'	Description not available.

confdConfig logs errorLog debug tag <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

confdConfig logs errorLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', error logging is performed. This configuration parameter takes effect for both existing and new sessions.

confdConfig logs errorLog maxSize <A>

**Input Parameters:**

Parameter	Type	Description
A	string {pattern = S(\d+G)?(\d+M)?(\d+K)?(\d+B)?}	maxSize is the maximum size of an individual log file before it is rotated. Log

	default 'S1M'	filenames are reused when five logs have been exhausted. This configuration parameter takes effect for both existing and new sessions.
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confdConfig logs jsonrpcLog

confdConfig logs jsonrpcLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the log is enabled.

confdConfig logs jsonrpcLog file

confdConfig logs jsonrpcLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs jsonrpcLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.
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confdConfig logs jsonrpcLog syslog

confdConfig logs jsonrpcLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.

confdConfig logs jsonrpcLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.

confdConfig logs netconfLog

confdConfig logs netconfLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the log is enabled.

confdConfig logs netconfLog file

confdConfig logs netconfLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs netconfLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.

confdConfig logs netconfLog logReplyStatus <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	When set to 'true', ConfD extends netconf log with rpc-reply status ('ok' or 'error').
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confdConfig logs netconfLog syslog

confdConfig logs netconfLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.

confdConfig logs netconfLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.

confdConfig logs netconfTraceLog

confdConfig logs netconfTraceLog filename <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the file where the NETCONF traffic trace log is written.

confdConfig logs netconfTraceLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', all NETCONF traffic is logged. This configuration parameter takes effect for both existing and new sessions.

confdConfig logs netconfTraceLog format <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: pretty   raw  default 'pretty'	The value 'pretty' means that the XML data is pretty-printed. The value 'raw' means that it is not. This configuration parameter takes effect for both existing and new sessions.

confdConfig logs progressTrace

confdConfig logs progressTrace dir <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The directory path to the location of the progress trace files.

confdConfig logs progressTrace enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', progress trace files are written to the configured directory.

confdConfig logs snmpGatewayLog

confdConfig logs snmpGatewayLog filename <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the file where the snmp gateway log is written.

confdConfig logs snmpGatewayLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the SNMP Gateway log is used.

confdConfig logs snmpGatewayLog northbound <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', all requests towards the snmp gateway are logged.

confdConfig logs snmpGatewayLog southbound <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', all requests done by the snmp gateway are logged.

confdConfig logs snmpLog

confdConfig logs snmpLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the log is enabled.

confdConfig logs snmpLog file

confdConfig logs snmpLog file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string	name is the full path to the actual log file.

confdConfig logs snmpLog file enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', file logging is enabled.

confdConfig logs snmpLog syslog

confdConfig logs snmpLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.

confdConfig logs snmpLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.

confdConfig logs snmpLogLevel <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: error   info  default 'info'	Controls which level of SNMP pdus are printed in the SNMP log. The value 'error' means that only PDUs with error-status not equal to 'noError' are printed.

confdConfig logs syslogConfig

confdConfig logs syslogConfig facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of:	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This facility setting is the default facility. It's also possible to set individual facilities in the

	daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]    default 'daemon'	different logs below. Furthermore with the syslogServers container described below it is possible to set default facility on a per server basis. If facility is explicitly set for a log type, that item is used.
--	---	---

confdConfig logs syslogConfig syslogServers

confdConfig logs syslogConfig syslogServers server <A> enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	union union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	host is either a domain name or an IPv4/IPv6 network address. UDP syslog messages are sent to this host.
B	boolean   default 'true'	enabled is either 'true' or 'false'. If 'false', this syslog server will not get any udp messages.

confdConfig logs syslogConfig syslogServers server <A> facility <B>

**Input Parameters:**

Parameter	Type	Description
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A	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	host is either a domain name or an IPv4/IPv6 network address. UDP syslog messages are sent to this host.
B	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]  default 'daemon'	facility is either 'daemon', 'local0', ..., 'local7' or an unsigned integer.

confdConfig logs syslogConfig syslogServers server <A> port <B>

#### Input Parameters:

Parameter	Type	Description
A	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	host is either a domain name or an IPv4/IPv6 network address. UDP syslog messages are sent to this host.
B	uint16 [0..65535]	port is the UDP port number where this syslog server is listening.

	default '514'	
--	---------------	--

confdConfig logs syslogConfig syslogServers server <A> version <B>

**Input Parameters:**

Parameter	Type	Description
A	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)}{3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	host is either a domain name or an IPv4/IPv6 network address. UDP syslog messages are sent to this host.
B	enumeration One of: bsd   1  default 'bsd'	version is either 'bsd' (traditional syslog) or '1' (new IETF syslog format: draft-ietf-syslog-protocol-16.txt).

confdConfig logs syslogConfig udp

confdConfig logs syslogConfig udp host <A>

**Input Parameters:**

Parameter	Type	Description
A	union union string	host is either a domain name or an IPv4/IPv6 network address. UDP syslog messages are sent to this host.

	<pre>{pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9] 2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}</pre>	
	string	
	string {length = 1..253}	

confdConfig logs syslogConfig udp enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'false', messages will be sent to the local syslog daemon.

confdConfig logs syslogConfig udp port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '514'	port is a valid port number to be used in combination with /confdConfig/logs/syslogConfig/udp/host.

confdConfig logs syslogConfig version <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of:	version is either 'bsd' (traditional syslog) or '1' (new IETF syslog format: draft-ietf-

	bsd   1  default 'bsd'	syslog-protocol-16.txt). '1' implies that / confdConfig/logs/syslogConfig/udp/enabled must be set to 'true'.
--	------------------------------	--

confdConfig logs webuiAccessLog

confdConfig logs webuiAccessLog dir <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The path to the directory whereas the access log should be written to.

confdConfig logs webuiAccessLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the access log is used.

confdConfig logs webuiAccessLog syslog

confdConfig logs webuiAccessLog syslog enabled <A>

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', syslog messages are sent.
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confdConfig logs webuiAccessLog syslog facility <A>

**Input Parameters:**

Parameter	Type	Description
A	union enumeration One of: daemon   authpriv   local0   local1   local2   local3   local4   local5   local6   local7  uint32 [min .. 2147483647]	facility is either 'daemon', 'authpriv', 'local0', ..., 'local7' or an unsigned integer. This optional value overrides the / confdConfig/logs/syslogConfig/facility for this particular log.

confdConfig logs webuiAccessLog trafficLog <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Is either 'true' or 'false'. If 'true', all HTTP(S) traffic towards the embedded Web server is logged in a log file named 'traffic.trace'. The log file can be used to debugging JSON-RPC/REST/RESTCONF. Beware: Do not use this log in a production setting. This log is not enabled by default and is not rotated, i.e. use logrotate(8).

confdConfig logs webuiBrowserLog

confdConfig logs webuiBrowserLog filename <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Deprecated. Should not be used.

confdConfig logs webuiBrowserLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Deprecated. Should not be used.

confdConfig logs xpathTraceLog

confdConfig logs xpathTraceLog filename <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the file where the XPath trace log is written.

confdConfig logs xpathTraceLog enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	enabled is either 'true' or 'false'. If 'true', all XPath execution is logged.

	default 'false'	
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confdConfig netconf

confdConfig netconf enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the NETCONF server is started. If 'false' the NETCONF server is stopped and any existing sessions are closed.

confdConfig netconf extendedSessions <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	<p>If extendedSessions are enabled, all ConfD sessions can be terminated using &lt;kill-session&gt;, i.e. not only can other NETCONF session be terminated, but also CLI sessions, Webui sessions etc. If such a session holds a lock, it's session id will be returned in the &lt;lock-denied&gt;, instead of '0'.</p> <p>Strictly speaking, this extension is not covered by the NETCONF specification; therefore it's 'false' by default.</p>

confdConfig netconf idleTimeout <A>

**Input Parameters:**

Parameter	Type	Description
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A	string  default 'PT0S'	<p>Maximum idle time before terminating a NETCONF session. If the session is waiting for notifications, or has a pending confirmed commit, the idle timeout is not used. The default value is 0, which means no timeout. Will be silently capped to 49 days 17 hours.</p> <p>Modification of this value will only affect connections that are established after the modification has been done.</p>
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confdConfig netconf maxBatchProcesses <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded  default 'unbounded'	<p>Controls how many concurrent NETCONF batch processes there can be at any time. A batch process can be started by the server if a new NETCONF operation is implemented as a batch operation. See the NETCONF chapter in the ConfD User's Guide for details.</p>

confdConfig netconf rpcErrors <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: close   inline  default 'close'	<p>If rpcErrors is 'inline', and an error occurs during the processing of a &lt;get&gt; or &lt;get-config&gt; request when ConfD tries to fetch some data from a data provider, ConfD will generate an rpc-error element in the faulty element, and continue to process the next element.</p> <p>If an error occurs and rpcErrors is 'close', the NETCONF transport is closed by ConfD.</p>

confdConfig netconf sendDefaults <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	DEPRECATED - use /confdConfig/defaultHandlingMode instead to control this behavior consistently for all northbound interfaces.  If sendDefaults is 'true', default values will be included in the replies to <get>, <get-config>, and <copy-config>. If sendDefaults is 'false', default values will not be included by default.  If /confdConfig/netconf/capabilities/with-defaults is enabled, this behavior can be controlled by the NETCONF client.

confdConfig netconf transport

confdConfig netconf transport ssh

confdConfig netconf transport ssh dscp <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [0 .. 63]	Support for setting the Differentiated Services Code Point (6 bits) for traffic originating from the NETCONF server for SSH connections.

confdConfig netconf transport ssh enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the NETCONF server uses SSH as a transport service.

confdConfig netconf transport ssh extralPorts <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>extralPorts is a leaf-list of pipe-separated ip:port pair, network namespace name and VRF interface name which the NETCONF server also listens to for SSH connections. For IPv6 addresses, the syntax [ip]:port may be used. If the ':port' is omitted, /confdConfig/netconf/transport/ssh/port is used. If the 'netns' is omitted, /confdConfig/netconf/transport/ssh/netns is used. If the 'vrf' is omitted, /confdConfig/netconf/transport/ssh/vrf is used. Example:</p> <pre>&lt;extralPorts&gt;10.45.22.11:4777  netns=ncns vrf=vrf0&lt;/extralPorts&gt; &lt;extralPorts&gt;127.0.0.1 vrf=vrf1&lt;/ extralPorts&gt; &lt;extralPorts&gt;:::88  netns=ncns1&lt;/extralPorts&gt; &lt;extralPorts&gt;[:]&lt;/extralPorts&gt;</pre>

confdConfig netconf transport ssh ip <A>

**Input Parameters:**

Parameter	Type	Description
A	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	ip is an IP address which the ConfD NETCONF server should listen to. 0.0.0.0 means that it listens to the port (/confdConfig/netconf/transport/ssh/port) for all IPv4 addresses on the machine.

	default '0.0.0.0'	
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confdConfig netconf transport ssh netns <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The network namespace name where the listening socket should belong to.

confdConfig netconf transport ssh port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '830'	port is a valid port number to be used in combination with /confdConfig/netconf/transport/ssh/ip. Note that the standard port for NETCONF over SSH is 830.

confdConfig netconf transport ssh vrf <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The VRF interface name to which the listening socket should bind.

confdConfig netconf transport sshCallHomeExecutable <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The full path to an executable program that starts a NETCONF call home session over SSH. Must be used when the internal SSH stack in ConfD is not enabled.

confdConfig netconf transport tcp

confdConfig netconf transport tcp dscp <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [0 .. 63]	Support for setting the Differentiated Services Code Point (6 bits) for traffic originating from the NETCONF server for TCP connections.

confdConfig netconf transport tcp enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the NETCONF server uses clear text TCP as a transport service.

confdConfig netconf transport tcp extralPorts <A>

**Input Parameters:**

Parameter	Type	Description
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A	string	<p>extralPorts is a leaf-list of pipe-separated ip:port pair, network namespace name and VRF interface name which the NETCONF server also listens to for TCP connections. For IPv6 addresses, the syntax [ip]:port may be used. If the ':port' is omitted, /confdConfig/netconf/transport/tcp/port is used. If the 'netns' is omitted, /confdConfig/netconf/transport/tcp/netns is used. If the 'vrf' is omitted, /confdConfig/netconf/transport/tcp/vrf is used. Example:</p> <pre>&lt;extralPorts&gt;10.45.22.11:4777  netns=ncns vrf=vrf0&lt;/extralPorts&gt; &lt;extralPorts&gt;127.0.0.1 vrf=vrf1&lt;/ extralPorts&gt; &lt;extralPorts&gt;:::88  netns=ncns1&lt;/extralPorts&gt; &lt;extralPorts&gt;[:]&lt;/extralPorts&gt;</pre>
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confdConfig netconf transport tcp ip <A>

**Input Parameters:**

Parameter	Type	Description
A	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string   default '127.0.0.1'	<p>ip is an IP address which the ConfD NETCONF server should listen to. 0.0.0.0 means that it listens to the port (/confdConfig/netconf/transport/tcp/port) for all IPv4 addresses on the machine.</p>

confdConfig netconf transport tcp netns <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The network namespace name where the listening socket will belong to.

confdConfig netconf transport tcp port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '2023'	port is a valid port number to be used in combination with /confdConfig/netconf/transport/tcp/ip.

confdConfig netconf transport tcp vrf <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The VRF interface name to which the listening socket should bind.

confdConfig netconf writeTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT0S'	<p>Maximum time for a write operation towards a client to complete. If the time is exceeded, the NETCONF session is terminated. The default value is 0, which means no timeout.</p> <p>Modification of this value will only affect connections that are established after the modification has been done.</p>

confdConfig notifications

confdConfig notifications eventStreams stream <A> description <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.
B	string	A descriptive text attached to a specific event stream.

confdConfig notifications eventStreams stream <A> replaySupport <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.
B	boolean	Signals if replay support is available for a specific event stream.

confdConfig notifications eventStreams stream <A> builtinReplayStore

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.

confdConfig notifications eventStreams stream <A> builtinReplayStore dir <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.
B	string	The wrapping log files will be put in this disk location.

confdConfig notifications eventStreams stream <A> builtinReplayStore maxFiles <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.
B	int64 [2 .. max]	The max number of log wrap files. The recommended setting is around 50 files.

confdConfig notifications eventStreams stream <A> builtinReplayStore maxSize <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.
B	string {pattern = S(\d+G)?(\d+M)?(\d+K)?(\d+B)?}	The max size of each log wrap file. The recommended setting is approximately S10M.

confdConfig notifications eventStreams stream <A> builtinReplayStore enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name attached to a specific event stream.
B	boolean  default 'false'	enabled is either 'true' or 'false'. If 'false', the applications must implement its own replay support.

confdConfig opcache

confdConfig opcache timeout <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]	The amount of time to keep data in the cache, in seconds.

confdConfig opcache enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the cache is enabled.

confdConfig parserLimits

confdConfig parserLimits maxAttributeCount <A>

**Input Parameters:**

Parameter	Type	Description
A	union union uint32  enumeration One of: unbounded	Maximum number of attributes on a single tag.

	enumeration One of: model          default '64'	
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confdConfig parserLimits maxAttributeLength <A>

**Input Parameters:**

Parameter	Type	Description
A	union union uint32  enumeration One of: unbounded  enumeration One of: model     default '1024'	Maximum number of bytes for attribute names including namespace prefix.

confdConfig parserLimits maxAttributeValueLength <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded	Maximum number of bytes for attribute values in escaped form.

	default '16384'	
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confdConfig parserLimits maxDataLength <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded  default 'unbounded'	Maximum number of bytes of continuous data.

confdConfig parserLimits maxTagLength <A>

**Input Parameters:**

Parameter	Type	Description
A	union union uint32  enumeration One of: unbounded  enumeration One of: model  default '1024'	Maximum number of bytes for tag names including namespace prefix.

confdConfig parserLimits maxXmlnsCount <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded  default '1024'	Maximum number of xmlns declarations on a single tag.

confdConfig parserLimits maxXmlnsPrefixLength <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: unbounded  default '1024'	Maximum number of bytes for xmlns prefix.

confdConfig parserLimits maxXmlnsValueLength <A>

**Input Parameters:**

Parameter	Type	Description
A	union union uint32  enumeration One of:	Maximum number of bytes for a namespace value in escaped form.

	unbounded	
	enumeration One of: model	
	default '1024'	

confdConfig proxyForwarding

confdConfig proxyForwarding autoLogin <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	autoLogin is either 'true' or 'false'. If 'true', ConfD will try to login to the target system with the current session's credentials, if it has access to them. In order for ConfD to get access to the session credentials, the builtin SSH daemon must be used.

confdConfig proxyForwarding proxy <A> address <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the proxy target. It is used as a unique identifier of the proxy target. This is the target name that users give when they want to connect to the target.  The name is included in the proxy events (see confd_lib_events(3)) generated by ConfD.
B	union	The IP address of the proxy target system.

	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9] 25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	
--	--	--

confdConfig proxyForwarding proxy <A> cli

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the proxy target. It is used as a unique identifier of the proxy target. This is the target name that users give when they want to connect to the target.</p> <p>The name is included in the proxy events (see confd_lib_events(3)) generated by ConfD.</p>

confdConfig proxyForwarding proxy <A> cli ssh port <B>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the proxy target. It is used as a unique identifier of the proxy target. This is the target name that users give when they want to connect to the target.</p> <p>The name is included in the proxy events (see confd_lib_events(3)) generated by ConfD.</p>
B	uint16 [0..65535]	The port where the proxy target listens for CLI SSH connections.

	default '22'	
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confdConfig proxyForwarding proxy <A> netconf

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the proxy target. It is used as a unique identifier of the proxy target. This is the target name that users give when they want to connect to the target.</p> <p>The name is included in the proxy events (see confd_lib_events(3)) generated by ConfD.</p>

confdConfig proxyForwarding proxy <A> netconf ssh port <B>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the proxy target. It is used as a unique identifier of the proxy target. This is the target name that users give when they want to connect to the target.</p> <p>The name is included in the proxy events (see confd_lib_events(3)) generated by ConfD.</p>
B	uint16 [0..65535]  default '2022'	The port where the proxy target listens for NETCONF SSH connections.

confdConfig proxyForwarding proxy <A> netconf tcp port <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the proxy target. It is used as a unique identifier of the proxy target. This is the target name that users give when they want to connect to the target.  The name is included in the proxy events (see <code>confd_lib_events(3)</code> ) generated by ConfD.
B	uint16 [0..65535]  default '2023'	The port where the proxy target listens for NETCONF TCP connections.

`confdConfig rest`

`confdConfig rest customHeaders`

`confdConfig rest customHeaders header <A> value <B>`

**Input Parameters:**

Parameter	Type	Description
A	string	RFC 7230 field-name, e.g. Accept-Control-Allow-Origin
B	string	RFC 7230 field-value, e.g. http://www.cisco.com

`confdConfig rest enabled <A>`

**Input Parameters:**

Parameter	Type	Description
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A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the REST API is enabled.
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confdConfig rest showHidden <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Hidden nodes are not shown by default in REST. Such nodes can be unhidden to the REST client by including the query parameter 'unhide', which is a comma separated list of  <hide-group-name>[:<passwd>]  If showHidden is set to 'true', hidden nodes are always shown in the REST API.

confdConfig restconf

confdConfig restconf customHeaders

confdConfig restconf customHeaders header <A> value <B>

**Input Parameters:**

Parameter	Type	Description
A	string	RFC 7230 field-name, e.g. Accept-Control-Allow-Origin
B	string	RFC 7230 field-value, e.g. http://www.cisco.com

confdConfig restconf enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the RESTCONF API is enabled.

confdConfig restconf requireModuleName

confdConfig restconf requireModuleName enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	When set to 'true', the client must explicitly provide the module name of the node if it is defined in a module other than its parent node or its parent node is the datastore. When set to 'false', this configuration parameter allows the client to bypass above requirements. Refer to RFC 8040, section 3.5.3 for detailed information.

confdConfig restconf rootResource <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'restconf'	The RESTCONF root resource path.

confdConfig restconf schemaServerUrl <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>Change the schema element in the ietf-yang-library:modules-state resource response.</p> <p>It is possible to use the placeholders @X_FORWARDED_HOST@ and @X_FORWARDED_PORT@ in order to set the schema URL with HTTP headers X-Forwarded-Host and X-Forwarded-Port, e.g. https://@X_FORWARDED_HOST@:@X_FORWARDED_PORT@.</p>

confdConfig restconf tokenResponse

confdConfig restconf tokenResponse tokenCookie

confdConfig restconf tokenResponse tokenCookie directives <A>

**Input Parameters:**

Parameter	Type	Description
A	string	An optional string with directives appended to the cookie, exactly as it is to be sent.
	default "	

confdConfig restconf tokenResponse tokenCookie name <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default "	The cookie name, exactly as it is to be sent. If configured, a HTTP cookie of that name included in the response with any token returned from AAA as value.

confdConfig restconf tokenResponse xAuthToken <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Either 'true' or 'false'. If 'true', a x-auth-token header is included in the response with any token returned from AAA.

confdConfig sessionLimits

confdConfig sessionLimits configSessionLimit <A> maxSessions <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The context is either one of cli, netconf, webui, snmp, rest, or it can be any other context string defined through the use of MAAPI. As an example, if we use MAAPI to implement a CORBA interface to ConfD, our MAAPI program could send the string 'corba' as context.
B	union uint32  enumeration One of: unbounded	Puts a limit to the total number of concurrent configuration sessions to ConfD for the corresponding context. This configuration parameter takes effect only for new sessions.

confdConfig sessionLimits maxConfigSessions <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [2..15]  default '10'	Puts a limit to the total number of concurrent configuration sessions to ConfD. This configuration parameter takes effect only for new sessions.

confdConfig sessionLimits maxSessions <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [2..15]  default '10'	Puts a limit to the total number of concurrent sessions to ConfD. This configuration parameter takes effect only for new sessions.

confdConfig sessionLimits sessionLimit <A> maxSessions <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The context is either one of cli, netconf, webui, snmp, rest, or it can be any other context string defined through the use of MAAPI. As an example, if we use MAAPI to implement a CORBA interface to ConfD, our MAAPI program could send the string 'corba' as context.
B	union uint32  enumeration One of: unbounded	Puts a limit to the total number of concurrent sessions to ConfD. This configuration parameter takes effect only for new sessions.

confdConfig snmpAgent

confdConfig snmpAgent authenticationFailureNotifyName <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default ''	When the SNMP agent sends the standard authenticationFailure notification, it is delivered to the management targets defined for the snmpNotifyName in the snmpNotifyTable in SNMP-NOTIFICATION-MIB (RFC 3413). If authenticationFailureNotifyName is the empty string (default), the notification is delivered to all management targets.

confdConfig snmpAgent candidate

confdConfig snmpAgent candidate maxLockWait <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT0S'	If the candidate is locked by another user session, the SNMP Agent will send a resourceUnavailable response unless the candidate becomes available for locking within this time period. The default value is PT0S, which means the error response will be sent immediately.

confdConfig snmpAgent candidate pendingChangesAction <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: continue   fail  default 'continue'	If there are pending changes in the candidate when the SNMP Agent attempts to lock it, these will be discarded (continue) or the lock will not be taken and the SNMP request will fail with resourceUnavailable (fail). The default value is continue.

confdConfig snmpAgent contexts <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	contexts is a leaf-list of context names which this SNMP Agent, i.e. one or more external data providers recognize in addition to the empty context, "".

confdConfig snmpAgent dropWhenInUse <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Whenever a set request cannot be completed, due to competing actions (typically CDB clients, or other transactions) preventing the SNMP Agent from taking the required locks on configuration stores and data providers affected by the request, the SNMP Agent will respond to the set request with an 'in use' error. If dropWhenInUse is 'true', the SNMP Agent will silently drop the request instead.

confdConfig snmpAgent dscp <A>

**Input Parameters:**

Parameter	Type	Description
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A	uint8 [0 .. 63]	Support for setting the Differentiated Services Code Point (6 bits) for traffic originating from the SNMP agent.
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confdConfig snmpAgent enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the SNMP agent is enabled.

confdConfig snmpAgent extralpPorts <A>

**Input Parameters:**

Parameter	Type	Description
A	string	extralpPorts is a leaf-list of pipe-separated ip:port pair, network namespace name and VRF interface name which the SNMP agent also listens to. For IPv6 addresses, the syntax [ip]:port may be used. If the 'port' is omitted, /confdConfig/snmpAgent/port is used. If the 'netns' is omitted, /confdConfig/snmpAgent/netns is used. If the 'vrf' is omitted, /confdConfig/snmpAgent/vrf is used. Example:  <pre>&lt;extralpPorts&gt;10.45.22.11:4777  netns=snmpans0 vrf=vrf0&lt;/extralpPorts&gt; &lt;extralpPorts&gt;127.0.0.1 vrf=vrf1&lt;/ extralpPorts&gt; &lt;extralpPorts&gt;:::88  netns=snmpans1&lt;/extralpPorts&gt; &lt;extralpPorts&gt;[::]&lt;/extralpPorts&gt;</pre>

confdConfig snmpAgent ip <A>

**Input Parameters:**

Parameter	Type	Description
A	union string {pattern = (([0-9] [1-9][0-9] 1[0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string   default '0.0.0.0'	ip is an IP address which the ConfD SNMP agent should listen to. 0.0.0.0 means that it listens to the port (/confdConfig/snmpAgent/port) for all IPv4 addresses on the machine.

confdConfig snmpAgent mibs

confdConfig snmpAgent mibs file <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>file is the location of a MIB file that should be loaded into the SNMP agent. For example: &lt;file&gt;./TAIL-F-TEST-MIB.bin&lt;/file&gt;. The MIB file must be in binary format (.bin) produced with the confdc compiler. For loading of a built-in MIB no path must be given.</p> <p>Example: &lt;file&gt;SNMP-USER-BASED-SM-MIB.bin&lt;/file&gt;.</p> <p>See the ConfD User Guide for more information about loading MIBs into the SNMP agent.</p>

confdConfig snmpAgent mibs fromLoadPath <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If 'true', any '.bin' file found in the / confdConfig/loadPath is loaded at startup. Bult-in MIBs must still be listed explicitly using the 'file' element.

confdConfig snmpAgent netns <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The network namespace name where the listening socket will belong to.

confdConfig snmpAgent port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '161'	port is a valid port number to be used in combination with /confdConfig/snmpAgent/ip.

confdConfig snmpAgent sessionIgnorePort <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If 'true', the SNMP Agent will consider requests originating from one and the same IP Address, and using the same security name, as related, regardless of source port. Per default, the SNMP Agent will consider requests originating from one and the same IP Address and port, and using the same security name, as related. Related requests

	are handled in the same user session. This is absolutely necessary for achieving good performance when processing consecutive get-next requests, as during SNMP walks.
--	--

confdConfig snmpAgent snmpEngine

confdConfig snmpAgent snmpEngine snmpEngineID <A>

**Input Parameters:**

Parameter	Type	Description
A	string {pattern = ([0-9a-fA-F]){2}(:([0-9a-fA-F]){2})*)?}	The name of the SNMP engine. snmpEngineID is defined in the SNMP-FRAMEWORK-MIB (RFC 3411).

confdConfig snmpAgent snmpEngine snmpEngineMaxMessageSize <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]  default '50000'	The maximum size of SNMP messages that the agent can send or receive. The snmpEngineMaxMessageSize is defined in the SNMP-FRAMEWORK-MIB (RFC 3411).

confdConfig snmpAgent snmpVersions

confdConfig snmpAgent snmpVersions v1 <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Setting the value to 'true' will enable SNMP v1 in the SNMP agent.

confdConfig snmpAgent snmpVersions v2c <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Setting the value to 'true' will enable SNMP v2c in the SNMP agent.

confdConfig snmpAgent snmpVersions v3 <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Setting the value to 'true' will enable SNMP v3 in the SNMP agent.

confdConfig snmpAgent system

confdConfig snmpAgent system sysDescr <A>

**Input Parameters:**

Parameter	Type	Description
A	string	A textual description of the entity. This value should include the full name and version

		identification of the system's hardware type, software operating-system, and networking software. The sysDescr is defined in the SNMPv2-MIB (RFC 3418).
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confdConfig snmpAgent system sysObjectID <A>

**Input Parameters:**

Parameter	Type	Description
A	string {pattern = (([0-1](\.[1-3]?[0-9])) (2\.(0 ([1-9]\d*))))(\.(0 ([1-9]\d*)))*)}	The vendor's authoritative identification of the network management subsystem contained in the entity. The sysObjectID is defined in the SNMPv2-MIB (RFC 3418).

confdConfig snmpAgent system sysORTable

confdConfig snmpAgent system sysORTable sysOREntry <A> sysORDescr <B>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]	The index for this row in the table.
B	string	A textual description of capabilities defined in sysORID.

confdConfig snmpAgent system sysORTable sysOREntry <A> sysORID <B>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]	The index for this row in the table.

B	string {pattern = (([0-1](\.[1-3]?[0-9])) (2\.(0 ([1-9]\d*)))(\.(0 ([1-9]\d*)))*}	The OID of the AGENT-CAPABILITIES invocation.
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confdConfig snmpAgent system sysServices <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]  default '72'	A value which indicates the set of services that this entity may potentially offer. The sysServices is defined in the SNMPv2-MIB (RFC 3418).

confdConfig snmpAgent temporaryStorageTime <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32  default '300'	The time, in seconds, that the agent keeps temporary table entries before deleting them. A table entry is temporary if its RowStatus column is 'notReady' or 'notInService'.

confdConfig snmpAgent vrf <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The VRF interface name to which the listening socket should bind.

confdConfig snmpgw

confdConfig snmpgw agent <A> ip <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string	The host (specified as a name or an IP address) on which the agent is running.

confdConfig snmpgw agent <A> community <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string  default 'private'	The community string for communication with the agent. If the community string cannot be expressed in Unicode, use the element community_bin instead (see below). If both community_bin and community are specified, community is ignored.

confdConfig snmpgw agent <A> community\_bin <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string	The community string for communication with the agent, encoded in hexBinary.

		For example, <community>AB</community> and <community_bin>4142</community_bin> are equivalent. The main use for this is when the community string cannot be expressed in Unicode.
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confdConfig snmpgw agent <A> enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the agent is enabled.

confdConfig snmpgw agent <A> forwardNotifStream <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string	The forwarding notification stream , if present, indicates that traps should be automatically translated in accordance with the yang definition of the notification, and sent out on the given stream. The given stream may not implement replay support externally.

confdConfig snmpgw agent <A> module <B>

**Input Parameters:**

Parameter	Type	Description
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A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string	A list of MIB module names that this agent implements. Each such MIB must be convert to YANG and compiled with the --snmpgw flag to confdc.

confdConfig snmpgw agent <A> netns <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string	The network namespace name where the listening socket will belong to.

confdConfig snmpgw agent <A> port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	uint16 [0..65535]  default '161'	The port number to use for communication with the agent.

confdConfig snmpgw agent <A> retries <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.

B	uint8  default '0'	The number of times an SNMP request towards the agent should be retried before aborting the operation. The default is 0.
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confdConfig snmpgw agent <A> subscriptionId <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string	The subscription id, if set, is used for indicating to which applications external traps should be sent.

confdConfig snmpgw agent <A> timeout <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string  default 'PT5S'	The amount of time to wait for an answer from the agent before retrying or aborting the operation. The default is five seconds.

confdConfig snmpgw agent <A> version <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	enumeration One of:	The default protocol version to use. The value indicates the preferred version - if the

	v1   v2c	agent doesn't respond, the other version will be tried.
	default 'v2c'	

confdConfig snmpgw agent <A> vrf <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	A name for the agent, mainly used for error reporting.
B	string	The VRF interface name to which the listening socket should bind.

confdConfig snmpgw enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the gateway is enabled.

confdConfig snmpgw rowCacheMaxAge <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT5S'	Whenever any object is requested from an agent, all objects in the same conceptual row will be fetched and cached. This value limits the age of values in the cache. Higher values may give higher performance but increases the probability that the SNMP gateway returns stale data. The default is 5 seconds.

confdConfig snmpgw rowCacheMaxSize <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16  default '200'	Whenever any object is requested from an agent, all objects in the same conceptual row will be fetched and cached. This value limits the number of values in the cache. Higher values may give higher performance but may also cause higher memory utilization. The default is 200.

confdConfig snmpgw trapPort <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]	The port number to listen for traps on.

confdConfig ssh

confdConfig ssh algorithms

confdConfig ssh algorithms dhGroup

confdConfig ssh algorithms dhGroup maxSize <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1024 .. 8192]  default '4096'	Maximal size of p in bits.

confdConfig ssh algorithms dhGroup minSize <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1024 .. 8192]  default '2048'	Minimal size of p in bits.

confdConfig ssh algorithms encryption <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'aes128-ctr,aes192-ctr,aes256-ctr'	The supported encryption algorithms (if implemented in libcrypto) are 'aes128-ctr', 'aes192-ctr', 'aes256-ctr', 'aes128-cbc', 'aes256-cbc' and '3des-cbc'.

confdConfig ssh algorithms kex <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The supported key exchange algorithms (as long as their hash functions are implemented in libcrypto) are 'diffie-hellman-group18-sha512', 'diffie-hellman-group14-

	default 'diffie-hellman-group18-sha512,diffie-hellman-group14-sha256,diffie-hellman-group-exchange-sha256'	<p>sha256', 'diffie-hellman-group-exchange-sha256', 'diffie-hellman-group-exchange-sha1', 'diffie-hellman-group14-sha1' and 'diffie-hellman-group1-sha1'.</p> <p>To limit the usable key exchange algorithms to 'diffie-hellman-group14-sha1' and 'diffie-hellman-group-exchange-sha256' (in that order) set this value to 'diffie-hellman-group14-sha1, diffie-hellman-group-exchange-sha256'.</p>
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confdConfig ssh algorithms mac <A>

**Input Parameters:**

Parameter	Type	Description
A	<p>string</p> <p>default 'hmac-sha2-256,hmac-sha2-512'</p>	The supported mac algorithms (if implemented in libcrypto) are 'hmac-md5', 'hmac-sha1', 'hmac-sha2-256', 'hmac-sha2-512', 'hmac-sha1-96' and 'hmac-md5-96'.

confdConfig ssh algorithms serverHostKey <A>

**Input Parameters:**

Parameter	Type	Description
A	<p>string</p> <p>default 'ssh-rsa,ssh-dss'</p>	<p>The supported serverHostKey algorithms (if implemented in libcrypto) are 'ssh-dss' and 'ssh-rsa', but for any SSH server, it is limited to those algorithms for which there is a host key installed in the directory given by /confdConfig/aaa/sshServerKeyDir.</p> <p>To limit the usable serverHostKey algorithms to 'ssh-dss', set this value to 'ssh-dss' or avoid installing a key of any other type than ssh-dss in the sshServerKeyDir.</p>

confdConfig ssh clientAliveCountMax <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32  default '3'	If no data has been received from the client, after this many consecutive clientAliveInterval has passed, the connection will be dropped.

confdConfig ssh clientAliveInterval <A>

**Input Parameters:**

Parameter	Type	Description
A	union string  enumeration One of: infinity  default 'infinity'	If no data has been received from a connected client for this long, a request that requires a response from the client, will be sent over the SSH transport.

confdConfig ssh idleConnectionTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT10M'	The maximum time that an authenticated connection to the SSH server is allowed to exist without open channels. If the timeout is reached, the SSH server closes the connection. Default is PT10M, i.e. 10 minutes. If the value is 0, there is no timeout.

confdConfig subagents

confdConfig subagents subagent <A> mount path <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	<p>The path, in restricted XPath syntax, where the subagent's data is mounted. The XPath is restricted as an instance-identifier (see confd_types(3)). To mount on the top level, use '/'. Note that the XPath expression must not contain any namespace prefixes.</p> <p>If the subagent mounts more than one node, this object is a space separated list of paths.</p>

confdConfig subagents subagent <A> disableSubtreeOptimization <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	boolean  default 'false'	Whenever possible, the master agent sends a single subtree filter request, instead of one request for each object. If the subagent cannot handle these requests, for any reason, set this parameter to 'true'.

confdConfig subagents subagent <A> enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see <code>confd_lib_events(3)</code> ) generated by ConfD.
B	boolean  default 'true'	Whether the subagent should be considered by ConfD. When set to 'false' the subagent is ignored.

`confdConfig subagents subagent <A> mount node <B>`

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see <code>confd_lib_events(3)</code> ) generated by ConfD.
B	string	The namespace and name of the top-level node in that namespace, as a QName.  This leaf-list must be of the same length as the 'path' leaf.

`confdConfig subagents subagent <A> ssh`

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see <code>confd_lib_events(3)</code> ) generated by ConfD.

`confdConfig subagents subagent <A> ssh ip <B>`

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)\{3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	The IP address where the subagent listens for NETCONF SSH connections.

confdConfig subagents subagent <A> ssh password <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The SSH user's password.

confdConfig subagents subagent <A> ssh user <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The SSH user name used for authentication at the subagent.

confdConfig subagents subagent <A> ssh netns <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The network namespace name where the listening socket will belong to.

confdConfig subagents subagent <A> ssh port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	uint16 [0..65535]  default '2022'	The port where the subagent listens for NETCONF SSH connections.

confdConfig subagents subagent <A> ssh vrf <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The VRF interface name to which the listening socket should bind.

confdConfig subagents subagent <A> tcp

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.

confdConfig subagents subagent <A> tcp confdAuth group <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The group name to be used for authorization on the subagent.

confdConfig subagents subagent <A> tcp confdAuth user <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The user name to be used for authorization on the subagent.

confdConfig subagents subagent <A> tcp ip <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see <code>confd_lib_events(3)</code> ) generated by ConfD.
B	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)\{3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	The IP address where the subagent listens for NETCONF TCP connections.

`confdConfig subagents subagent <A> tcp netns <B>`

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see <code>confd_lib_events(3)</code> ) generated by ConfD.
B	string	The network namespace name where the listening socket will belong to.

`confdConfig subagents subagent <A> tcp port <B>`

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see <code>confd_lib_events(3)</code> ) generated by ConfD.
B	uint16 [0..65535]  default '2023'	The port where the subagent listens for NETCONF TCP connections.

confdConfig subagents subagent <A> tcp vrf <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = min .. 31}	The name of the subagent. It is used as a unique identifier of the subagent. The name is included in the subagent events (see confd_lib_events(3)) generated by ConfD.
B	string	The VRF interface name to which the listening socket should bind.

confdConfig webui

confdConfig webui absoluteTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT16H'	Maximum absolute time before terminating a Web UI session. PT0M means no timeout. Default is PT16H, ie 16 hours.

confdConfig webui allowSymlinks <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Allow symlinks in the docroot directory.

confdConfig webui audit <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	audit is either 'true' or 'false'. If 'true', then JSON-RPC/CGI requests are logged to the audit log.

confdConfig webui cacheRefreshSecs <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]  default '0'	The ConfD Web server uses a RAM cache for static content. An entry sits in the cache for a number of seconds before it is reread from disk (on access). The default is 0.

confdConfig webui cgi

confdConfig webui cgi dir <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'cgi-bin'	The directory path to the location of the CGI-scripts.

confdConfig webui cgi enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', CGI-script support is enabled.

confdConfig webui cgi maxRequestLength <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16	Specifies the maximum amount of characters in a request. All characters exceeding this limit are silently ignored.

confdConfig webui cgi php

confdConfig webui cgi php enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', PHP support is enabled.

confdConfig webui cgi requestFilter <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Specifies that characters not specified in the given regexp should be filtered out silently.

confdConfig webui customDir <A>

**Input Parameters:**

Parameter	Type	Description
A	string	customDir should be used if the Web UI is to be customized as described in the User Guide.

confdConfig webui customHeaders

confdConfig webui customHeaders header <A> value <B>

**Input Parameters:**

Parameter	Type	Description
A	string	RFC 7230 field-name, e.g. Accept-Control-Allow-Origin
B	string	RFC 7230 field-value, e.g. http://www.cisco.com

confdConfig webui disableAuth

confdConfig webui disableAuth dir <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The disableAuth element contains any number of 'dir' elements. Each 'dir' element points to a directory path in the docroot which should not be restricted by the AAA engine. If no 'dir' elements are specified the following directories and files will not be

		restricted by the AAA engine: '/login' and '/login.html'.
--	--	---

confdConfig webui docroot <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The location of the document root on disk. If this configurable is omitted the docroot points to the next generation docroot in the ConfD distribution instead.

confdConfig webui enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the Web server is started.

confdConfig webui idleTimeout <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'PT30M'	Maximum idle time before terminating a Web UI session. PT0M means no timeout. Default is PT30M, ie 30 minutes.

confdConfig webui loginDir <A>

**Input Parameters:**

Parameter	Type	Description
A	string	loginDir may be used if a custom login directory is to be used instead of the builtin ditto.

confdConfig webui matchHostName <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	This setting specifies if the Web server only should serve URLs adhering to the serverName defined above. By default the serverName is 'localhost' and matchHostName is 'false', i.e. any server name can be given in the URL. If you want the server to only accept URLs adhering to the serverName, enable this setting.

confdConfig webui maxRefEntries <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]  default '100'	Leafref and keyref entries are represented as drop-down menus in the automatically generated Web UI. By default no more than 100 entries are fetched. This element makes this number configurable.

confdConfig webui rateLimiting <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]	Maximum number of allowed JSON-RPC requests every hour. 0 means infinity. Default is 1 million.

	default '1000000'	
--	-------------------	--

confdConfig webui serverName <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'localhost'	The hostname the Web server serves.

confdConfig webui transport

confdConfig webui transport ssl

confdConfig webui transport ssl caCertFile <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>Specifies which file that contains the trusted certificates to use during client authentication and to use when attempting to build the server certificate chain. The list is also used in the list of acceptable CA certificates passed to the client when a certificate is requested.</p> <p>The ConfD distribution comes with a CA certificate which can be used for testing purposes (\$CONFD_DIR/src/confd/webui/ca_cert/ca.cert). This CA certificate has been generated as shown above.</p>

confdConfig webui transport ssl certFile <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>Specifies which file that contains the server certificate. The certificate is either a self-signed test certificate or a genuine and validated certificate bought from a CA (Certificate Authority). If this configurable is omitted the keyFile points to a built-in self signed certificate/key in the ConfD distribution instead. Note: Only use this certificate/key for test purposes.</p> <p>The ConfD distribution comes with a server certificate which can be used for testing purposes (\$CONFD_DIR/src/confd/webui/cert/host.{cert,key}). This server certificate has been generated using a local CA certificate:</p> <pre>\$ openssl OpenSSL&gt; genrsa -out ca.key 4096 OpenSSL&gt; req -new -x509 -days 3650 -key ca.key -out ca.cert OpenSSL&gt; genrsa -out host.key 4096 OpenSSL&gt; req -new -key host.key -out host.csr OpenSSL&gt; x509 -req -days 365 -in host.csr -CA ca.cert \-CAkey ca.key -set_serial 01 -out host.cert</pre>

confdConfig webui transport ssl ciphers <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'DEFAULT'	<p>Specifies the cipher suites to be used by the server as a colon-separated list from the set</p> <p>ECDHE-ECDSA-AES256-GCM-SHA384, ECDHE-RSA-AES256-GCM-SHA384, ECDHE-ECDSA-AES256-SHA384, ECDHE-RSA-AES256-SHA384, ECDH-ECDSA-AES256-GCM-SHA384, ECDH-RSA-AES256-GCM-SHA384, ECDH-ECDSA-AES256-SHA384, ECDH-RSA-AES256-SHA384, DHE-RSA-AES256-GCM-SHA384, DHE-DSS-AES256-GCM-</p>

		<p>SHA384, DHE-RSA-AES256-SHA256, DHE-DSS-AES256-SHA256, AES256-GCM-SHA384, AES256-SHA256, ECDHE-ECDSA-AES128-GCM-SHA256, ECDHE-RSA-AES128-GCM-SHA256, ECDHE-ECDSA-AES128-SHA256, ECDHE-RSA-AES128-SHA256, ECDH-ECDSA-AES128-GCM-SHA256, ECDH-RSA-AES128-GCM-SHA256, ECDH-ECDSA-AES128-SHA256, ECDH-RSA-AES128-SHA256, DHE-RSA-AES128-GCM-SHA256, DHE-DSS-AES128-GCM-SHA256, DHE-RSA-AES128-SHA256, DHE-DSS-AES128-SHA256, AES128-GCM-SHA256, AES128-SHA256, ECDHE-ECDSA-AES256-SHA, ECDHE-RSA-AES256-SHA, DHE-RSA-AES256-SHA, DHE-DSS-AES256-SHA, ECDH-ECDSA-AES256-SHA, ECDH-RSA-AES256-SHA, AES256-SHA, ECDHE-ECDSA-AES128-SHA, ECDHE-RSA-AES128-SHA, DHE-RSA-AES128-SHA, DHE-DSS-AES128-SHA, ECDH-ECDSA-AES128-SHA, ECDH-RSA-AES128-SHA, AES128-SHA, ECDHE-ECDSA-DES-CBC3-SHA, ECDHE-RSA-DES-CBC3-SHA, EDH-RSA-DES-CBC3-SHA, EDH-DSS-DES-CBC3-SHA, ECDH-ECDSA-DES-CBC3-SHA, ECDH-RSA-DES-CBC3-SHA, and DES-CBC3-SHA,</p> <p>or the word 'DEFAULT' (use all cipher suites in that list for which the required support is implemented in libcrypto). See the OpenSSL manual page ciphers(1) for the definition of the cipher suites. NOTE: The general cipher list syntax described in ciphers(1) is not supported.</p>
--	--	---

confdConfig webui transport ssl depth <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. max]  default '1'	Specifies the depth of certificate chains the server is prepared to follow when verifying client certificates.

confdConfig webui transport ssl disableNonAuthRedirect <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	disableNonAuthRedirect is either 'true' or 'false'. If 'true' non-authenticated HTTP requests (expect '/' and '/index.html') result in a 404 HTTP reply. If 'false' all non-authenticated requests are redirected to '/login.html'.

confdConfig webui transport ssl dscp <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [0 .. 63]	Support for setting the Differentiated Services Code Point (6 bits) for traffic originating from the Web server for SSL connections.

confdConfig webui transport ssl ellipticCurves <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'DEFAULT'	Specifies the curves for Elliptic Curve cipher suites to be used by the server as a whitespace-separated list from the set  sect571r1, sect571k1, secp521r1, brainpoolP512r1, sect409k1, sect409r1, brainpoolP384r1, secp384r1, sect283k1, sect283r1, brainpoolP256r1, secp256k1, secp256r1, sect239k1, sect233k1, sect233r1, secp224k1, secp224r1, sect193r1, sect193r2, secp192k1, secp192r1, sect163k1, sect163r1,

		sect163r2, secp160k1, secp160r1, and secp160r2,  or the word 'DEFAULT' (use all supported curves).
--	--	--

confdConfig webui transport ssl enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	enabled is either 'true' or 'false'. If 'true', the Web server uses SSL as a transport service.

confdConfig webui transport ssl extralPPorts <A>

**Input Parameters:**

Parameter	Type	Description
A	string	extralPPorts is a leaf-list of pipe-separated ip:port pair, network namespace name and VRF interface name which the Web server also listens to for SSL connections. For IPv6 addresses, the syntax [ip]:port may be used. If the ':port' is omitted, /confdConfig/webui/transport/ssl/port is used. If the 'netns' is omitted, /confdConfig/webui/transport/ssl/netns is used. If the 'vrf' is omitted, /confdConfig/webui/transport/ssl/vrf is used. Example:  <extralPPorts>10.45.22.11:4777 netns=wns0 vrf=vrf0</extralPPorts> <extralPPorts>127.0.0.1 vrf=vrf1</extralPPorts> <extralPPorts> <extralPPorts>:::88 netns=wns1</extralPPorts> <extralPPorts>[:]</extralPPorts>

confdConfig webui transport ssl ip <A>

**Input Parameters:**

Parameter	Type	Description
A	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  default '0.0.0.0'}	The IP address which the Web server should listen to for incoming SSL connections. 0.0.0.0 means that it listens to the port (/confdConfig/webui/transport/ssl/port) for all IPv4 addresses on the machine.

confdConfig webui transport ssl keyFile <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Specifies which file that contains the private key for the certificate. Read more about certificates in /confdConfig/webui/transport/ssl/certFile. If this configurable is omitted the keyFile points to a built-in self signed certificate/key in the ConfD distribution instead. Note: Only use this certificate/key for test purposes.

confdConfig webui transport ssl netns <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The network namespace name where the listening socket will belong to.

confdConfig webui transport ssl port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '8888'	port is a valid port number to be used in combination with the address in / confdConfig/webui/transport/ssl/ip.

confdConfig webui transport ssl protocols <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default 'DEFAULT'	Specifies the SSL/TLS protocol versions to be used by the server as a whitespace-separated list from the set tlsv1 tlsv1.1 tlsv1.2, or the word 'DEFAULT' (use all supported protocol versions except tlsv1).

confdConfig webui transport ssl readFromDb <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	If enabled, TLS data (certificate, private key, and CA certificates) is read from database. Corresponding configuration regarding reading TLS data (i.e. /confdConfig/webui/transport/ssl/keyFile, /confdConfig/webui/transport/ssl/certFile, /confdConfig/webui/transport/ssl/caCertFile) is ignored when enabled.  See tailf-tls.yang and the ConfD User Guide for more information.

confdConfig webui transport ssl redirect <A>

**Input Parameters:**

Parameter	Type	Description
A	string	If given the user will be redirected to the specified URL. Two macros can be specified, i.e. @HOST@ and @PORT@. For example http://@HOST@:80 or http://192.12.4.3:@PORT@

confdConfig webui transport ssl verify <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1 .. 3]  default '1'	<p>Specifies the level of verification the server does on client certificates. 1 means nothing, 2 means the server will ask the client for a certificate but not fail if the client does not supply a client certificate, 3 means that the server requires the client to supply a client certificate.</p> <p>If caCertFile has been set to the ca.cert file generated above you can verify that it works correctly using, for example:</p> <pre>\$ openssl s_client -connect 127.0.0.1:8888 \ -cert client.cert -key client.key</pre> <p>For this to work client.cert must have been generated using the ca.cert from above:</p> <pre>\$ openssl OpenSSL&gt; genrsa -out client.key 4096 OpenSSL&gt; req -new -key client.key -out client.csr OpenSSL&gt; x509 -req -days 3650 -in client.csr -CA ca.cert \ -CAkey ca.key -set_serial 01 -out client.cert</pre>

confdConfig webui transport ssl vrf <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The VRF interface name to which the listening socket should bind.

confdConfig webui transport tcp

confdConfig webui transport tcp disableNonAuthRedirect <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	disableNonAuthRedirect is either 'true' or 'false'. If 'true' non-authenticated HTTP requests (expect '/' and '/index.html') result in a 404 HTTP reply. If 'false' all non-authenticated requests are redirected to '/login.html'.

confdConfig webui transport tcp dscp <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [0 .. 63]	Support for setting the Differentiated Services Code Point (6 bits) for traffic originating from the Web server for TCP connections.

confdConfig webui transport tcp enabled <A>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	boolean  default 'true'	enabled is either 'true' or 'false'. If 'true', the Web server uses clear text TCP as a transport service.
---	-------------------------------	--

confdConfig webui transport tcp extralPorts <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>extralPorts is a leaf-list of pipe-separated ip:port pair, network namespace name and VRF interface name which the Web server also listens to for TCP connections. For IPv6 addresses, the syntax [ip]:port may be used. If the ':port' is omitted, /confdConfig/webui/transport/tcp/port is used. If the 'netns' is omitted, /confdConfig/webui/transport/tcp/netns is used. If the 'vrf' is omitted, /confdConfig/webui/transport/tcp/vrf is used. Example:</p> <pre>&lt;extralPorts&gt;10.45.22.11:4777  netns=wns0 vrf=vrf0&lt;/extralPorts&gt; &lt;extralPorts&gt;127.0.0.1 vrf=vrf1&lt;/ extralPorts&gt; &lt;extralPorts&gt;:::88  netns=wns1&lt;/extralPorts&gt; &lt;extralPorts&gt;[::]&lt;/extralPorts&gt;</pre>

confdConfig webui transport tcp ip <A>

**Input Parameters:**

Parameter	Type	Description
A	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	<p>The IP address which the Web server should listen to for TCP connections. 0.0.0.0 means that it listens to the port (/confdConfig/webui/transport/tcp/port) for all IPv4 addresses on the machine.</p>

	default '0.0.0.0'	
--	-------------------	--

confdConfig webui transport tcp netns <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The network namespace name where the listening socket will belong to.

confdConfig webui transport tcp port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '8008'	port is a valid port number to be used in combination with the address in / confdConfig/webui/transport/tcp/ip.

confdConfig webui transport tcp redirect <A>

**Input Parameters:**

Parameter	Type	Description
A	string	If given the user will be redirected to the specified URL. Two macros can be specified, i.e. @HOST@ and @PORT@. For example https://@HOST@:443 or https://192.12.4.3:@PORT@

confdConfig webui transport tcp vrf <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The VRF interface name to which the listening socket should bind.

confdConfig webui transport unauthenticatedMessageLimit <A>

**Input Parameters:**

Parameter	Type	Description
A	union uint32  enumeration One of: nolimit  default '65536'	Limit the size of allowed unauthenticated messages. Limit is given in bytes or 'nolimit'. The default is 64kB.

confdConfig webui webuiIndexUrl <A>

**Input Parameters:**

Parameter	Type	Description
A	string  default '/index.html'	Where to redirect after successful login, which by default is '/index.html'.

confdConfig webui X-Frame-Options <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of:	By default the X-Frame-Options header is set to DENY for the /login.html and /

	DENY   SAMEORIGIN   ALLOW-FROM  default 'DENY'	index.html pages. With this header it can be set to SAMEORIGIN or ALLOW-FROM instead.
--	--	---

## 2.8 cpu-load-control-cfg commands

### 2.8.1 Command Tree

```
|-- cpu-load-control-cfg default-ingress-cpu-packets-rate-limit <A>
   |-- rate-limit-policy-name <B> (Mandatory)
```

### 2.8.2 Commands

cpu-load-control-cfg default-ingress-cpu-packets-rate-limit <A> rate-limit-policy-name <B>

#### Input Parameters:

Parameter	Type	Description
A	enumeration One of: user-port   network-port   subtended-node-port	The interface-usage type.
B	leafref : /bbf-qos-pol:policies/bbf-qos-pol:policy/bbf-qos-pol:name	The name of referenced policy, which actions in the referenced classifiers all are rate-limit-frames.

## 2.9 est-client commands

### 2.9.1 Command Tree

```

|-- est-client est-certificate-profile <A>
|  |-- est-server est-server-url <B> \(Mandatory\)
|  |-- est-server server-authentication server-auth pinned-ca-certs <B> \(Mandatory\)
|  |-- ca-certificate-renew-policy renew-interval <B>
|  |-- certificate-request-attributes explicit-provision-policy auto-fill-duid-attributes <B>
|  |-- certificate-request-attributes explicit-provision-policy subject-alternative-names <B>
|  |-- certificate-request-attributes explicit-provision-policy subject-distinguished-names <B>
|  |-- end-entity-certificate-renew-policy after-issue <B>
|  |-- end-entity-certificate-renew-policy before-expiry <B>
|  |-- end-entity-certificate-renew-policy certificate-update-strategy-options restart-connection-after-certificate-update <B>
|  |-- end-entity-certificate-renew-policy generate-new-key <B>
|  |-- end-entity-certificate-renew-policy reuse-existing-key <B>
|  |-- est-server client-authentication certificate-auth certificate-reference <B>
|  |-- est-server client-authentication certificate-auth private-key-reference <B>
|  |-- est-server client-authentication https-auth password <B>
|  |-- est-server client-authentication https-auth username <B>
|  |-- est-server hello-params cipher-suites cipher-suite <B>
|  |-- est-server hello-params tls-versions tls-version <B>
|  |-- private-key-generation private-key-algorithm <B>

```

### 2.9.2 Commands

est-client est-certificate-profile <A> est-server est-server-url <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	string {length = 1..255}	URL of the EST server.

est-client est-certificate-profile <A> est-server server-authentication server-auth pinned-ca-certs <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.

est-client est-certificate-profile <A> ca-certificate-renew-policy renew-interval <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	uint16 [1..1825]  default '30'	Unit: days  Update CA certificates on the defined time intervals (1 to 1820 days)

est-client est-certificate-profile <A> certificate-request-attributes explicit-provision-policy auto-fill-duid-attributes <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	boolean  default 'false'	When this attribute is set as 'true', then CSR is automatically filled with Device Identifier attributes, based on BBF-TR301 rules. Fields that will be affected & overruled are Subject/CN and Subject/SerialNumber, which will derive info based on Device Unique Identifier (DUID).

est-client est-certificate-profile <A> certificate-request-attributes explicit-provision-policy  
subject-alternative-names <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_-z ~]*}	Enrollment over Secured Transport certificate profile name
B	string {length = 3..64} {pattern = [a-zA-Z0-9_-]+=[^\n\r]+}	List of Subject Alternative Name (SAN) entries in key=value format. Common keys include DNS, IP, URI, email, RID, or otherName.

est-client est-certificate-profile <A> certificate-request-attributes explicit-provision-policy  
subject-distinguished-names <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_-z ~]*}	Enrollment over Secured Transport certificate profile name
B	string {length = 3..64} {pattern = [a-zA-Z0-9_-]+=[^\n\r]+}	List of Subject Distinguished Name (Subject DN) attributes in key=value format. Each string must represent one RDN component, such as 'CN=example.com' or 'O=ExampleOrg'.

est-client est-certificate-profile <A> end-entity-certificate-renew-policy after-issue <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_-z ~]*}	Enrollment over Secured Transport certificate profile name
B	uint8	Unit: days

		Time for scheduler updates after certificate issuance
--	--	---

est-client est-certificate-profile <A> end-entity-certificate-renew-policy before-expiry <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	uint8  default '10'	Unit: days  Time scheduler updates before certificate expiry

est-client est-certificate-profile <A> end-entity-certificate-renew-policy certificate-update-strategy-options restart-connection-after-certificate-update <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	boolean  default 'false'	When this attribute is set as 'true', then if a certificate is enrolled or re-enrolled, then the active connections are immediately restarted using the latest renewed certificate.

est-client est-certificate-profile <A> end-entity-certificate-renew-policy generate-new-key <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32}	Enrollment over Secured Transport certificate profile name

	{pattern = [#&-Z^_-z ~]*}	
B	enumeration One of: enabled	Generate an new private key on each certificate renew operation

est-client est-certificate-profile <A> end-entity-certificate-renew-policy reuse-existing-key <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [#&-Z^_-z ~]*}	Enrollment over Secured Transport certificate profile name
B	enumeration One of: enabled  default 'enabled'	Reuse the existing private key on each certificate renew operation

est-client est-certificate-profile <A> est-server client-authentication certificate-auth certificate-reference <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [#&-Z^_-z ~]*}	Enrollment over Secured Transport certificate profile name
B	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:certificates/ ks:certificate/ks:name	Reference to the client certificate for authentication.

est-client est-certificate-profile <A> est-server client-authentication certificate-auth private-key-reference <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	Reference to the private key for the client certificate.

est-client est-certificate-profile <A> est-server client-authentication https-auth password <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	string {pattern = [^\$](.{0,253}) \$0\$({1,254}) \$8\$([\s\S]{17,509})}	Password for HTTPs authentication. A value of this type matches one of the forms: - <clear text password>[1..254 chars] - \$0\$<clear text password>[1..254 chars] - \$8\$<encrypted value>[17..509 chars]

est-client est-certificate-profile <A> est-server client-authentication https-auth username <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Username for HTTPs authentication.

est-client est-certificate-profile <A> est-server hello-params cipher-suites cipher-suite <B>

**Input Parameters:**

Parameter	Type	Description
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A	string {length = 1..32} {pattern = [!#&-Z^_~]*}	Enrollment over Secured Transport certificate profile name
B	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-ede-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-anon-with-aria-128-gcm-sha256   tls-dh-anon-with-aria-256-cbc-sha384   tls-dh-anon-with-aria-256-gcm-sha384   tls-dh-anon-with-camellia-128-cbc-sha   tls-dh-anon-with-camellia-128-cbc-sha256   tls-dh-anon-with-camellia-128-gcm-sha256   tls-dh-anon-with-camellia-256-cbc-sha   tls-dh-anon-with-camellia-256-cbc-sha256   tls-dh-anon-with-camellia-256-gcm-sha384   tls-dh-anon-with-des-cbc-sha   tls-dh-anon-with-rc4-128-md5   tls-dh-anon-with-seed-cbc-sha   tls-dh-dss-export-with-des40-cbc-sha   tls-dh-dss-with-3des-ede-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha256   tls-dh-dss-with-aes-128-gcm-sha256   tls-dh-dss-with-aes-256-cbc-sha   tls-dh-dss-with-aes-256-cbc-sha256   tls-dh-dss-with-aes-256-gcm-sha384   tls-dh-dss-with-aria-128-cbc-sha256   tls-dh-dss-with-aria-128-gcm-sha256   tls-dh-dss-with-aria-256-cbc-sha384   tls-dh-dss-with-aria-256-gcm-sha384   tls-dh-dss-with-camellia-128-cbc-sha   tls-dh-dss-with-camellia-128-cbc-sha256   tls-dh-dss-with-camellia-128-gcm-sha256   tls-dh-dss-with-camellia-256-cbc-sha   tls-dh-dss-with-camellia-256-cbc-sha256   tls-dh-dss-with-camellia-256-gcm-sha384   tls-dh-dss-with-des-cbc-sha   tls-dh-dss-with-seed-cbc-sha   tls-dh-rsa-export-with-des40-cbc-sha   tls-dh-rsa-with-3des-ede-cbc-sha   tls-dh-rsa-with-aes-128-cbc-sha   tls-dh-rsa-with-aes-128-	Acceptable cipher suites in order of descending preference. The configured host key algorithms should be compatible with the algorithm used by the configured private key. Please see Section 5 of RFC FFFF for valid combinations.  If this leaf-list is not configured (has zero elements) the acceptable cipher suites are implementation- defined.

cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha  
| tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha  
| tls-dhe-dss-export-with-des40-cbc-sha  
| tls-dhe-dss-with-3des-ede-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha  
| tls-dhe-psk-with-null-sha256 | tls-dhe-psk-

with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-

with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdhe-ecdsa-with-3des-edc-cbc-sha | tls-ecdhe-ecdsa-with-aes-128-cbc-sha | tls-ecdhe-ecdsa-with-aes-128-cbc-sha256 | tls-ecdhe-ecdsa-with-aes-128-ccm | tls-ecdhe-ecdsa-with-aes-128-ccm-8 | tls-ecdhe-ecdsa-with-aes-128-gcm-sha256 | tls-ecdhe-ecdsa-with-aes-256-cbc-sha | tls-ecdhe-ecdsa-with-aes-256-cbc-sha384 | tls-ecdhe-ecdsa-with-aes-256-ccm | tls-ecdhe-ecdsa-with-aes-256-ccm-8 | tls-ecdhe-ecdsa-with-aes-256-gcm-sha384 | tls-ecdhe-ecdsa-with-aria-128-cbc-sha256 | tls-ecdhe-ecdsa-with-aria-128-gcm-sha256 | tls-ecdhe-ecdsa-with-aria-256-cbc-sha384 | tls-ecdhe-ecdsa-with-aria-256-gcm-sha384 | tls-ecdhe-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdhe-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdhe-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdhe-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdhe-ecdsa-with-chacha20-poly1305-sha256 | tls-ecdhe-ecdsa-with-null-sha | tls-ecdhe-ecdsa-with-rc4-128-sha | tls-ecdhe-psk-with-3des-edc-cbc-sha | tls-ecdhe-psk-with-aes-128-cbc-sha | tls-ecdhe-psk-with-aes-128-cbc-sha256 | tls-ecdhe-psk-with-aes-128-ccm-8-sha256 | tls-ecdhe-psk-with-aes-128-ccm-sha256 | tls-ecdhe-psk-with-aes-128-gcm-sha256 | tls-ecdhe-psk-with-aes-256-cbc-sha | tls-ecdhe-psk-with-aes-256-cbc-sha384 | tls-ecdhe-psk-with-aes-256-gcm-sha384 | tls-ecdhe-psk-with-aria-128-cbc-sha256 | tls-ecdhe-psk-with-aria-256-cbc-sha384 | tls-ecdhe-psk-with-camellia-128-cbc-sha256 | tls-ecdhe-psk-with-camellia-256-cbc-sha384 | tls-ecdhe-psk-with-chacha20-poly1305-sha256 | tls-ecdhe-psk-with-null-sha | tls-ecdhe-psk-with-null-sha256 | tls-ecdhe-psk-with-null-

sha384 | tls-ecdh-psk-with-rc4-128-sha |  
tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-  
ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-  
rsa-with-aes-128-cbc-sha256 | tls-ecdh-  
rsa-with-aes-128-gcm-sha256 | tls-ecdh-  
rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-  
with-aes-256-cbc-sha384 | tls-ecdh-rsa-  
with-aes-256-gcm-sha384 | tls-ecdh-rsa-  
with-aria-128-cbc-sha256 | tls-ecdh-rsa-  
with-aria-128-gcm-sha256 | tls-ecdh-rsa-  
with-aria-256-cbc-sha384 | tls-ecdh-rsa-  
with-aria-256-gcm-sha384 | tls-ecdh-rsa-  
with-camellia-128-cbc-sha256 | tls-ecdh-  
rsa-with-camellia-128-gcm-sha256 | tls-  
ecdh-rsa-with-camellia-256-cbc-sha384  
| tls-ecdh-rsa-with-camellia-256-gcm-  
sha384 | tls-ecdh-rsa-with-chacha20-  
poly1305-sha256 | tls-ecdh-rsa-with-null-  
sha | tls-ecdh-rsa-with-rc4-128-sha | tls-  
empty-renegotiation-info-scsv | tls-fallback-  
scsv | tls-gostr341112-256-with-28147-cnt-  
imit | tls-gostr341112-256-with-kuznyechik-  
ctr-omac | tls-gostr341112-256-with-magma-  
ctr-omac | tls-krb5-export-with-des-cbc-40-  
md5 | tls-krb5-export-with-des-cbc-40-sha  
| tls-krb5-export-with-rc2-cbc-40-md5 | tls-  
krb5-export-with-rc2-cbc-40-sha | tls-krb5-  
export-with-rc4-40-md5 | tls-krb5-export-  
with-rc4-40-sha | tls-krb5-with-3des-ede-  
cbc-md5 | tls-krb5-with-3des-ede-cbc-sha  
| tls-krb5-with-des-cbc-md5 | tls-krb5-with-  
des-cbc-sha | tls-krb5-with-idea-cbc-md5  
| tls-krb5-with-idea-cbc-sha | tls-krb5-with-  
rc4-128-md5 | tls-krb5-with-rc4-128-sha  
| tls-null-with-null-null | tls-psk-dhe-with-  
aes-128-ccm-8 | tls-psk-dhe-with-aes-256-  
ccm-8 | tls-psk-with-3des-ede-cbc-sha | tls-  
psk-with-aes-128-cbc-sha | tls-psk-with-  
aes-128-cbc-sha256 | tls-psk-with-aes-128-  
ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-  
with-aes-128-gcm-sha256 | tls-psk-with-  
aes-256-cbc-sha | tls-psk-with-aes-256-  
cbc-sha384 | tls-psk-with-aes-256-ccm |  
tls-psk-with-aes-256-ccm-8 | tls-psk-with-  
aes-256-gcm-sha384 | tls-psk-with-aria-128-  
cbc-sha256 | tls-psk-with-aria-128-gcm-  
sha256 | tls-psk-with-aria-256-cbc-sha384  
| tls-psk-with-aria-256-gcm-sha384 | tls-  
psk-with-camellia-128-cbc-sha256 | tls-  
psk-with-camellia-128-gcm-sha256 | tls-  
psk-with-camellia-256-cbc-sha384 | tls-psk-  
with-camellia-256-gcm-sha384 | tls-psk-

with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha | tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-ede-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha | tls-rsa-psk-with-aes-256-cbc-sha384 | tls-rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-psk-with-aria-128-cbc-sha256 | tls-rsa-psk-with-aria-128-gcm-sha256 | tls-rsa-psk-with-aria-256-cbc-sha384 | tls-rsa-psk-with-aria-256-gcm-sha384 | tls-rsa-psk-with-camellia-128-cbc-sha256 | tls-rsa-psk-with-camellia-128-gcm-sha256 | tls-rsa-psk-with-camellia-256-cbc-sha384 | tls-rsa-psk-with-camellia-256-gcm-sha384 | tls-rsa-psk-with-chacha20-poly1305-sha256 | tls-rsa-psk-with-null-sha | tls-rsa-psk-with-null-sha256 | tls-rsa-psk-with-null-sha384 | tls-rsa-psk-with-rc4-128-sha | tls-rsa-with-3des-ede-cbc-sha | tls-rsa-with-aes-128-cbc-sha | tls-rsa-with-aes-128-cbc-sha256 | tls-rsa-with-aes-128-ccm | tls-rsa-with-aes-128-ccm-8 | tls-rsa-with-aes-128-gcm-sha256 | tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-aes-256-cbc-sha256 | tls-rsa-with-aes-256-ccm | tls-rsa-with-aes-256-ccm-8 | tls-rsa-with-aes-256-gcm-sha384 | tls-rsa-with-aria-128-cbc-sha256 | tls-rsa-with-aria-128-gcm-sha256 | tls-rsa-with-aria-256-cbc-sha384 | tls-rsa-with-aria-256-gcm-sha384 | tls-rsa-with-camellia-128-cbc-sha | tls-rsa-with-camellia-128-cbc-sha256 | tls-rsa-with-camellia-128-gcm-sha256 | tls-rsa-with-camellia-256-cbc-sha | tls-rsa-with-camellia-256-cbc-sha256 | tls-rsa-with-camellia-256-gcm-sha384 | tls-rsa-with-des-cbc-sha | tls-rsa-with-idea-cbc-sha | tls-rsa-with-null-md5 | tls-rsa-with-null-sha | tls-rsa-with-null-sha256 | tls-rsa-with-rc4-128-md5 | tls-rsa-with-rc4-128-sha | tls-rsa-with-seed-cbc-sha | tls-sha256-sha256 | tls-sha384-sha384 | tls-sm4-ccm-sm3 | tls-sm4-gcm-sm3 | tls-srp-sha-dss-with-3des-ede-cbc-sha | tls-srp-sha-dss-with-aes-128-cbc-sha | tls-srp-sha-dss-with-aes-256-cbc-sha | tls-srp-sha-rsa-with-3des-ede-cbc-sha | tls-srp-sha-rsa-with-aes-128-cbc-sha | tls-srp-

sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-ede-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha
--

est-client est-certificate-profile <A> est-server hello-params tls-versions tls-version <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	identityref One of: tls12   tls13	Acceptable TLS protocol versions.  If this leaf-list is not configured (has zero elements) the acceptable TLS protocol versions are implementation- defined.

est-client est-certificate-profile <A> private-key-generation private-key-algorithm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_~]*}	Enrollment over Secured Transport certificate profile name
B	identityref One of: rsa1024   rsa15360   rsa2048   rsa3072   rsa4096   rsa7680  default 'ct:rsa4096'	Identifies the private key's algorithm type

## 2.10 file-transfer commands

### 2.10.1 Command Tree

```
-- file-transfer client-identity ssh-generate-auth-key <A>
-- file-transfer file-transfer-control enable-protocol <A>
-- file-transfer tls-client-parameters hello-params cipher-suites cipher-suite <A>
-- file-transfer tls-client-parameters hello-params tls-versions tls-version <A>
```

### 2.10.2 Commands

file-transfer client-identity ssh-generate-auth-key <A>

#### Input Parameters:

Parameter	Type	Description
A	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	A locally-defined or referenced asymmetric key pair to be used for client identification.

file-transfer file-transfer-control enable-protocol <A>

#### Input Parameters:

Parameter	Type	Description
A	identityref One of: ftp   http   scp   sftp   tftp	Enable the file transfer protocol.

file-transfer tls-client-parameters hello-params cipher-suites cipher-suite <A>

#### Input Parameters:

Parameter	Type	Description
A	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-ede-	Acceptable cipher suites in order of descending preference. The configured host key algorithms should be compatible with the algorithm used by the configured private key. Please see Section 5 of RFC FFFF for valid combinations.

cbc-sha | tls-dh-anon-with-aes-128-cbc-sha | tls-dh-anon-with-aes-128-cbc-sha256 |  
 | tls-dh-anon-with-aes-128-gcm-sha256 | tls-dh-anon-with-aes-256-cbc-sha | tls-dh-  
 anon-with-aes-256-cbc-sha256 | tls-dh-anon-with-aes-256-gcm-sha384 | tls-dh-  
 anon-with-aria-128-cbc-sha256 | tls-dh-anon-with-aria-128-gcm-sha256 | tls-dh-  
 anon-with-aria-256-cbc-sha384 | tls-dh-anon-with-aria-256-gcm-sha384 | tls-dh-  
 anon-with-camellia-128-cbc-sha | tls-dh-anon-with-camellia-128-cbc-sha256 | tls-dh-  
 anon-with-camellia-128-gcm-sha256 | tls-dh-anon-with-camellia-256-cbc-sha | tls-dh-  
 anon-with-camellia-256-cbc-sha256 | tls-dh-anon-with-camellia-256-gcm-sha384 |  
 | tls-dh-anon-with-des-cbc-sha | tls-dh-anon-with-rc4-128-md5 | tls-dh-anon-with-seed-  
 cbc-sha | tls-dh-dss-export-with-des40-cbc-sha | tls-dh-dss-with-3des-edc-cbc-sha |  
 | tls-dh-dss-with-aes-128-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha256 | tls-dh-dss-  
 with-aes-128-gcm-sha256 | tls-dh-dss-with-aes-256-cbc-sha | tls-dh-dss-with-aes-256-  
 cbc-sha256 | tls-dh-dss-with-aes-256-gcm-sha384 | tls-dh-dss-with-aria-128-cbc-  
 sha256 | tls-dh-dss-with-aria-128-gcm-sha256 | tls-dh-dss-with-aria-256-cbc-  
 sha384 | tls-dh-dss-with-aria-256-gcm-sha384 | tls-dh-dss-with-camellia-128-cbc-  
 sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-  
 gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-  
 cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha  
 | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-  
 with-3des-edc-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-  
 cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha  
 | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-  
 rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-  
 with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-  
 camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-  
 camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-

If this leaf-list is not configured (has zero elements) the acceptable cipher suites are implementation- defined.

camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-ede-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-

cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-

rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-ccm | tls-ecdh-rsa-with-aes-128-ccm-8 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-ccm | tls-ecdh-rsa-with-aes-256-ccm-8 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-chacha20-poly1305-sha256 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-psk-with-3des-edc-cbc-sha | tls-ecdh-psk-with-aes-128-cbc-sha | tls-ecdh-psk-with-aes-128-cbc-sha256 | tls-ecdh-psk-with-aes-128-ccm-8-sha256 | tls-ecdh-psk-with-aes-128-ccm-sha256 | tls-ecdh-psk-with-aes-128-gcm-sha256 | tls-ecdh-psk-with-aes-256-cbc-sha | tls-ecdh-psk-with-aes-256-cbc-sha384 | tls-ecdh-psk-with-aes-256-gcm-sha384 | tls-ecdh-psk-with-aria-128-cbc-sha256 | tls-ecdh-psk-with-aria-256-cbc-sha384 | tls-ecdh-psk-with-camellia-128-cbc-sha256 | tls-ecdh-psk-with-camellia-256-cbc-sha384 | tls-ecdh-psk-with-chacha20-poly1305-sha256 | tls-ecdh-psk-with-null-sha | tls-ecdh-psk-with-null-sha256 | tls-ecdh-psk-with-null-sha384 | tls-ecdh-psk-with-rc4-128-sha | tls-ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-



```

psk-with-aria-128-cbc-sha256 | tls-rsa-psk-
with-aria-128-gcm-sha256 | tls-rsa-psk-
with-aria-256-cbc-sha384 | tls-rsa-psk-with-
aria-256-gcm-sha384 | tls-rsa-psk-with-
camellia-128-cbc-sha256 | tls-rsa-psk-with-
camellia-128-gcm-sha256 | tls-rsa-psk-with-
camellia-256-cbc-sha384 | tls-rsa-psk-with-
camellia-256-gcm-sha384 | tls-rsa-psk-with-
chacha20-poly1305-sha256 | tls-rsa-psk-
with-null-sha | tls-rsa-psk-with-null-sha256
| tls-rsa-psk-with-null-sha384 | tls-rsa-psk-
with-rc4-128-sha | tls-rsa-with-3des-edecbc-
sha | tls-rsa-with-aes-128-cbc-sha |
tls-rsa-with-aes-128-cbc-sha256 | tls-rsa-
with-aes-128-ccm | tls-rsa-with-aes-128-
ccm-8 | tls-rsa-with-aes-128-gcm-sha256 |
tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-
aes-256-cbc-sha256 | tls-rsa-with-aes-256-
ccm | tls-rsa-with-aes-256-ccm-8 | tls-rsa-
with-aes-256-gcm-sha384 | tls-rsa-with-
aria-128-cbc-sha256 | tls-rsa-with-aria-128-
gcm-sha256 | tls-rsa-with-aria-256-cbc-
sha384 | tls-rsa-with-aria-256-gcm-sha384
| tls-rsa-with-camellia-128-cbc-sha | tls-
rsa-with-camellia-128-cbc-sha256 | tls-rsa-
with-camellia-128-gcm-sha256 | tls-rsa-
with-camellia-256-cbc-sha | tls-rsa-with-
camellia-256-cbc-sha256 | tls-rsa-with-
camellia-256-gcm-sha384 | tls-rsa-with-des-
cbc-sha | tls-rsa-with-idea-cbc-sha | tls-rsa-
with-null-md5 | tls-rsa-with-null-sha | tls-rsa-
with-null-sha256 | tls-rsa-with-rc4-128-md5 |
tls-rsa-with-rc4-128-sha | tls-rsa-with-seed-
cbc-sha | tls-sha256-sha256 | tls-sha384-
sha384 | tls-sm4-ccm-sm3 | tls-sm4-gcm-
sm3 | tls-srp-sha-dss-with-3des-edecbc-
sha | tls-srp-sha-dss-with-aes-128-cbc-sha
| tls-srp-sha-dss-with-aes-256-cbc-sha | tls-
srp-sha-rsa-with-3des-edecbc-sha | tls-
srp-sha-rsa-with-aes-128-cbc-sha | tls-srp-
sha-rsa-with-aes-256-cbc-sha | tls-srp-sha-
with-3des-edecbc-sha | tls-srp-sha-with-
aes-128-cbc-sha | tls-srp-sha-with-aes-256-
cbc-sha

```

file-transfer tls-client-parameters hello-params tls-versions tls-version <A>

#### **Input Parameters:**

---

Parameter	Type	Description
A	identityref One of: tls12   tls13	Acceptable TLS protocol versions.  If this leaf-list is not configured (has zero elements) the acceptable TLS protocol versions are implementation- defined.

## 2.11 filters commands

### 2.11.1 Command Tree

```

|-- filters enhanced-filter <A>
  |-- description <B>
  |-- filter <B>
    |-- dei-marking-list <C>
      |-- dei-value <D>
    |-- description <C>
    |-- destination-mac-address (Presence)
      |-- any-multicast-mac-address
      |-- broadcast-address
      |-- cfm-multicast-address
      |-- filter-match <C>
      |-- ipv4-multicast-address
      |-- ipv6-multicast-address
      |-- mac-address-mask <C>
      |-- mac-address-value <C>
      |-- unicast-address
    |-- enhanced-filter-name <C>
    |-- ethernet-frame-type <C>
    |-- ip-common (Presence)
      |-- dscp <C>
      |-- dscp-range <C>
      |-- protocol <C>
    |-- ipv4 (Presence)
      |-- destination-ipv4-network <C>
      |-- source-ipv4-network <C>
    |-- ipv6 (Presence)
      |-- destination-ipv6-network <C>
      |-- source-ipv6-network <C>
    |-- pbit-marking-list <C>
      |-- pbit-value <D>
    |-- protocol <C>
    |-- source-mac-address (Presence)
      |-- any-multicast-mac-address
      |-- broadcast-address
      |-- cfm-multicast-address
      |-- filter-match <C>
      |-- ipv4-multicast-address
      |-- ipv6-multicast-address
      |-- mac-address-mask <C>
      |-- mac-address-value <C>
      |-- unicast-address
    |-- transport (Presence)
      |-- destination-port-range (Presence)
        |-- lower-port <C> (Mandatory)
        |-- upper-port <C> (Mandatory)
      |-- source-port-range (Presence)
        |-- lower-port <C> (Mandatory)
        |-- upper-port <C> (Mandatory)

```

```

|-- vlans (Presence)
    |-- tag <C>
        |-- in-dei <D>
            |-- in-pbit-list <D>
|-- filter-operation <B>
|-- filters filter <A>

```

## 2.11.2 Commands

`filters enhanced-filter <A> description <B>`

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 0..64} {pattern = [ ~]*}	Description of the class template.

`filters enhanced-filter <A> filter <B> dei-marking-list <C> dei-value <D>`

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.
C	uint8	The index associated with a DEI value.
D	uint8 [0..1]	A DEI value to be used as match criteria.

`filters enhanced-filter <A> filter <B> description <C>`

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Filter name.
B	string {length = 1..64} {pattern = [ -~]*}	Filter name.
C	string {length = 0..64} {pattern = [ -~]*}	Description of the class template.

filters enhanced-filter <A> filter <B> destination-mac-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Filter name.
B	string {length = 1..64} {pattern = [ -~]*}	Filter name.

filters enhanced-filter <A> filter <B> destination-mac-address any-multicast-mac-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Filter name.
B	string {length = 1..64} {pattern = [ -~]*}	Filter name.

filters enhanced-filter <A> filter <B> destination-mac-address broadcast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.

filters enhanced-filter <A> filter <B> destination-mac-address cfm-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.

filters enhanced-filter <A> filter <B> destination-mac-address filter-match <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.
C	boolean  default 'true'	This is logical operator for a filter.  When true, it indicates the filter looks for a match with a pattern defined by the filter-field. When false, it looks for a 'no match' with the pattern defined by the filter field.

filters enhanced-filter <A> filter <B> destination-mac-address ipv4-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> destination-mac-address ipv6-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> destination-mac-address mac-address-mask <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}  default 'FF:FF:FF:FF:FF:FF'	A mask to be applied on the to be evaluated MAC address. The mask is applied as a bit-wise AND operation.

filters enhanced-filter <A> filter <B> destination-mac-address mac-address-value <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}	The value with which a comparison shall be made after performing the bit-wise AND operation on the to be evaluated MAC address.

filters enhanced-filter <A> filter <B> destination-mac-address unicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> enhanced-filter-name <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.

B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	leafref : /bbf-qos-filt:filters/bbf-qos-enhfilt:enhanced-filter/bbf-qos-enhfilt:name	A reference to an enhanced filter.

filters enhanced-filter <A> filter <B> ethernet-frame-type <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	union uint16  enumeration One of: ipv4   pppoe   ipv6	The value to be compared with the first Ethertype of an untagged Ethernet frame; or for frames that contain one or more VLAN tags it is the value to be compared with the Ethertype that is defined by the context where this grouping is used. It can be even the Ethertype that identifies a VLAN tag.

filters enhanced-filter <A> filter <B> ip-common

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> ip-common dscp <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint8 [0..63]	Differentiated Services Code Point.

filters enhanced-filter <A> filter <B> ip-common dscp-range <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	union string {pattern = (([0-9][0-5][0-9][6][0-3])-( [0-9][0-5][0-9][6][0-3]))?(( [0-9][0-5][0-9][6][0-3])-( [0-9][0-5][0-9][6][0-3]))*)}  enumeration One of: any	String identifying the DSCP values and/or range.

filters enhanced-filter <A> filter <B> ip-common protocol <C>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint8	Internet Protocol number. Refers to the protocol of the payload. In IPv6, this field is known as 'next-header', and if extension headers are present, the protocol is present in the 'upper-layer' header.

filters enhanced-filter <A> filter <B> ipv4

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> ipv4 destination-ipv4-network <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])/(([0-9]) ([1-2][0-9]) (3[0-2]))}	Destination IPv4 address prefix.

filters enhanced-filter <A> filter <B> ipv4 source-ipv4-network <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9] [0-9]2[0-4][0-9]25[0-5])/((([0-9]) ([1-2][0-9])  (3[0-2])))}	Source IPv4 address prefix.

filters enhanced-filter <A> filter <B> ipv6

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> ipv6 destination-ipv6-network <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.

B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:){0,5}((([0-9a-fA-F]{0,4}:)?(:[0-9a-fA-F]{0,4})) (((25[0-5] 2[0-4][0-9]  01)?[0-9]?[0-9])\.){3}(25[0-5] 2[0-4][0-9]  01)?[0-9]?[0-9])))/((([0-9]) ([0-9]{2}) (1[0-1][0-9]) (12[0-8]))))}	Destination IPv6 address prefix.

filters enhanced-filter <A> filter <B> ipv6 source-ipv6-network <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:){0,5}((([0-9a-fA-F]{0,4}:)?(:[0-9a-fA-F]{0,4})) (((25[0-5] 2[0-4][0-9]  01)?[0-9]?[0-9])\.){3}(25[0-5] 2[0-4][0-9]  01)?[0-9]?[0-9])))/((([0-9]) ([0-9]{2}) (1[0-1][0-9]) (12[0-8]))))}	Source IPv6 address prefix.

filters enhanced-filter <A> filter <B> pbit-marking-list <C> pbit-value <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

C	uint8	The index associated with a metadata P-bit value.
D	uint8 [0..7]	This leaf-list provides a set of possible P-bit values as a criterion for classifying packets.  There is a match if the identified packet 's metadata P-bit is one of the values specified in the leaf-list.

filters enhanced-filter <A> filter <B> protocol <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	enumeration One of: igmp   mld   dhcpv4   dhcpv6   pppoe- discovery   icmpv6   nd   arp   cfm   dot1x   lacp	This leaf-list provides a set of protocols as a criterion for classifying packets with the intention to apply actions at matching condition.  There is a match if the packet is of one of the protocols specified in the leaf-list. If the leaf-list is not configured, then the protocol is not a criterion and then 'all packets match'.

filters enhanced-filter <A> filter <B> source-mac-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64}	Filter name.

	{pattern = [ --]*}	
--	--------------------	--

filters enhanced-filter <A> filter <B> source-mac-address any-multicast-mac-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> source-mac-address broadcast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> source-mac-address cfm-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> source-mac-address filter-match <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	boolean  default 'true'	This is logical operator for a filter.  When true, it indicates the filter looks for a match with a pattern defined by the filter-field. When false, it looks for a 'no match' with the pattern defined by the filter field.

filters enhanced-filter <A> filter <B> source-mac-address ipv4-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> source-mac-address ipv6-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64}	Filter name.

	{pattern = [ --]*}	
--	--------------------	--

filters enhanced-filter <A> filter <B> source-mac-address mac-address-mask <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}  default 'FF:FF:FF:FF:FF:FF'	A mask to be applied on the to be evaluated MAC address. The mask is applied as a bit-wise AND operation.

filters enhanced-filter <A> filter <B> source-mac-address mac-address-value <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}	The value with which a comparison shall be made after performing the bit-wise AND operation on the to be evaluated MAC address.

filters enhanced-filter <A> filter <B> source-mac-address unicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.

filters enhanced-filter <A> filter <B> transport

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.

filters enhanced-filter <A> filter <B> transport destination-port-range

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	Filter name.
B	string {length = 1..64} {pattern = [ ~]*}	Filter name.

filters enhanced-filter <A> filter <B> transport destination-port-range lower-port <C>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint16 [0..65535]	Lower boundary for a port.

filters enhanced-filter <A> filter <B> transport destination-port-range upper-port <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint16 [0..65535]	Upper boundary for a port.

filters enhanced-filter <A> filter <B> transport source-port-range

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> transport source-port-range lower-port <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint16 [0..65535]	Lower boundary for a port.

filters enhanced-filter <A> filter <B> transport source-port-range upper-port <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint16 [0..65535]	Upper boundary for a port.

filters enhanced-filter <A> filter <B> vlans

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

filters enhanced-filter <A> filter <B> vlans tag <C> in-dei <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.
C	uint8 [0..1]	The index into the tag stack with the outermost tag represented by index 0.
D	uint8 [0..1]	<p>Filter containing DEI bit value(s) to be matched with the values of the corresponding packet fields. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. E.g. an untagged packet does not contain a DEI bit, hence this packet will not match a specified DEI bit value. In case the leaf is unknown, no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the DEI bit of the outermost VLAN tag of the packet, the element with index 1 is used to match with the DEI bit of the second VLAN tag of the packet.</p>

filters enhanced-filter <A> filter <B> vlans tag <C> in-pbit-list <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.
B	string {length = 1..64} {pattern = [ --]*}	Filter name.

C	uint8 [0..1]	The index into the tag stack with the outermost tag represented by index 0.
D	string {pattern = ([0-7](-[0-7])?(,[0-7](-[0-7])?)*)}	<p>Filter containing P-bit value(s) to be matched with the value of the corresponding packet field. The list of values form an OR condition: in case the value of the packet field matches with one of the values of the leaf then there is a match. In case the leaf specifies a set of values and none of them appear in the packet, then there is no match. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. E.g. an untagged packet does not contain P-bits, hence this packet will not match a specified P-bit value. In case the leaf is an empty list, or unknown, then no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the P-bits of outermost VLAN tag of the packet, the element with index 1 is used to match with the P-bits of the second VLAN tag of the packet.</p>

filters enhanced-filter <A> filter-operation <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	Filter name.
B	identityref One of: match-all-filter   match-any-filter  default 'bbf-qos-clc:match-any-filter'	<p>The enhanced filter contains a 'filter' list. This leaf specifies how the entries of the 'filter' list have to be combined.</p> <p>The value 'match-any-filter' means a packet is declared to have a match with the enhanced filter entry if there is a match with at least one of the entries of its contained 'filter' list.</p>

		The value 'match-all-filter' means a packet is declared to have a match with the enhanced filter entry if there is a match with all entries of its contained filter list.
--	--	---

filters filter <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Filter name.

## 2.12 forwarding commands

### 2.12.1 Command Tree

```

|-- forwarding flooding-policies-profiles flooding-policies-profile <A>
|   |-- flooding-policy <B>
|       |-- destination-address any-frame
|       |-- destination-address any-multicast-mac-address
|       |-- destination-address broadcast-address
|       |-- destination-address ipv4-multicast-address
|       |-- destination-address ipv4-prefix <C>
|       |-- destination-address ipv6-multicast-address
|       |-- destination-address ntp-multicast-address
|       |-- destination-address rip-multicast-address
|       |-- destination-address unicast-address
|       |-- discard
|       |-- in-interface-usages interface-usages <C>
|       |-- out-interface-usages interface-usages <C>
|-- forwarding forwarders forwarder <A>
|   |-- ports port <B>
|   |-- sub-interface <C>
|-- forwarding forwarding-databases forwarding-database <A>
|   |-- aging-timer <B>
|   |-- mac-learning-control generate-mac-learning-alarm <B>
|   |-- mac-learning-control mac-learning-control-profile <B>
|   |-- max-number-mac-addresses <B>
|   |-- static-mac-address <B>
|       |-- static-forwarder-port-ref forwarder <C>
|       |-- static-forwarder-port-ref port <C>
|-- forwarding forwarding-databases remove-mac-addresses-from-port-down <A>
|-- forwarding mac-learning-control-profiles mac-learning-control-profile <A>
|   |-- mac-learning-rule <B>
|   |-- mac-can-not-move-to <C>
|-- forwarding split-horizon-profiles split-horizon-profile <A>
|   |-- split-horizon <B>
|   |-- out-interface-usage <C>

```

### 2.12.2 Commands

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
 destination-address any-frame

#### Input Parameters:

Parameter	Type	Description
A	string	The name of a flooding policies profile.

	{length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
destination-address any-multicast-mac-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
destination-address broadcast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
destination-address ipv4-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
destination-address ipv4-prefix <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.
C	string {pattern = (([0-9][0-9][0-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.)}{3}([0-9][0-9][0-9]1[0-9] [0-9]2[0-4][0-9]25[0-5])/((([0-9])([1-2][0-9]) (3[0-2])))}	This represents an IPv4 address prefix. The prefix length is given by the number following the slash character and must be less than or equal to 32.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
destination-address ipv6-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
 destination-address ntp-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
 destination-address rip-multicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B>  
 destination-address unicast-address

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B> discard

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B> in-interface-usages interface-usages <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of a flooding policy.
C	enumeration One of: user-port   network-port   subtended-node-port   inherit	List of interface-usages to which the frame classification applies.  An empty list means that the classification is applied to none of the interface usages and hence does not make sense.

forwarding flooding-policies-profiles flooding-policies-profile <A> flooding-policy <B> out-interface-usages interface-usages <C>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policies profile.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a flooding policy.
C	enumeration One of: user-port   network-port   subtended-node-port   inherit	List of interface usages to which the frame shall be forwarded.

forwarding forwarders forwarder <A> ports port <B> sub-interface <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarder.
B	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarder port.
C	leafref : /if:interfaces/if:interface/if:name	The VLAN sub-interface or layer 2 termination associated with this port.

forwarding forwarding-databases forwarding-database <A> aging-timer <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name associated with the forwarding database.
B	uint32  default '300'	Unit: seconds  MAC addresses are learned in the forwarding database against a forwarder port or against an interface. When no incoming traffic on this forwarder port or interface is received with a particular MAC

		address as source MAC address for a period specified in this aging timer, then this MAC address is removed from the forwarding database.
--	--	--

forwarding forwarding-databases forwarding-database <A> mac-learning-control generate-mac-learning-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name associated with the forwarding database.
B	boolean  default 'false'	If true, an alarm shall be generated on an attempt of a not allowed MAC movement. Allowed / not allowed MAC movements are controlled via the referenced entry in the list mac-learning-control-profile.

forwarding forwarding-databases forwarding-database <A> mac-learning-control mac-learning-control-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name associated with the forwarding database.
B	leafref : /bbf-l2-fwd:forwarding/bbf-l2-fwd:mac-learning-control-profiles/bbf-l2-fwd:mac-learning-control-profile/bbf-l2-fwd:name	A reference to a MAC address learning control profile.

forwarding forwarding-databases forwarding-database <A> max-number-mac-addresses <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name associated with the forwarding database.
B	uint32  default '4294967295'	Limits the number of MAC addresses that can be stored in this forwarding database.

forwarding forwarding-databases forwarding-database <A> static-mac-address <B> static-forwarder-port-ref forwarder <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name associated with the forwarding database.
B	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}	The MAC address to which the constraint applies.
C	leafref : /bbf-l2-fwd:forwarding/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder/bbf-l2-fwd:name	This leaf references a forwarder.

forwarding forwarding-databases forwarding-database <A> static-mac-address <B> static-forwarder-port-ref port <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name associated with the forwarding database.
B	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}	The MAC address to which the constraint applies.
C	leafref	This leaf references a port within the forwarder identified by the leaf 'forwarder'.

	: /bbf-l2-fwd:forwarding/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder[bbf-l2-fwd:name = current()/../forwarder]/bbf-l2-fwd:ports/bbf-l2-fwd:port/bbf-l2-fwd:name	
--	--	--

forwarding forwarding-databases remove-mac-addresses-from-port-down <A>

#### Input Parameters:

Parameter	Type	Description
A	boolean  default 'false'	<p>For independent forwarding databases: At the occasion the operational state of the interface referenced by a forwarder port is different from 'up', or in case the operational state of a lower layer interface of the interface referenced by a forwarder port is different from up, then the value 'true' of the leaf instructs the system to remove the MAC addresses that were learned for the forwarder port from the forwarding database.</p> <p>For shared forwarding databases: At the occasion the operational state of the interface referenced by a forwarder is different from 'up', or in case the operational state of a lower layer interface of the interface referenced by a forwarder is different from up, then the value 'true' of the leaf instructs the system to remove the MAC addresses that were learned for the interface from the forwarding database.</p>

forwarding mac-learning-control-profiles mac-learning-control-profile <A> mac-learning-rule <B>  
mac-can-not-move-to <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	The name of a MAC address learning control profile.

B	enumeration One of: user-port   network-port   subtended-node-port   inherit	Defines MAC address learning rules for frames received on a port for which the interface usage of the underlying interface is of this value.
C	enumeration One of: user-port   network-port   subtended-node-port   inherit	Provides a list of interface-usage values to which MAC addresses can not move.

forwarding split-horizon-profiles split-horizon-profile <A> split-horizon <B> out-interface-usage <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	The name of the profile.
B	enumeration One of: user-port   network-port   subtended-node-port   inherit	The interface usage from which forwarding is specified here.
C	enumeration One of: user-port   network-port   subtended-node-port   inherit	The interface usage to which frames coming from the 'in-interface-usage' are not allowed to be forwarded. Frame forwarding to interface usages not configured is allowed.

## 2.13 frame-processing-profiles commands

### 2.13.1 Command Tree

```

|-- frame-processing-profiles frame-processing-profile <A>
|  |-- priority <B> (Mandatory)
|  |-- egress-rewrite push-tag <B>
|     |-- dei-marking-index <C>
|     |-- pbit-marking-index <C>
|     |-- tag-type <C>
|     |-- vlan-id <C>
|     |-- write-dei-0
|  |-- ingress-rewrite copy-from-tags-to-marking-list <B>
|     |-- dei-marking-index <C>
|     |-- pbit-marking-index <C>
|  |-- ingress-rewrite pop-tags <B>
|  |-- match-criteria any-frame
|  |-- match-criteria tag <B>
|     |-- tag-type <C> (Mandatory)
|     |-- vlan-id <C> (Mandatory)
|     |-- dei <C>
|     |-- pbit <C>
|  |-- match-criteria untagged

```

### 2.13.2 Commands

frame-processing-profiles frame-processing-profile <A> priority <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	The name of the profile.
B	uint16 [1..max]	<p>This field indicates the priority for applying the match criteria of this rule against the priority of match criteria of other rules of other interfaces on the same parent-interface.</p> <p>The higher the value, the lower the priority, i.e. priority 1 is the highest priority.</p>

frame-processing-profiles frame-processing-profile <A> egress-rewrite push-tag <B> dei-marking-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack.
C	uint8	This leaf provides the index in the list dei-marking-list from which the DEI value shall be taken to put in the VLAN tag.

frame-processing-profiles frame-processing-profile <A> egress-rewrite push-tag <B> pbit-marking-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack.
C	uint8	This leaf provides the index in the list pbit-marking-list from which the PBIT bits value shall be taken to put in the VLAN tag.

frame-processing-profiles frame-processing-profile <A> egress-rewrite push-tag <B> tag-type <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.

B	uint8 [0..1]	The index into the tag stack.
C	union identityref One of: c-vlan   s-vlan  uint16  enumeration One of: tag-type-from-match  default 'tag-type-from-match'	VLAN tag type.

frame-processing-profiles frame-processing-profile <A> egress-rewrite push-tag <B> vlan-id <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack.
C	union uint16 [0..4094]  enumeration One of: vlan-id-from-match  default 'vlan-id-from-match'	The VLAN-ID value to write in the sent frames' identified VLAN tag.

frame-processing-profiles frame-processing-profile <A> egress-rewrite push-tag <B> write-dei-0

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack.

frame-processing-profiles frame-processing-profile <A> ingress-rewrite copy-from-tags-to-marking-list <B> dei-marking-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	Specifies from which input VLAN tag fields MUST be copied to the packet's marking-list.
C	union enumeration One of: not-preserved  uint8  default 'not-preserved'	Specifies the index of the packet's dei-marking-list to which the DEI bit shall be copied.

frame-processing-profiles frame-processing-profile <A> ingress-rewrite copy-from-tags-to-marking-list <B> pbit-marking-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.

B	uint8 [0..1]	Specifies from which input VLAN tag fields MUST be copied to the packet's marking-list.
C	union enumeration One of: not-preserved  uint8  default 'not-preserved'	Specifies the index of the packet's pbit-marking-list to which the PBIT bits shall be copied.

frame-processing-profiles frame-processing-profile <A> ingress-rewrite pop-tags <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	The name of the profile.
B	uint8 [0..2]  default '0'	The number of tags to pop (or translate if used in conjunction with push-tags).

frame-processing-profiles frame-processing-profile <A> match-criteria any-frame

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	The name of the profile.

frame-processing-profiles frame-processing-profile <A> match-criteria tag <B> tag-type <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack, outermost tag first.
C	union identityref One of: c-vlan   s-vlan  uint16	VLAN tag type.

frame-processing-profiles frame-processing-profile <A> match-criteria tag <B> vlan-id <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack, outermost tag first.
C	union uint16 [1..4094]  enumeration One of: priority-tagged   parameter-vlan-id	Allowed VLAN-IDs.

frame-processing-profiles frame-processing-profile <A> match-criteria tag <B> dei <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64}	The name of the profile.

	{pattern = [ --]*}	
B	uint8 [0..1]	The index into the tag stack, outermost tag first.
C	union uint8 [0..1]  enumeration One of: any  default 'any'	Allowed DEI values.

frame-processing-profiles frame-processing-profile <A> match-criteria tag <B> pbit <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint8 [0..1]	The index into the tag stack, outermost tag first.
C	union string {pattern = ([0-7](-[0-7])?([0-7](-[0-7])?)*)}  enumeration One of: any  default 'any'	Allowed PBIT values.

frame-processing-profiles frame-processing-profile <A> match-criteria untagged

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ -~]*}	The name of the profile.
---	--	--------------------------

## 2.14 hardware commands

### 2.14.1 Command Tree

```

|-- hardware component <A>
  |-- class <B> (Mandatory)
  |-- admin-state <B>
  |-- alias <B>
  |-- als-enabled <B>
  |-- asset-id <B>
  |-- board-working-mode <B>
  |-- hierarchy-meta-info <B>
  |-- input-scan-point (Presence)
    |-- alarm-text <B> (Mandatory)
    |-- alarm-severity <B>
    |-- output-scan-point <B>
    |-- polarity <B>
  |-- mfg-name <B>
  |-- model-name <B>
  |-- output-scan-point (Presence)
    |-- description <B>
  |-- parent <B>
  |-- parent-rel-pos <B>
  |-- serial-num <B>
  |-- tca-monitoring-enabled <B>
  |-- tca-transceiver-link-profile <B>
  |-- tca-transceiver-profile <B>
  |-- uri <B>

```

### 2.14.2 Commands

hardware component <A> class <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Administrative name for this component. No restrictions apply.
B	identityref One of: acu   alarm-port-input-scan-point   alarm-port-output-scan-point   backplane   backplane-port   battery   bits-port   board   cage   cage-uni   chassis   container   cpu   dac-port   energy-object   external-alarm-port   fan   fan-pack   fastdsl-coax   fastdsl-	An indication of the general hardware type of the component.

	tp   gnss-port   lt   moca   module   nt   ntio   port   power-supply   psu   rf-video   rj11   rj45   rj45-10-100M   rj45-100M   rj45-10G   rj45-10M   rj45-1G   rj45-2.5G   rj45-25G   rj45-40G   rj45-5G   sensor   slot   slot-acu   slot-fan   slot-lt   slot-lt-ntio   slot-nt   slot-ntio   slot-psu   stack   storage-drive   transceiver   transceiver-link   transceiver-link-gpon   transceiver-link-hspon   transceiver-link-ngpon   transceiver-link-twentyfivegpon   transceiver-link-xgpon   unknown   virtual-port	
--	--	--

hardware component <A> admin-state <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Administrative name for this component. No restrictions apply.
B	enumeration One of: unknown   locked   shutting-down   unlocked	<p>The administrative state for this component.</p> <p>This node refers to a component's administrative permission to service both other components within its containment hierarchy as well other users of its services defined by means outside the scope of this module.</p> <p>Some components exhibit only a subset of the remaining administrative state values. Some components cannot be locked, and hence this node exhibits only the 'unlocked' state. Other components cannot be shutdown gracefully, and hence this node does not exhibit the 'shutting-down' state.</p>

hardware component <A> alias <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 0..64} {pattern = [!#&-Z\^_-z ~]*}	<p>This node is an 'alias' name for the component, as specified by a network manager, and provides a non- volatile 'handle' for the component.</p> <p>A server implementation MAY map this leaf to the entPhysicalAlias MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and entPhysicalAlias. The definition of such a mechanism is outside the scope of this document.</p>

hardware component <A> als-enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	boolean  default 'true'	Indicates whether automatic laser shutdown is enabled or disabled per transceiver. Takes effect when configured on optical ethernet transceiver, ignored if transceiver is of type electrical or GPON or NGPON.

hardware component <A> asset-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 0..64} {pattern = [!#&-Z\^_-z ~]*}	This node is a user-assigned asset tracking identifier (as specified by a network manager) for the component.

		A server implementation MAY map this leaf to the entPhysicalAssetID MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and entPhysicalAssetID. The definition of such a mechanism is outside the scope of this document.
--	--	---

hardware component <A> board-working-mode <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Administrative name for this component. No restrictions apply.
B	identityref One of: downlink-mode   uplink-mode	Indicates board working mode.

hardware component <A> hierarchy-meta-info <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 0..128}	Hierarchy meta info data.

hardware component <A> input-scan-point

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64}	Administrative name for this component. No restrictions apply.

	{pattern = [#&-Z\^_-z ~]*}	
--	----------------------------	--

hardware component <A> input-scan-point alarm-text <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 1..1024} {pattern = [#&-Z\^_-z ~]*}	Indicates the type of customizable external alarm per alarm-port-input-scan-point. This text will be printed as 'alarm-text' in the external-alarm.

hardware component <A> input-scan-point alarm-severity <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	enumeration One of: indeterminate   warning   minor   major   critical  default 'major'	Defines the severity of the configurable external-alarm.

hardware component <A> input-scan-point output-scan-point <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64}	Administrative name for this component. No restrictions apply.

	{pattern = [#&-Z\^_-z ~]*}	
B	leafref : /hw:hardware/hw:component/hw:name	Indicates the alarm-port-output-scan-point components that are referenced. Referenced alarm-port-output-scan-points drives audible/visible external device when the input scan point detects alarm.

hardware component <A> input-scan-point polarity <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	enumeration One of: normal   inverse  default 'normal'	Defines the polarity of the configurable external-alarm.

hardware component <A> mfg-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 0..64} {pattern = [#&-Z\^_-z ~]*}	The name of the manufacturer of this physical component.

hardware component <A> model-name <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string	The vendor-specific model name identifier string associated with this physical component. The preferred value is the customer-visible part number, which may be printed on the component itself. If the model name string associated with the physical component is unknown to the server, then this node will contain a zero-length string.

hardware component <A> output-scan-point

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.

hardware component <A> output-scan-point description <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 0..1024} {pattern = [!#&-Z\^_-z ~]*}  default ""	String detailing the usage of external-alarm-port-output-scan-point.

hardware component <A> parent <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	leafref : .././component/name	The name of the component that contains this component.

hardware component <A> parent-rel-pos <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	int32 [1 .. 2147483647]	An indication of the relative position of this child component among all its sibling components. Sibling components are defined as components that share the same instance values of each of the 'parent' and 'class' nodes.

hardware component <A> serial-num <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Administrative name for this component. No restrictions apply.
B	string {length = 0..64} {pattern = [!#&-Z\^_-z ~]*}	<p>The vendor-specific serial number string for the component. The preferred value is the serial number string actually printed on the component itself (if present).</p> <p>This node is indented to be used for components for which the server cannot determine the serial number.</p>

hardware component <A> tca-monitoring-enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Administrative name for this component. No restrictions apply.
B	boolean  default 'false'	Indicates whether transceiver's voltage, temperature, transceiver-link tca parameters rx-power,tx-power, bias-current monitoring is enabled or disabled per transceiver. When enabled, current values are compared with the defined thresholds to raise alarm incase crossing defined thresholds.

hardware component <A> tca-transceiver-link-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Administrative name for this component. No restrictions apply.
B	leafref : /nokia-hw-prof:tca-profiles/nokia-hw-prof:transceiver-link-tca-profile/nokia-hw-prof:name	Reference to a tca transceiver-link configuration profile.

hardware component <A> tca-transceiver-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Administrative name for this component. No restrictions apply.
B	leafref : /nokia-hw-prof:tca-profiles/nokia-hw-prof:transceiver-tca-profile/nokia-hw-prof:name	Reference to a tca transceiver configuration profile.

hardware component <A> uri <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Administrative name for this component. No restrictions apply.
B	string	This node contains identification information about the component.

## 2.15 interfaces commands

### 2.15.1 Command Tree

```

|-- interfaces interface <A>
|  |-- interface-usage interface-usage <B> \(Mandatory\)
|  |-- subif-lower-layer interface <B> \(Mandatory\)
|  |-- tag-0 vlan-id <B> \(Mandatory\)
|  |-- tag-1 vlan-id <B> \(Mandatory\)
|  |-- type <B> \(Mandatory\)
|  |-- aggregation-port \(Presence\)
|     |-- aggregation-port-lacp actor-admin-key <B>
|     |-- aggregation-port-lacp actor-admin-state <B>
|     |-- aggregation-port-lacp actor-port-priority <B>
|     |-- aggregation-port-lacp actor-system-priority <B>
|     |-- intra-relay-port <B>
|  |-- aggregator \(Presence\)
|     |-- aggregator-lacp actor-admin-key <B>
|     |-- agg-system-name <B>
|     |-- cross-lt-lag \(Presence\)
|        |-- is-cross-lt-aggregator <B>
|        |-- primary-port-location \(Presence\)
|           |-- port-id <B> \(Mandatory\)
|           |-- slot-id <B> \(Mandatory\)
|           |-- access-node-id <B>
|     |-- max-active-number <B>
|     |-- mode <B>
|     |-- name <B>
|     |-- primary-lag-port-ref <B>
|  |-- channel-v-enet channel-id <B>
|  |-- channel-v-enet low-layer-if <B>
|  |-- control-protocol \(Presence\)
|     |-- name <B>
|  |-- description <B>
|  |-- egress-qos-policy-profile <B>
|  |-- enabled <B>
|  |-- ethernet auto-negotiation duplex <B>
|  |-- ethernet auto-negotiation speed <B>
|  |-- ethernet auto-negotiation status <B>
|  |-- ethernet manual duplex <B>
|  |-- ethernet manual speed <B>
|  |-- ethernet tca \(Presence\)
|     |-- intervals-15min fcs-errors-threshold <B>
|     |-- intervals-15min rx-octets-threshold <B>
|     |-- intervals-15min tx-octets-threshold <B>
|  |-- frame-processing-profile-ref <B>
|  |-- hierarchy-meta-info <B>
|  |-- ingress-cpu-packets-rate-limit no-rate-limit
|  |-- ingress-cpu-packets-rate-limit rate-limit-policy-name <B>
|  |-- ingress-qos-policy-profile <B>
|  |-- inline-frame-processing egress-rewrite push-tag <B>
|     |-- dot1q-tag tag-type <C> \(Mandatory\)
|     |-- dot1q-tag vlan-id <C> \(Mandatory\)

```

---

```

|-- dot1q-tag dei-from-tag-index <C>
|-- dot1q-tag dei-marking-index <C>
|-- dot1q-tag pbit-from-tag-index <C>
|-- dot1q-tag pbit-marking-index <C>
|-- inline-frame-processing ingress-rule rule <B>
|-- priority <C> (Mandatory)
|-- flexible-match match-criteria any-frame
|-- flexible-match match-criteria match-all
|-- flexible-match match-criteria tag <C>
|   |-- dot1q-tag tag-type <D> (Mandatory)
|   |-- dot1q-tag vlan-id <D> (Mandatory)
|   |-- dot1q-tag dei <D>
|   |-- dot1q-tag pbit <D>
|-- flexible-match match-criteria untagged
|-- ingress-rewrite copy-from-tags-to-marking-list <C>
|   |-- dei-marking-index <D>
|   |-- pbit-marking-index <D>
|-- ingress-rewrite pop-tags <C>
|-- ingress-rewrite push-tag <C>
|-- ipif-lower-layer (Presence)
|   |-- sub-interface <B> (Mandatory)
|-- ipv4 (Presence)
|   |-- address <B>
|   |   |-- netmask <C>
|   |   |-- prefix-length <C>
|   |-- enabled <B>
|-- ipv6 (Presence)
|   |-- address <B>
|   |   |-- prefix-length <C> (Mandatory)
|   |-- enabled <B>
|-- l2-termination egress-rewrite push-tag <B>
|   |-- tag-type <C> (Mandatory)
|   |-- vlan-id <C> (Mandatory)
|   |-- pbit <C>
|-- l2-termination ingress-rewrite pop-tags <B>
|-- link-up-down-trap-enable <B>
|-- mac-learning max-number-mac-addresses <B>
|-- performance enable <B>
|-- port-layer-if <B>
|-- speed-monitoring (Presence)
|   |-- enable <B>
|-- statistics enable <B>
|-- tag-ip-intf (Presence)
|   |-- tag-ip-intf <B>
|-- tm-root queue <B>
|   |-- bac-name <C> (Mandatory)
|   |-- priority <C>
|   |-- shaper-name <C>
|   |-- weight <C>
|-- tm-root queue-monitoring enable-performance <B>
|-- tm-root queue-monitoring enable-statistics <B>
|-- tm-root shaper-name <B>

```

```
-- tm-root tc-id-2-queue-id-mapping-profile-name <B>
-- vector-profile <B>
```

## 2.15.2 Commands

interfaces interface <A> interface-usage interface-usage <B>

### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	enumeration One of: user-port   network-port   subtended-node-port   inherit	Identifies the position of the interface in the network.

interfaces interface <A> subif-lower-layer interface <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /if:interfaces/if:interface/if:name	References the lower-layer interface.

interfaces interface <A> tag-0 vlan-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

	<pre>{length = 1..100} {pattern = [!#&amp;-Z\^_-z ~]*}</pre>	<p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	<pre>uint16 [0..4094]</pre>	<p>When: /bbf-frameproc:frame-processing-profiles/bbf-frameproc:frame-processing-profile[bbf-frameproc:name = current()/../frame-processing-profile-ref]/match-criteria/tag[index = 0]/vlan-id = "parameter-vlan-id"</p> <p>Allowed VLAN-IDs.</p>

interfaces interface <A> tag-1 vlan-id <B>

**Input Parameters:**

Parameter	Type	Description
A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z\^_-z ~]*}</pre>	The name of the interface.

		<p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint16 [0..4094]	<p>When: /bbf-frameproc:frame-processing-profiles/bbf-frameproc:frame-processing-profile[bbf-frameproc:name = current()/../frame-processing-profile-ref]/match-criteria/tag[index = 1]/vlan-id = "parameter-vlan-id"</p> <p>Allowed VLAN-IDs.</p>

interfaces interface <A> type <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the</p>

		<p>type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<p>identityref</p> <p>One of:</p> <p>channel-v-enet   channelized-ethernetCsmacd   ethernetCsmacd   ieee8023adLag   ipForward   I2-termination   vlan-sub-interface</p>	<p>The type of the interface.</p> <p>When an interface entry is created, a server MAY initialize the type leaf with a valid value, e.g., if it is possible to derive the type from the name of the interface.</p> <p>If a client tries to set the type of an interface to a value that can never be used by the system, e.g., if the type is not supported or if the type does not match the name of the interface, the server MUST reject the request. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p>

interfaces interface <A> aggregation-port

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

interfaces interface <A> aggregation-port aggregation-port-lacp actor-admin-key <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false'</p>

		<p>list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint16 [1..65535]	The current administrative value of the Key for the Aggregation Port. The meaning of particular Key values is of local significance.

interfaces interface <A> aggregation-port aggregation-port-lacp actor-admin-state <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface</p>

		<p>list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	bits	<p>Corresponding to the administrative values of Actor_State (5.4.2) as transmitted by the Actor in LACPDUs. The first bit corresponds to bit 0 of Actor_State (LACP_Activity), the second bit corresponds to bit 1 (LACP_Timeout), the third bit corresponds to bit 2 (Aggregation), the fourth bit corresponds to bit 3 (Synchronization), the fifth bit corresponds to bit 4 (Collecting), the sixth bit corresponds to bit 5 (Distributing), the seventh bit corresponds to bit 6 (Defaulted), and the eighth bit corresponds to bit 7 (Expired). These values allow administrative control over the values of LACP_Activity, LACP_Timeout, and Aggregation.</p>

interfaces interface <A> aggregation-port aggregation-port-lacp actor-port-priority <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific</p>

		<p>name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint16 [0..65535]	The priority value assigned to this Aggregation Port.

interfaces interface <A> aggregation-port aggregation-port-lacp actor-system-priority <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface</p>

		<p>list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint16 [0..65535]	Define the priority value associated with the Actors System ID.

interfaces interface <A> aggregation-port intra-relay-port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p>

		<p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	leafref : /if:interfaces/if:interface/if:name	<p>When: ../if:type = 'ianaift:ethernetCsmacd'</p> <p>References to an intra relay port interface.</p>

interfaces interface <A> aggregator

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p>

		<p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
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interfaces interface <A> aggregator aggregator-lacp actor-admin-key <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>

B	uint16 [1..65535]	The current administrative value of the Key for the Aggregator. The administrative Key value may differ from the operational Key value for the reasons discussed in 5.6.2. The meaning of particular Key values is of local significance.
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interfaces interface <A> aggregator agg-system-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref	Used to reference the LAG system.

	: /dot1ax:lag-system/dot1ax:aggregating-system/dot1ax:agg-system	
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interfaces interface <A> aggregator cross-lt-lag

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

interfaces interface <A> aggregator cross-lt-lag is-cross-lt-aggregator <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	boolean  default 'true'	Setting 'true' indicates this aggregator is a cross LT LAG

interfaces interface <A> aggregator cross-lt-lag primary-port-location

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name of the interface.

		<p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
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interfaces interface <A> aggregator cross-lt-lag primary-port-location port-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not</p>

		<p>present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint32 [1..4294967295]	The index of the primary port. The QSFP cage has 4 ports, other cage has 2 ports, the first port begins from 1

interfaces interface <A> aggregator cross-lt-lag primary-port-location slot-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST</p>

		<p>reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint32 [1..4294967295]	The slot-id of the board hosting the primary port. In that case this value is identified by the parent-rel-pos value of the corresponding slot entry (with class = slot-Id) in the list 'hardware-state/component' in the ietf-hardware YANG module.

interfaces interface <A> aggregator cross-lt-lag primary-port-location access-node-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p>

		<p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	string {length = 0..63} {pattern = [ -~]*}	The access-node-id of the node which hosts the primary port. In that case the value is identified by the object /system/subscriber-management/access-node-id defined in the bbf-subscriber-profiles YANG module.

interfaces interface <A> aggregator max-active-number <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p>

		<p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint16 [1..8]	max active members in a link-group, used to support ACT-ACT or ACT-Standby

interfaces interface <A> aggregator mode <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated</p>

		with the same name in the /interface-state/ interface list.
B	enumeration One of: static   dynamic  default 'static'	mode of link aggregation group

interfaces interface <A> aggregator name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>

B	string {length = 0..255}	A human-readable text string containing a locally significant name for the Aggregator
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interfaces interface <A> aggregator primary-lag-port-ref <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /if:interfaces/if:interface/if:name	Primary LAG port is a reference to an ethernet interface which is a member port of LAG. This port reference shall be used as reference for protocol handling whenever a packet needs to be manipulated.

interfaces interface <A> channel-v-enet channel-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint32	Allows to configure the channel-id for channel-v-enet interface

interfaces interface <A> channel-v-enet low-layer-if <B>

**Input Parameters:**

Parameter	Type	Description
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A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z^_~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<pre>leafref : /if:interfaces/if:interface/if:name</pre>	<p>References of channelized-ethernet macd interface that is the lower layer interface under the channel-v-enet interface.</p>

interfaces interface <A> control-protocol

**Input Parameters:**

Parameter	Type	Description
A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z^_~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific</p>

		<p>name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
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interfaces interface <A> control-protocol name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-</p>

		<p>provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	<p>leafref</p> <p>: /rt:routing/rt:control-plane-protocols/rt:control-plane-protocol/rt:name</p>	References the control protocol name

interfaces interface <A> description <B>

**Input Parameters:**

Parameter	Type	Description
A	<p>string</p> <p>{length = 1..100}</p> <p>{pattern = [!#&amp;-Z\^_-z ~]*}</p>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p>

		<p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	string	<p>A textual description of the interface.</p> <p>A server implementation MAY map this leaf to the ifAlias MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifAlias. The definition of such a mechanism is outside the scope of this document.</p> <p>Since ifAlias is defined to be stored in non-volatile storage, the MIB implementation MUST map ifAlias to the value of 'description' in the persistently stored datastore.</p> <p>Specifically, if the device supports ':startup', when ifAlias is read the device MUST return the value of 'description' in the 'startup' datastore, and when it is written, it MUST be written to the 'running' and 'startup' datastores. Note that it is up to the implementation to</p> <p>decide whether to modify this single leaf in 'startup' or perform an implicit copy-config from 'running' to 'startup'.</p> <p>If the device does not support ':startup', ifAlias MUST be mapped to the 'description' leaf in the 'running' datastore.</p>

interfaces interface <A> egress-qos-policy-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /bbf-qos-pol:qos-policy-profiles/bbf-qos-pol:policy-profile/bbf-qos-pol:name	A reference to a QoS policy profile. The profile is to be applied to outgoing packets.

interfaces interface <A> enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the</p>

		<p>type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<p>boolean</p> <p>default 'true'</p>	<p>This leaf contains the configured, desired state of the interface.</p> <p>Systems that implement the IF-MIB use the value of this leaf in the 'running' datastore to set IF-MIB.ifAdminStatus to 'up' or 'down' after an ifEntry has been initialized, as described in RFC 2863.</p> <p>Changes in this leaf in the 'running' datastore are reflected in ifAdminStatus, but if ifAdminStatus is changed over SNMP, this leaf is not affected.</p>

interfaces interface <A> ethernet auto-negotiation duplex <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	enumeration One of: full   half	<p>Allows the advertised duplex value in the negotiation to be restricted. Half duplex can only be negotiated for some interface types - as specified in 802.3, annex section 28B.3. If not specified then the default behaviour is to negotiate all available values for the particular type of Ethernet PHY associated with the interface.</p>

interfaces interface <A> ethernet auto-negotiation speed <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	identityref One of: eth-if-speed-100gb   eth-if-speed-100mb   eth-if-speed-10gb   eth-if-speed-10mb   eth-if-speed-1gb   eth-if-speed-2.5gb   eth-if-speed-40gb   eth-if-speed-5gb	<p>Allows the advertised speed value in the negotiation to be restricted. Speed is only negotiated for some PHYs, many higher speed PHYs operate at a fixed speed. If this leaf is not set then the default behaviour is to negotiate all available speeds, generally choosing the fastest speed as per 802.3 Annex 28B.3.</p>

interfaces interface <A> ethernet auto-negotiation status <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	enumeration One of: enabled   disabled	Allows auto-negotiation to be explicitly enabled/disabled. If the leaf is not present then the default behaviour is vendor/interface specific.

interfaces interface <A> ethernet manual duplex <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name of the interface.

		<p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<p>enumeration</p> <p>One of:</p> <p>full   half</p> <p>default 'full'</p>	<p>Configures the interface to run in either full or half duplex mode.</p>

interfaces interface <A> ethernet manual speed <B>

**Input Parameters:**

Parameter	Type	Description
A	<p>string</p> <p>{length = 1..100}</p> <p>{pattern = [!#&amp;-Z\^_-z ~]*}</p>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled</p>

		<p>interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<p>identityref</p> <p>One of:</p> <p>eth-if-speed-100gb   eth-if-speed-100mb   eth-if-speed-10gb   eth-if-speed-10mb   eth-if-speed-1gb   eth-if-speed-2.5gb   eth-if-speed-40gb   eth-if-speed-5gb</p>	<p>For PHY types that may operate at various speeds, this leaf allows the interface to be forced to operate at a particular speed. Without any explicit configuration, Ethernet interfaces run at the maximum speed that they are capable of operating at</p>

interfaces interface <A> ethernet tca

#### Input Parameters:

Parameter	Type	Description
A	<p>string</p> <p>{length = 1..100}</p> <p>{pattern = [!#&amp;-Z^_~]*}</p>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false'</p>

		<p>list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
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interfaces interface <A> ethernet tca intervals-15min fcs-errors-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist</p>

		<p>in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint64	Configures fcs errors threshold for ethernet interface within current interval.

interfaces interface <A> ethernet tca intervals-15min rx-octets-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p>

		<p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint64	<p>Unit: bytes</p> <p>Configures rx octets threshold for ethernet interface within current interval.</p>

interfaces interface <A> ethernet tca intervals-15min tx-octets-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p>

		When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.
B	uint64	Unit: bytes  Configures tx octets threshold for ethernet interface within current interval.

interfaces interface <A> frame-processing-profile-ref <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>

B	leafref : /bbf-frameproc:frame-processing-profiles/ bbf-frameproc:frame-processing-profile/bbf- frameproc:name	.
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interfaces interface <A> hierarchy-meta-info <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {length = 0..256}	Hierarchy meta info data.

interfaces interface <A> ingress-cpu-packets-rate-limit no-rate-limit

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

interfaces interface <A> ingress-cpu-packets-rate-limit rate-limit-policy-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the</p>

		<p>type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	leafref : /bbf-qos-pol:policies/bbf-qos-pol:policy/bbf-qos-pol:name	The name of referenced policy, which actions in the referenced classifiers all are rate-limit-frames.

interfaces interface <A> ingress-qos-policy-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /bbf-qos-pol:qos-policy-profiles/bbf-qos-pol:policy-profile/bbf-qos-pol:name	A reference to a QoS policy profile. The profile is to be applied to incoming packets.

interfaces interface <A> inline-frame-processing egress-rewrite push-tag <B> dot1q-tag tag-type <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if</p>

		<p>the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	union identityref One of: c-vlan   s-vlan  uint16  string {pattern = 0x[A-Fa-f0-9]{4}}	VLAN tag type.

interfaces interface <A> inline-frame-processing egress-rewrite push-tag <B> dot1q-tag vlan-id <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	union uint16 [0..4094]  enumeration One of: vlan-id-from-tag-index	The VLAN ID, the value 0 (priority-tagged) or configure to derive from an existing tag.

interfaces interface <A> inline-frame-processing egress-rewrite push-tag <B> dot1q-tag dei-  
from-tag-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific</p>

		<p>name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	uint8 [0..1]	Specifies from which tag the DEI bit MUST be copied.

interfaces interface <A> inline-frame-processing egress-rewrite push-tag <B> dot1q-tag dei-marking-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	uint8	<p>A QoS policy can generate more than one dei-value (for possible usage in multiple VLAN tags). In this case each of them is identified by an index.</p> <p>This leaf provides the index in the list dei-marking-list from which the DEI bits value shall be taken to put in the VLAN tag.</p>

interfaces interface <A> inline-frame-processing egress-rewrite push-tag <B> dot1q-tag pbit-from-tag-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific</p>

		<p>name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	uint8 [0..1]	Specifies from which tag the p-bits MUST be copied.

interfaces interface <A> inline-frame-processing egress-rewrite push-tag <B> dot1q-tag pbit-marking-index <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	uint8	<p>A QoS policy can generate more than one pbit-value (for possible usage in multiple VLAN tags). In this case each of them is identified by an index.</p> <p>This leaf provides the index in the list pbit-marking-list from which the PBIT bits value shall be taken to put in the VLAN tag.</p>

interfaces interface <A> inline-frame-processing ingress-rule rule <B> priority <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false'</p>

		<p>list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	string {length = 1..64} {pattern = [ -~]*}	The rule name.
C	uint16 [1..max]	<p>This field indicates the priority for applying the match criteria of this rule against the priority of match criteria of other rules of this and other sub-interfaces on the same parent-interface.</p> <p>The higher the value, the lower the priority, i.e. priority 1 is the highest priority.</p> <p>Note that priorities of rules do not have to be unique within a lower-layer interface. For example, if there is no overlap in the 'flexible-match' criteria of a different sub-interfaces having the same lower layer interface, then the configuration is still unambiguous. If different sub-interfaces with the same lower layer interface are configured such that there is overlap between their flexible-match criteria, then unambiguity is achieved by configuring the rules with different priorities. If the priority is configured equal, despite having</p>

		overlapping match criteria, then the device's behavior is undefined, meaning, it can be different in different devices, even more it can be different in single device over time.
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interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria any-frame

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {length = 1..64} {pattern = [ ~-]*}	The rule name.

interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria match-all

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {length = 1..64} {pattern = [ -~]*}	The rule name.

interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria tag <C> dot1q-tag tag-type <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {length = 1..64} {pattern = [ --]*}	The rule name.
C	uint8 [0..1]	The index into the tag stack, outermost tag first.
D	union identityref One of: c-vlan   s-vlan	VLAN tag type.

	uint16	
	string {pattern = 0x[A-Fa-f0-9]{4}}	
	enumeration One of: any	

interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria tag <C> dot1q-tag vlan-id <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated</p>

		with the same name in the /interface-state/ interface list.
B	string {length = 1..64} {pattern = [ ~-]*}	The rule name.
C	uint8 [0..1]	The index into the tag stack, outermost tag first.
D	union string {pattern = (([1-9][1-9][0-9][1-9][0-9][0-9][1-3][0-9][0-9][0-9]40[0-8][0-9]409[0-4])([,,-]([1-9][1-9][0-9][1-9][0-9][0-9][1-3][0-9][0-9][0-9]40[0-8][0-9]409[0-4]))*)?}  enumeration One of: any   priority-tagged	Allowed VLAN IDs.

interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria tag <C> dot1q-tag dei <D>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p>

		<p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	string {length = 1..64} {pattern = [ --~]*}	The rule name.
C	uint8 [0..1]	The index into the tag stack, outermost tag first.
D	union uint8 [0..1]  enumeration One of: any   default 'any'	Allowed DEI values.

interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria tag <C> dot1q-tag pbit <D>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	string {length = 1..64} {pattern = [ --~]*}	The rule name.
C	uint8 [0..1]	The index into the tag stack, outermost tag first.
D	union string {pattern = ([0-7](-[0-7])? ([0-7](-[0-7])?)*)}  enumeration One of: any   default 'any'	Allowed p-bits values.

interfaces interface <A> inline-frame-processing ingress-rule rule <B> flexible-match match-criteria untagged

#### Input Parameters:

Parameter	Type	Description
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A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z^_-z ~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<pre>string {length = 1..64} {pattern = [ --~]*}</pre>	<p>The rule name.</p>

interfaces interface <A> inline-frame-processing ingress-rule rule <B> ingress-rewrite copy-from-tags-to-marking-list <C> dei-marking-index <D>

**Input Parameters:**

Parameter	Type	Description
A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z^_-z ~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the</p>

		<p>type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {length = 1..64} {pattern = [ -~]*}	The rule name.
C	uint8 [0..1]	Specifies from which input VLAN tag fields MUST be copied to the packet's marking-list.
D	union enumeration One of: not-preserved  uint8  default 'not-preserved'	Specifies the index of the packet's de-marking-list to which the DEI bit shall be copied.

interfaces interface <A> inline-frame-processing ingress-rule rule <B> ingress-rewrite copy-from-tags-to-marking-list <C> pbit-marking-index <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {length = 1..64} {pattern = [ --]*}	The rule name.
C	uint8 [0..1]	Specifies from which input VLAN tag fields MUST be copied to the packet's marking-list.
D	union enumeration One of: not-preserved	Specifies the index of the packet's pbit-marking-list to which the PBIT bits shall be copied.

	uint8	
	default 'not-preserved'	

interfaces interface <A> inline-frame-processing ingress-rule rule <B> ingress-rewrite pop-tags  
<C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string	The rule name.

	{length = 1..64} {pattern = [ --]*}	
C	uint8 [0..2]  default '0'	The number of tags to pop (or translate if used in conjunction with push-tags).

interfaces interface <A> inline-frame-processing ingress-rule rule <B> ingress-rewrite push-tag <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

B	string {length = 1..64} {pattern = [ --]*}	The rule name.
C	uint8 [0..1]	The index into the tag stack.

interfaces interface <A> ipif-lower-layer

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

interfaces interface <A> ipif-lower-layer sub-interface <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /if:interfaces/if:interface/if:name	References the lower layer interface

interfaces interface <A> ipv4

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

	<pre>{length = 1..100} {pattern = [!#&amp;-Z\^_-z ~]*}</pre>	<p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
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interfaces interface <A> ipv4 address <B> netmask <C>

**Input Parameters:**

Parameter	Type	Description
A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z\^_-z ~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {pattern = [0-9\\.]*}	The IPv4 address on the interface.
C	string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5]))}	The subnet specified as a netmask.

interfaces interface <A> ipv4 address <B> prefix-length <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not</p>

		<p>present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	string {pattern = [0-9\\.]*}	The IPv4 address on the interface.
C	uint8 [0..32]	The length of the subnet prefix.

interfaces interface <A> ipv4 enabled <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name</p>

		<p>refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	boolean  default 'true'	Controls whether IPv4 is enabled or disabled on this interface. When IPv4 is enabled, this interface is connected to an IPv4 stack, and the interface can send and receive IPv4 packets.

interfaces interface <A> ipv6

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p>

		<p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
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interfaces interface <A> ipv6 address <B> prefix-length <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p>

		When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.
B	string {pattern = [0-9a-fA-F:\.]*}	The IPv6 address on the interface.
C	uint8 [0..128]	The length of the subnet prefix.

interfaces interface <A> ipv6 enabled <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>

B	boolean  default 'true'	Controls whether IPv6 is enabled or disabled on this interface. When IPv6 is enabled, this interface is connected to an IPv6 stack, and the interface can send and receive IPv6 packets.
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interfaces interface <A> l2-termination egress-rewrite push-tag <B> tag-type <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.
C	union	VLAN tag type.

	identityref One of: c-vlan   s-vlan  uint16  string {pattern = 0x[A-Fa-f0-9]{4}}	
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interfaces interface <A> l2-termination egress-rewrite push-tag <B> vlan-id <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

B	uint8 [0..1]	The index into the tag stack.
C	union uint16 [0..4094]	The VLAN ID or the value 0 (priority-tagged).

interfaces interface <A> l2-termination egress-rewrite push-tag <B> pbit <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..1]	The index into the tag stack.

C	uint8 [0..7]  default '0'	Specified p-bit value to write into the tag.
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interfaces interface <A> l2-termination ingress-rewrite pop-tags <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint8 [0..2]	The number of tags to remove before the frame is sent to a higher layer interface.

	default '0'	
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interfaces interface <A> link-up-down-trap-enable <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	enumeration One of: enabled   disabled	<p>Controls whether linkUp/linkDown SNMP notifications should be generated for this interface.</p> <p>If this node is not configured, the value 'enabled' is operationally used by the server for interfaces that do not operate on top of</p>

	any other interface (i.e., there are no 'lower-layer-if' entries), and 'disabled' otherwise.
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interfaces interface <A> mac-learning max-number-mac-addresses <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	uint32  default '4294967295'	The maximum number of MAC addresses that can be stored in the forwarding database for this interface.

interfaces interface <A> performance enable <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	boolean  default 'false'	<p>If true, enables performance counters on this interface.</p> <p>The performance counters will be available under '/if:interfaces-state/if:interface/bbf-if-pm:performance/' for 15 minute and, if supported, 24 hour current and historic intervals.</p> <p>If false, then there are no performance counters available on this interface.</p>

interfaces interface <A> port-layer-if <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /hw:hardware/hw:component/hw:name	A list of references to the physical port components corresponding to this interface.

interfaces interface <A> speed-monitoring

**Input Parameters:**

Parameter	Type	Description
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A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z\^_-z ~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
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interfaces interface <A> speed-monitoring enable <B>

**Input Parameters:**

Parameter	Type	Description
A	<pre>string {length = 1..100} {pattern = [!#&amp;-Z\^_-z ~]*}</pre>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p>

		<p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	boolean  default 'false'	<p>If true, enables speed monitoring for the interface for the supported periods. Supported periods are determined from the configuration in the container 'interface-speed-monitoring'. If false then no speed monitoring of the interface is performed.</p>

interfaces interface <A> statistics enable <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not</p>

		<p>present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	<p>enumeration</p> <p>One of: best-effort   false   all-available</p> <p>default 'best-effort'</p>	<p>Affects the collection of statistics and making them available through /interfaces-state/interface/statistics.</p>

interfaces interface <A> tag-ip-intf

**Input Parameters:**

Parameter	Type	Description
A	<p>string</p> <p>{length = 1..100}</p> <p>{pattern = [!#&amp;-Z\^_-z ~]*}</p>	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-</p>

		<p>provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
--	--	--

interfaces interface <A> tag-ip-intf tag-ip-intf <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p>

		<p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>
B	bits	This IP interface can't be tagged for any specific functionality if the leaf is empty

interfaces interface <A> tm-root queue <B> bac-name <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated</p>

		with the same name in the /interface-state/interface list.
B	uint32 [0..7]	The identification of a queue within the context of this list.
C	leafref : /bbf-qos-tm:tm-profiles/bbf-qos-tm:bac-entry/bbf-qos-tm:name	The name of a referenced BAC entry.

interfaces interface <A> tm-root queue <B> priority <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>

B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8 [0..7]	The priority used to schedule frames from a queue or scheduler, relative to the priority assigned to other queues or schedulers that are defined in the same traffic scheduling context. For example the set of queues defined for a particular interface form the context for scheduling outgoing traffic to this interface.

interfaces interface <A> tm-root queue <B> shaper-name <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated</p>

		with the same name in the /interface-state/ interface list.
B	uint32 [0..7]	The identification of a queue within the context of this list.
C	leafref : /bbf-qos-tm:tm-profiles/bbf-qos-shap:shaper-profile/bbf-qos-shap:name	An absolute reference to a shaper profile.

interfaces interface <A> tm-root queue <B> weight <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>

B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8	Queues or schedulers that are defined in a particular context, e.g. queues defined to schedule outgoing traffic to an interface, can have the same priority. The weight defines the portion of traffic that will be taken from this queue or scheduler by comparing the weight of this queue or scheduler against the sum of the weights of all queues or schedulers with the same scope and the same priority.

interfaces interface <A> tm-root queue-monitoring enable-performance <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p>

		When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.
B	boolean  default 'false'	If true, enables counting of queue performance. Then performance counters will be available in /interfaces-state/ interface/bbf-qos-mon:tm-root. i.e. 15 minutes and 24 hours counters, and for both there are current counters and history counters. If false then there are no queue performance counters.

interfaces interface <A> tm-root queue-monitoring enable-statistics <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_-z~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p>

		When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.
B	boolean  default 'false'	If true, enables counting of queue statistics. Then queue statistics will be available in / interfaces-state/interface/bbf-qos-mon:tm-root. If false then there are no queue statistics.

interfaces interface <A> tm-root shaper-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/ interface list.</p>

B	leafref : /bbf-qos-tm:tm-profiles/bbf-qos-shap:shaper-profile/bbf-qos-shap:name	An absolute reference to a shaper profile.
---	--	--

interfaces interface <A> tm-root tc-id-2-queue-id-mapping-profile-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /bbf-qos-tm:tm-profiles/bbf-qos-tm:tc-id-2-queue-id-mapping-profile/bbf-qos-tm:name	The name of a referenced traffic-class-id to queue-id mapping profile.

interfaces interface <A> vector-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	<p>The name of the interface.</p> <p>A device MAY restrict the allowed values for this leaf, possibly depending on the type of the interface. For system-controlled interfaces, this leaf is the device-specific name of the interface. The 'config false' list /interfaces-state/interface contains the currently existing interfaces on the device.</p> <p>If a client tries to create configuration for a system-controlled interface that is not present in the /interfaces-state/interface list, the server MAY reject the request if the implementation does not support pre-provisioning of interfaces or if the name refers to an interface that can never exist in the system. A NETCONF server MUST reply with an rpc-error with the error-tag 'invalid-value' in this case.</p> <p>If the device supports pre-provisioning of interface configuration, the 'pre-provisioning' feature is advertised.</p> <p>If the device allows arbitrarily named user-controlled interfaces, the 'arbitrary-names' feature is advertised.</p> <p>When a configured user-controlled interface is created by the system, it is instantiated with the same name in the /interface-state/interface list.</p>
B	leafref : /bbf-vsi-vctr:vsi-vector-profiles/bbf-vsi-vctr:vsi-vector-profile/bbf-vsi-vctr:name	<p>A reference to a vector profile that contains VLAN sub-interface data.</p> <p>Note that from YANG model perspective the same data that can be found through the referenced vector profile can be directly configured in a VLAN sub-interface, using data nodes defined in other modules, or can be provided indirectly using a the referenced profile. Note that the YANG definition also allows the direct and indirect data nodes to coexist. In that case the direct configuration (within the VLAN sub-interface itself) always</p>

		has priority on the indirect configuration through the data nodes in the referenced vector profile.
--	--	---

## 2.16 ipfix commands

### 2.16.1 Command Tree

```

|-- ipfix cache <A>
|  |-- critical-content <B>
|  |-- exportingProcess <B>
|  |-- hardware-class <B>
|  |-- interface-type <B>
|  |-- permanentCache cacheLayout cacheField <B>
|     |-- ieEnterpriseNumber <C>
|     |-- ieName <C>
|     |-- permanentCache exportInterval <B>
|     |-- permanentCache on-change (Presence)
|        |-- heartbeat-interval <B>
|     |-- reporting-enable <B>
|     |-- resource <B>
|-- ipfix exportingProcess <A>
|  |-- destination <B>
|     |-- tcpExporter destinationIPAddress <C> (Mandatory)
|     |-- priority <C>
|     |-- tcpExporter certificate (Presence)
|        |-- client-identity certificate central-keystore-reference asymmetric-key <C>
|        |-- client-identity certificate central-keystore-reference certificate <C>
|        |-- client-identity certificate est-certificate-profile-reference est-certificate-profile <C>
|        |-- client-identity certificate local-definition (Presence)
|           |-- cert <C>
|        |-- hello-params cipher-suites cipher-suite <C>
|        |-- hello-params tls-versions tls-version <C>
|        |-- server-auth est-certificate-profile <C>
|        |-- server-auth pinned-ca-certs <C>
|     |-- tcpExporter destinationPort <C>
|     |-- tcpExporter fqdn <C>
|     |-- tcpExporter ipfixVersion <C>
|     |-- tcpExporter password <C>
|     |-- tcpExporter transportLayerSecurity (Presence)
|     |-- tcpExporter username <C>
|  |-- exportMode <B>
|  |-- keepalives (Presence)
|     |-- idle-time <B> (Mandatory)
|     |-- max-probes <B> (Mandatory)
|     |-- probe-interval <B> (Mandatory)
|  |-- re-transmission-timeout <B>
|-- ipfix ipfix-exporting-enable <A>
|-- ipfix on-change-audit-interval <A>
|-- ipfix randomize-data-collection <A>

```

### 2.16.2 Commands

ipfix cache <A> critical-content <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	boolean  default 'false'	Indicates that the cache's data should not be discarded when the connection is lost (they will remain in memory and sent to the collector when connectivity is restored)

ipfix cache <A> exportingProcess <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	leafref : /ipfix/exportingProcess/name	Records are exported by all Exporting Processes in the list.

ipfix cache <A> hardware-class <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	identityref One of: acu   alarm-port-input-scan-point   alarm-port-output-scan-point   backplane   backplane-port   battery   bits-port   board   cage   cage-uni   chassis   container   cpu   dac-port   energy-object   external-alarm-port   fan   fan-pack   fastdsl-coax   fastdsl-tp   gnss-port   lt   moca   module   nt   ntio	Hardware class of the data to be exported.

	port   power-supply   psu   rf-video   rj11   rj45   rj45-10-100M   rj45-100M   rj45-10G   rj45-10M   rj45-1G   rj45-2.5G   rj45-25G   rj45-40G   rj45-5G   sensor   slot   slot-acu   slot-fan   slot-lt   slot-lt-ntio   slot-nt   slot-ntio   slot-psu   stack   storage-drive   transceiver   transceiver-link   transceiver-link-gpon   transceiver-link-hspon   transceiver-link-ngpon   transceiver-link-twentyfivespon   transceiver-link-xgpon   unknown   virtual-port	
--	--	--

ipfix cache <A> interface-type <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	union identityref One of: ani   bbfx-interface-type   bbfx-xpon-interface-type   bits   channel-group   channel-pair   channel-partition   channel-termination   channel-v-enet   channelized-ethernetCsmacd   channelized-ethernetCsmacd   ethernet-like   ethernetCsmacd   fastdsl   g9981   g9982   g9983   gfast   gnss   iana-interface-type   ieee8023adLag   ipForward   l2-termination   l2vlan   olt-v-enet   olt-v-enet   onu-v-enet   onu-v-enet   onu-v-vrefpoint   onu-v-vrefpoint   propVirtual   ptm   sub-interface   v-ani   vlan-sub-interface   vlan-sub-interface   voiceFXS	Interface types of the data to be exported.

ipfix cache <A> permanentCache cacheLayout cacheField <B> ieEnterpriseNumber <C>

**Input Parameters:**

Parameter	Type	Description
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A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	uint32  default '3729'	If this parameter is zero, the Information Element is registered in the IANA registry of IPFIX Information Elements. If this parameter is configured with a non-zero private enterprise number, the Information Element is enterprise-specific. If the enterprise number is set to 29305, this field contains a Reverse Information Element. In this case, the Cache MUST generate Data Records in accordance to RFC 5103.

ipfix cache <A> permanentCache cacheLayout cacheField <B> ieName <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	string {length = 1..max} {pattern = \S+}	Name of the Information Element.

ipfix cache <A> permanentCache exportInterval <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	uint32	When: local-name(..) = 'permanentCache'

	[1..86400]  default '900'	Unit: seconds  This parameter configures the interval (in seconds) for periodical export of Flow Records. If not configured by the user, the Monitoring Device sets this parameter.
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ipfix cache <A> permanentCache on-change

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.

ipfix cache <A> permanentCache on-change heartbeat-interval <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	uint32 [0   3600..86400]  default '0'	Unit: seconds  This parameter configures the interval (in seconds) for periodical export of caches that will also export the data on-change.

ipfix cache <A> reporting-enable <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.

B	boolean  default 'false'	If present, this template will be exported in normal mode reporting.
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ipfix cache <A> resource <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	instance-identifier	Resources/instances of the data to be exported.

ipfix exportingProcess <A> destination <B> tcpExporter destinationIPAddress <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
C	union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string	IP address of the Collection Process to which IPFIX Messages are sent.

ipfix exportingProcess <A> destination <B> priority <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	uint8 [1..255]	Used to set priority to each collector. Value 1 means highest priority and 255 means lowest priority.

ipfix exportingProcess <A> destination <B> tcpExporter certificate

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.

ipfix exportingProcess <A> destination <B> tcpExporter certificate client-identity certificate  
central-keystore-reference asymmetric-key <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.

ipfix exportingProcess <A> destination <B> tcpExporter certificate client-identity certificate  
central-keystore-reference certificate <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()../ asymmetric-key]/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

ipfix exportingProcess <A> destination <B> tcpExporter certificate client-identity certificate est-  
certificate-profile-reference est-certificate-profile <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

ipfix exportingProcess <A> destination <B> tcpExporter certificate client-identity certificate  
local-definition

**Input Parameters:**

Parameter	Type	Description
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A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.

ipfix exportingProcess <A> destination <B> tcpExporter certificate client-identity certificate  
local-definition cert <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	binary	The binary certificate data for this certificate.

ipfix exportingProcess <A> destination <B> tcpExporter certificate hello-params cipher-suites  
cipher-suite <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with- des40-cbc-sha   tls-dh-anon-export-with-	Acceptable cipher suites in order of descending preference. The configured host key algorithms should be compatible with the algorithm used by the configured private key. Please see Section 5 of RFC FFFF for valid combinations.

rc4-40-md5 | tls-dh-anon-with-3des-edc-cbc-sha | tls-dh-anon-with-aes-128-cbc-sha | tls-dh-anon-with-aes-128-cbc-sha256 | tls-dh-anon-with-aes-128-gcm-sha256 | tls-dh-anon-with-aes-256-cbc-sha | tls-dh-anon-with-aes-256-cbc-sha256 | tls-dh-anon-with-aes-256-gcm-sha384 | tls-dh-anon-with-aria-128-cbc-sha256 | tls-dh-anon-with-aria-128-gcm-sha256 | tls-dh-anon-with-aria-256-cbc-sha384 | tls-dh-anon-with-aria-256-gcm-sha384 | tls-dh-anon-with-camellia-128-cbc-sha | tls-dh-anon-with-camellia-128-cbc-sha256 | tls-dh-anon-with-camellia-128-gcm-sha256 | tls-dh-anon-with-camellia-256-cbc-sha | tls-dh-anon-with-camellia-256-cbc-sha256 | tls-dh-anon-with-camellia-256-gcm-sha384 | tls-dh-anon-with-des-cbc-sha | tls-dh-anon-with-rc4-128-md5 | tls-dh-anon-with-seed-cbc-sha | tls-dh-dss-export-with-des40-cbc-sha | tls-dh-dss-with-3des-edc-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha256 | tls-dh-dss-with-aes-128-gcm-sha256 | tls-dh-dss-with-aes-256-cbc-sha | tls-dh-dss-with-aes-256-cbc-sha256 | tls-dh-dss-with-aes-256-gcm-sha384 | tls-dh-dss-with-aria-128-cbc-sha256 | tls-dh-dss-with-aria-128-gcm-sha256 | tls-dh-dss-with-aria-256-cbc-sha384 | tls-dh-dss-with-aria-256-gcm-sha384 | tls-dh-dss-with-camellia-128-cbc-sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-with-3des-edc-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 |

If this leaf-list is not configured (has zero elements) the acceptable cipher suites are implementation- defined.

camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-ede-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-

gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-

with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-ccm | tls-ecdh-rsa-with-aes-128-ccm-8 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-ccm | tls-ecdh-rsa-with-aes-256-ccm-8 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-chacha20-poly1305-sha256 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-ccm-8-sha256 | tls-ecdh-rsa-with-aes-128-ccm-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-

with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-chacha20-poly1305-sha256 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-empty-renegotiation-info-scsv | tls-fallback-scsv | tls-gostr341112-256-with-28147-cnt-imit | tls-gostr341112-256-with-kuznyechik-ctr-omac | tls-gostr341112-256-with-magma-ctr-omac | tls-krb5-export-with-des-cbc-40-md5 | tls-krb5-export-with-des-cbc-40-sha | tls-krb5-export-with-rc2-cbc-40-md5 | tls-krb5-export-with-rc2-cbc-40-sha | tls-krb5-export-with-rc4-40-md5 | tls-krb5-export-with-rc4-40-sha | tls-krb5-with-3des-edc-cbc-md5 | tls-krb5-with-3des-edc-cbc-sha | tls-krb5-with-des-cbc-md5 | tls-krb5-with-des-cbc-sha | tls-krb5-with-idea-cbc-md5 | tls-krb5-with-idea-cbc-sha | tls-krb5-with-rc4-128-md5 | tls-krb5-with-rc4-128-sha | tls-null-with-null-null | tls-psk-dhe-with-aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-edc-cbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-aes-128-cbc-sha256 | tls-psk-with-aes-128-ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-with-aes-128-gcm-sha256 | tls-psk-with-aes-256-cbc-sha | tls-psk-with-aes-256-cbc-sha384 | tls-psk-with-aes-256-ccm | tls-psk-with-aes-256-ccm-8 | tls-psk-with-aes-256-gcm-sha384 | tls-psk-with-aria-128-cbc-sha256 | tls-psk-with-aria-128-gcm-sha256 | tls-psk-with-aria-256-cbc-sha384 | tls-psk-with-aria-256-gcm-sha384 | tls-psk-with-camellia-128-cbc-sha256 | tls-psk-with-camellia-128-gcm-sha256 | tls-psk-with-camellia-256-cbc-sha384 | tls-psk-with-camellia-256-gcm-sha384 | tls-psk-with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha | tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-edc-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha | tls-rsa-psk-with-aes-256-cbc-sha384 | tls-

rsa-psk-with-aes-256-gcm-sha384   tls-rsa-psk-with-aria-128-cbc-sha256   tls-rsa-psk-with-aria-128-gcm-sha256   tls-rsa-psk-with-aria-256-cbc-sha384   tls-rsa-psk-with-aria-256-gcm-sha384   tls-rsa-psk-with-camellia-128-cbc-sha256   tls-rsa-psk-with-camellia-128-gcm-sha256   tls-rsa-psk-with-camellia-256-cbc-sha384   tls-rsa-psk-with-camellia-256-gcm-sha384   tls-rsa-psk-with-chacha20-poly1305-sha256   tls-rsa-psk-with-null-sha   tls-rsa-psk-with-null-sha256   tls-rsa-psk-with-null-sha384   tls-rsa-psk-with-rc4-128-sha   tls-rsa-with-3des-edecbc-sha   tls-rsa-with-aes-128-cbc-sha   tls-rsa-with-aes-128-cbc-sha256   tls-rsa-with-aes-128-ccm   tls-rsa-with-aes-128-ccm-8   tls-rsa-with-aes-128-gcm-sha256   tls-rsa-with-aes-256-cbc-sha   tls-rsa-with-aes-256-cbc-sha256   tls-rsa-with-aes-256-ccm   tls-rsa-with-aes-256-ccm-8   tls-rsa-with-aes-256-gcm-sha384   tls-rsa-with-aria-128-cbc-sha256   tls-rsa-with-aria-128-gcm-sha256   tls-rsa-with-aria-256-cbc-sha384   tls-rsa-with-aria-256-gcm-sha384   tls-rsa-with-camellia-128-cbc-sha   tls-rsa-with-camellia-128-cbc-sha256   tls-rsa-with-camellia-128-gcm-sha256   tls-rsa-with-camellia-256-cbc-sha   tls-rsa-with-camellia-256-cbc-sha256   tls-rsa-with-camellia-256-gcm-sha384   tls-rsa-with-des-cbc-sha   tls-rsa-with-idea-cbc-sha   tls-rsa-with-null-md5   tls-rsa-with-null-sha   tls-rsa-with-null-sha256   tls-rsa-with-rc4-128-md5   tls-rsa-with-rc4-128-sha   tls-rsa-with-seed-cbc-sha   tls-sha256-sha256   tls-sha384-sha384   tls-sm4-ccm-sm3   tls-sm4-gcm-sm3   tls-srp-sha-dss-with-3des-edecbc-sha   tls-srp-sha-dss-with-aes-128-cbc-sha   tls-srp-sha-dss-with-aes-256-cbc-sha   tls-srp-sha-rsa-with-3des-edecbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-edecbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha
--

ipfix exportingProcess <A> destination <B> tcpExporter certificate hello-params tls-versions tls-version <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	identityref One of: tls12   tls13	Acceptable TLS protocol versions.  If this leaf-list is not configured (has zero elements) the acceptable TLS protocol versions are implementation- defined.

ipfix exportingProcess <A> destination <B> tcpExporter certificate server-auth est-certificate-profile <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules

ipfix exportingProcess <A> destination <B> tcpExporter certificate server-auth pinned-ca-certs <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.

ipfix exportingProcess <A> destination <B> tcpExporter destinationPort <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
C	uint16 [0..65535]  default '4739'	If not configured by the user, the Monitoring Device uses the default port number for IPFIX, which is 4739 without TLS or DTLS and 4740 if TLS or DTLS is activated.

ipfix exportingProcess <A> destination <B> tcpExporter fqdn <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string	Key of this list.

	{length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	
C	string {length = 1..253} {pattern = ((([a-zA-Z0-9_]([a-zA-Z0-9\_-]) {0,61})?[a-zA-Z0-9]\.)*([a-zA-Z0-9_]([a-zA-Z0-9\_-]) {0,61})?[a-zA-Z0-9]\.?)\ .}	FQDN of the Collection Process to which IPFIX Messages are sent (A resolution will first take place to get the resolved IPs).

ipfix exportingProcess <A> destination <B> tcpExporter ipfixVersion <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	uint16  default '10'	IPFIX version number.

ipfix exportingProcess <A> destination <B> tcpExporter password <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
C	string {pattern = \$0\$.*\$1\$[a-zA-Z0-9./]{1,8}\$[a-zA-Z0-9./]{22}\$5\$(rounds=\d+\$)?[a-zA-Z0-9./]{1,16}\$[a-zA-Z0-9./]{43}\$6\$(rounds=\d+\$)?[a-zA-Z0-9./]{1,16}\$[a-zA-Z0-9./]{86}}	Password to be sent in the first template while communicating with the collector. This is used by the collector to validate the exporter. If password received by the collector does not match the expected value, collector will terminate the session

		with the exporter. SHA-512 hashing algorithm will be used for encryption.
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ipfix exportingProcess <A> destination <B> tcpExporter transportLayerSecurity

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.

ipfix exportingProcess <A> destination <B> tcpExporter username <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
C	string {length = 5..16}	Username to be sent in the first template while communicating with the collector. This is used by the collector to validate the exporter. If username received by the collector does not match the expected value, collector will terminate the session with the exporter.

ipfix exportingProcess <A> exportMode <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	identityref One of: fallback   loadBalancing   parallel  default 'ipfix:fallback'	This parameter determines to which configured destination(s) the incoming Data Records are exported.

ipfix exportingProcess <A> keepalives

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.

ipfix exportingProcess <A> keepalives idle-time <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	uint16 [1..max]	Unit: seconds  Sets the amount of time after which if no data has been received from the TCP peer, a TCP-level probe message will be sent to test the aliveness of the TCP peer. Two hours (7200 seconds) is safe value, per RFC 1122.

ipfix exportingProcess <A> keepalives max-probes <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	uint16 [1..max]	Sets the maximum number of sequential keep-alive probes that can fail to obtain a response from the TCP peer before assuming the TCP peer is no longer alive.

ipfix exportingProcess <A> keepalives probe-interval <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	uint16 [1..max]	Unit: seconds  Sets the time interval between failed probes. The interval SHOULD be significantly longer than one second in order to avoid harm on a congested link.

ipfix exportingProcess <A> re-transmission-timeout <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Key of this list.
B	uint16  default '60'	Unit: seconds  Maximum time before deciding to switch to another collector in the list. This parameter is only applicable for fallback mode.

ipfix ipfix-exporting-enable <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Used to start/stop the IPFIX exporting.

ipfix on-change-audit-interval <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [0..86400]  default '3600'	Unit: seconds  Interval at which the on-change caches should be audited when no on-change data is exported in the interval (wall-clock aligned). An audit message will be exported to the collector at the end of the audit interval (after a random offset) when no on-change data is exported in the interval. In the audit message, only the record-type & the cache-sequence-number will be filled. All the other fields will be set to default/dummy values. This audit message can be used by the collector to validate the cache-sequence-number & trigger a full sync of data for the cache that is configured on-change if required. Value 0 can be used to disable the export of audit messages.

ipfix randomize-data-collection <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	Used to randomize the data collection & the subsequent export of all enabled non-PM caches. If set to true, the data collection

	default 'false'	& the subsequent export will be offset by a random seed over the wall-clock expiry. If set to false, the data collection & the subsequent export of all enabled caches will be aligned to wall-clock.
--	-----------------	---

## 2.17 keystore commands

### 2.17.1 Command Tree

```
|-- keystore asymmetric-keys asymmetric-key <A>
    |-- certificates certificate <B>
```

### 2.17.2 Commands

keystore asymmetric-keys asymmetric-key <A> certificates certificate <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [-a-zA-Z0-9_.*]}	An arbitrary name for the asymmetric key. If the name matches the name of a key that exists independently in <operational> (i.e., a 'permanently-hidden' key), then the 'algorithm', 'public-key', and 'private-key' nodes MUST NOT be configured.
B	string	An arbitrary name for the certificate. If the name matches the name of a certificate that exists independently in <operational> (i.e., an IDevID), then the 'cert' node MUST NOT be configured.

## 2.18 lag-system commands

### 2.18.1 Command Tree

```
|-- lag-system aggregating-system <A>
|   |-- system-id <B>
|   |-- system-priority <B>
```

### 2.18.2 Commands

lag-system aggregating-system <A> system-id <B>

#### Input Parameters:

Parameter	Type	Description
A	string	The index of the aggregating system.
B	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	The unique identifier for the aggregating system.

lag-system aggregating-system <A> system-priority <B>

#### Input Parameters:

Parameter	Type	Description
A	string	The index of the aggregating system.
B	uint32	The priority of the aggregating system.

## 2.19 licensing commands

### 2.19.1 Command Tree

```

|-- licensing cde-features license-key <A>
|  |-- content <B> (Mandatory)
|-- licensing certificate (Presence)
|  |-- client-identity certificate central-keystore-reference asymmetric-key <A>
|  |-- client-identity certificate central-keystore-reference certificate <A>
|  |-- client-identity certificate est-certificate-profile-reference est-certificate-profile <A>
|  |-- client-identity certificate local-definition (Presence)
|     |-- cert <A>
|  |-- hello-params cipher-suites cipher-suite <A>
|  |-- hello-params tls-versions tls-version <A>
|  |-- server-auth est-certificate-profile <A>
|  |-- server-auth pinned-ca-certs <A>
|-- licensing server address <A>
|-- licensing server port <A>

```

### 2.19.2 Commands

licensing cde-features license-key <A> content <B>

#### Input Parameters:

Parameter	Type	Description
A	string	The name of the CDE License Key. This is the name of the License Key file or any unique name.
B	string	The content of the CDE License Key file, which is a signed XML document. This content is provided as a raw string.

licensing certificate

licensing certificate client-identity certificate central-keystore-reference asymmetric-key <A>

#### Input Parameters:

Parameter	Type	Description
A	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.

licensing certificate client-identity certificate central-keystore-reference certificate <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()]/../ asymmetric-key/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

licensing certificate client-identity certificate est-certificate-profile-reference est-certificate-profile  
<A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

licensing certificate client-identity certificate local-definition

licensing certificate client-identity certificate local-definition cert <A>

**Input Parameters:**

Parameter	Type	Description
A	binary	The binary certificate data for this certificate.

licensing certificate hello-params cipher-suites cipher-suite <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-edc-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-anon-with-aria-128-gcm-sha256   tls-dh-anon-with-aria-256-cbc-sha384   tls-dh-anon-with-aria-256-gcm-sha384   tls-dh-anon-with-camellia-128-cbc-sha   tls-dh-anon-with-camellia-128-cbc-sha256   tls-dh-anon-with-camellia-128-gcm-sha256   tls-dh-anon-with-camellia-256-cbc-sha   tls-dh-anon-with-camellia-256-cbc-sha256   tls-dh-anon-with-camellia-256-gcm-sha384   tls-dh-anon-with-des-cbc-sha   tls-dh-anon-with-rc4-128-md5   tls-dh-anon-with-seed-cbc-sha   tls-dh-dss-export-with-des40-cbc-sha   tls-dh-dss-with-3des-edc-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha256   tls-dh-dss-with-aes-128-gcm-sha256   tls-dh-dss-with-aes-256-cbc-sha   tls-dh-dss-with-aes-256-gcm-sha384   tls-dh-dss-with-aria-128-cbc-sha256   tls-dh-dss-with-aria-128-gcm-sha256   tls-dh-dss-with-aria-256-cbc-sha384   tls-dh-dss-with-aria-256-gcm-sha384   tls-dh-dss-with-camellia-128-cbc-sha   tls-dh-dss-with-camellia-128-cbc-sha256   tls-dh-dss-with-camellia-128-gcm-sha256   tls-dh-dss-with-camellia-256-cbc-sha   tls-dh-dss-with-camellia-256-gcm-sha384   tls-dh-dss-with-des-cbc-sha   tls-dh-dss-with-seed-cbc-sha   tls-dh-rsa-export-with-des40-cbc-sha   tls-dh-rsa-	<p>Acceptable cipher suites in order of descending preference. The configured host key algorithms should be compatible with the algorithm used by the configured private key. Please see Section 5 of RFC FFFF for valid combinations.</p> <p>If this leaf-list is not configured (has zero elements) the acceptable cipher suites are implementation- defined.</p>

with-3des-ede-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-ede-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-

poly1305-sha256 | tls-dhe-psk-with-null-sha  
| tls-dhe-psk-with-null-sha256 | tls-dhe-psk-  
with-null-sha384 | tls-dhe-psk-with-rc4-128-  
sha | tls-dhe-rsa-export-with-des40-cbc-sha  
| tls-dhe-rsa-with-3des-edc-cbc-sha | tls-  
dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-  
with-aes-128-cbc-sha256 | tls-dhe-rsa-with-  
aes-128-ccm | tls-dhe-rsa-with-aes-128-  
ccm-8 | tls-dhe-rsa-with-aes-128-gcm-  
sha256 | tls-dhe-rsa-with-aes-256-cbc-sha  
| tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-  
dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-  
aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-  
gcm-sha384 | tls-dhe-rsa-with-aria-128-  
cbc-sha256 | tls-dhe-rsa-with-aria-128-  
gcm-sha256 | tls-dhe-rsa-with-aria-256-  
cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-  
sha384 | tls-dhe-rsa-with-camellia-128-cbc-  
sha | tls-dhe-rsa-with-camellia-128-cbc-  
sha256 | tls-dhe-rsa-with-camellia-128-gcm-  
sha256 | tls-dhe-rsa-with-camellia-256-cbc-  
sha | tls-dhe-rsa-with-camellia-256-cbc-  
sha256 | tls-dhe-rsa-with-camellia-256-  
gcm-sha384 | tls-dhe-rsa-with-chacha20-  
poly1305-sha256 | tls-dhe-rsa-with-des-  
cbc-sha | tls-dhe-rsa-with-seed-cbc-sha |  
tls-eccpwd-with-aes-128-ccm-sha256 | tls-  
eccpwd-with-aes-128-gcm-sha256 | tls-  
eccpwd-with-aes-256-ccm-sha384 | tls-  
eccpwd-with-aes-256-gcm-sha384 | tls-  
ecdh-anon-with-3des-edc-cbc-sha | tls-  
ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-  
anon-with-aes-256-cbc-sha | tls-ecdh-anon-  
with-null-sha | tls-ecdh-anon-with-rc4-128-  
sha | tls-ecdh-ecdsa-with-3des-edc-cbc-sha  
| tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-  
ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-  
ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-  
ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-  
ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-  
ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-  
ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-  
ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-  
ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-  
ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-  
ecdsa-with-camellia-128-cbc-sha256 | tls-  
ecdh-ecdsa-with-camellia-128-gcm-sha256  
| tls-ecdh-ecdsa-with-camellia-256-cbc-  
sha384 | tls-ecdh-ecdsa-with-camellia-256-  
gcm-sha384 | tls-ecdh-ecdsa-with-null-  
sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-  
ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-

```

rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-
with-aes-128-cbc-sha256 | tls-ecdh-rsa-
with-aes-128-gcm-sha256 | tls-ecdh-rsa-
with-aes-256-cbc-sha | tls-ecdh-rsa-with-
aes-256-cbc-sha384 | tls-ecdh-rsa-with-
aes-256-gcm-sha384 | tls-ecdh-rsa-with-
aria-128-cbc-sha256 | tls-ecdh-rsa-with-
aria-128-gcm-sha256 | tls-ecdh-rsa-with-
aria-256-cbc-sha384 | tls-ecdh-rsa-with-
aria-256-gcm-sha384 | tls-ecdh-rsa-with-
camellia-128-cbc-sha256 | tls-ecdh-rsa-with-
camellia-128-gcm-sha256 | tls-ecdh-rsa-
with-camellia-256-cbc-sha384 | tls-ecdh-rsa-
with-camellia-256-gcm-sha384 | tls-ecdh-
rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-
sha | tls-ecdhe-ecdsa-with-3des-edc-cbc-
sha | tls-ecdhe-ecdsa-with-aes-128-cbc-
sha | tls-ecdhe-ecdsa-with-aes-128-cbc-
sha256 | tls-ecdhe-ecdsa-with-aes-128-ccm
| tls-ecdhe-ecdsa-with-aes-128-ccm-8 | tls-
ecdhe-ecdsa-with-aes-128-gcm-sha256
| tls-ecdhe-ecdsa-with-aes-256-cbc-sha |
tls-ecdhe-ecdsa-with-aes-256-cbc-sha384
| tls-ecdhe-ecdsa-with-aes-256-ccm | tls-
ecdhe-ecdsa-with-aes-256-ccm-8 | tls-
ecdhe-ecdsa-with-aes-256-gcm-sha384 |
tls-ecdhe-ecdsa-with-aria-128-cbc-sha256 |
tls-ecdhe-ecdsa-with-aria-128-gcm-sha256 |
tls-ecdhe-ecdsa-with-aria-256-cbc-sha384 |
tls-ecdhe-ecdsa-with-aria-256-gcm-sha384
| tls-ecdhe-ecdsa-with-camellia-128-cbc-
sha256 | tls-ecdhe-ecdsa-with-camellia-128-
gcm-sha256 | tls-ecdhe-ecdsa-with-
camellia-256-cbc-sha384 | tls-ecdhe-ecdsa-
with-camellia-256-gcm-sha384 | tls-ecdhe-
ecdsa-with-chacha20-poly1305-sha256 |
tls-ecdhe-ecdsa-with-null-sha | tls-ecdhe-
ecdsa-with-rc4-128-sha | tls-ecdhe-psk-
with-3des-edc-cbc-sha | tls-ecdhe-psk-
with-aes-128-cbc-sha | tls-ecdhe-psk-with-
aes-128-cbc-sha256 | tls-ecdhe-psk-with-
aes-128-ccm-8-sha256 | tls-ecdhe-psk-
with-aes-128-ccm-sha256 | tls-ecdhe-psk-
with-aes-128-gcm-sha256 | tls-ecdhe-psk-
with-aes-256-cbc-sha | tls-ecdhe-psk-with-
aes-256-cbc-sha384 | tls-ecdhe-psk-with-
aes-256-gcm-sha384 | tls-ecdhe-psk-with-
aria-128-cbc-sha256 | tls-ecdhe-psk-with-
aria-256-cbc-sha384 | tls-ecdhe-psk-with-
camellia-128-cbc-sha256 | tls-ecdhe-psk-
with-camellia-256-cbc-sha384 | tls-ecdhe-
psk-with-chacha20-poly1305-sha256 | tls-

```

ecdhe-psk-with-null-sha | tls-ecdhe-psk-with-null-sha256 | tls-ecdhe-psk-with-null-sha384 | tls-ecdhe-psk-with-rc4-128-sha | tls-ecdhe-rsa-with-3des-edc-cbc-sha | tls-ecdhe-rsa-with-aes-128-cbc-sha | tls-ecdhe-rsa-with-aes-128-cbc-sha256 | tls-ecdhe-rsa-with-aes-128-gcm-sha256 | tls-ecdhe-rsa-with-aes-256-cbc-sha | tls-ecdhe-rsa-with-aes-256-cbc-sha384 | tls-ecdhe-rsa-with-aes-256-gcm-sha384 | tls-ecdhe-rsa-with-aria-128-cbc-sha256 | tls-ecdhe-rsa-with-aria-128-gcm-sha256 | tls-ecdhe-rsa-with-aria-256-cbc-sha384 | tls-ecdhe-rsa-with-aria-256-gcm-sha384 | tls-ecdhe-rsa-with-camellia-128-cbc-sha256 | tls-ecdhe-rsa-with-camellia-128-gcm-sha256 | tls-ecdhe-rsa-with-camellia-256-cbc-sha384 | tls-ecdhe-rsa-with-camellia-256-gcm-sha384 | tls-ecdhe-rsa-with-chacha20-poly1305-sha256 | tls-ecdhe-rsa-with-null-sha | tls-ecdhe-rsa-with-rc4-128-sha | tls-empty-renegotiation-info-scsv | tls-fallback-scsv | tls-gostr341112-256-with-28147-cnt-imit | tls-gostr341112-256-with-kuznyechik-ctr-omac | tls-gostr341112-256-with-magma-ctr-omac | tls-krb5-export-with-des-cbc-40-md5 | tls-krb5-export-with-des-cbc-40-sha | tls-krb5-export-with-rc2-cbc-40-md5 | tls-krb5-export-with-rc2-cbc-40-sha | tls-krb5-export-with-rc4-40-md5 | tls-krb5-export-with-rc4-40-sha | tls-krb5-with-3des-edc-cbc-md5 | tls-krb5-with-3des-edc-cbc-sha | tls-krb5-with-des-cbc-md5 | tls-krb5-with-des-cbc-sha | tls-krb5-with-idea-cbc-md5 | tls-krb5-with-idea-cbc-sha | tls-krb5-with-rc4-128-md5 | tls-krb5-with-rc4-128-sha | tls-null-with-null-null | tls-psk-dhe-with-aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-edc-cbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-aes-128-cbc-sha256 | tls-psk-with-aes-128-ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-with-aes-128-gcm-sha256 | tls-psk-with-aes-256-cbc-sha | tls-psk-with-aes-256-cbc-sha384 | tls-psk-with-aes-256-ccm | tls-psk-with-aes-256-ccm-8 | tls-psk-with-aes-256-gcm-sha384 | tls-psk-with-aria-128-cbc-sha256 | tls-psk-with-aria-128-gcm-sha256 | tls-psk-with-aria-256-cbc-sha384 | tls-psk-with-aria-256-gcm-sha384 | tls-psk-with-camellia-128-cbc-sha256 | tls-psk-with-camellia-128-gcm-sha256 | tls-

psk-with-camellia-256-cbc-sha384 | tls-psk-with-camellia-256-gcm-sha384 | tls-psk-with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha | tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-ede-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha | tls-rsa-psk-with-aes-256-cbc-sha384 | tls-rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-psk-with-aria-128-cbc-sha256 | tls-rsa-psk-with-aria-128-gcm-sha256 | tls-rsa-psk-with-aria-256-cbc-sha384 | tls-rsa-psk-with-aria-256-gcm-sha384 | tls-rsa-psk-with-camellia-128-cbc-sha256 | tls-rsa-psk-with-camellia-128-gcm-sha256 | tls-rsa-psk-with-camellia-256-cbc-sha384 | tls-rsa-psk-with-camellia-256-gcm-sha384 | tls-rsa-psk-with-chacha20-poly1305-sha256 | tls-rsa-psk-with-null-sha | tls-rsa-psk-with-null-sha256 | tls-rsa-psk-with-null-sha384 | tls-rsa-psk-with-rc4-128-sha | tls-rsa-with-3des-ede-cbc-sha | tls-rsa-with-aes-128-cbc-sha | tls-rsa-with-aes-128-cbc-sha256 | tls-rsa-with-aes-128-ccm | tls-rsa-with-aes-128-ccm-8 | tls-rsa-with-aes-128-gcm-sha256 | tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-aes-256-cbc-sha256 | tls-rsa-with-aes-256-ccm | tls-rsa-with-aes-256-ccm-8 | tls-rsa-with-aes-256-gcm-sha384 | tls-rsa-with-aria-128-cbc-sha256 | tls-rsa-with-aria-128-gcm-sha256 | tls-rsa-with-aria-256-cbc-sha384 | tls-rsa-with-aria-256-gcm-sha384 | tls-rsa-with-camellia-128-cbc-sha | tls-rsa-with-camellia-128-cbc-sha256 | tls-rsa-with-camellia-128-gcm-sha256 | tls-rsa-with-camellia-256-cbc-sha | tls-rsa-with-camellia-256-cbc-sha256 | tls-rsa-with-camellia-256-gcm-sha384 | tls-rsa-with-des-cbc-sha | tls-rsa-with-idea-cbc-sha | tls-rsa-with-null-md5 | tls-rsa-with-null-sha | tls-rsa-with-null-sha256 | tls-rsa-with-rc4-128-md5 | tls-rsa-with-rc4-128-sha | tls-rsa-with-seed-cbc-sha | tls-sha256-sha256 | tls-sha384-sha384 | tls-sm4-ccm-sm3 | tls-sm4-gcm-sm3 | tls-srp-sha-dss-with-3des-ede-cbc-sha | tls-srp-sha-dss-with-aes-128-cbc-sha | tls-srp-sha-dss-with-aes-256-cbc-sha | tls-

	srp-sha-rsa-with-3des-ede-cbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-ede-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha	
--	---	--

licensing certificate hello-params tls-versions tls-version <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: tls12   tls13	Acceptable TLS protocol versions.  If this leaf-list is not configured (has zero elements) the acceptable TLS protocol versions are implementation- defined.

licensing certificate server-auth est-certificate-profile <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules

licensing certificate server-auth pinned-ca-certs <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.

licensing server address <A>

**Input Parameters:**

Parameter	Type	Description
A	union union string {pattern = (([0-9]([1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9]([1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5]) (%[p{N}\p{L}]+)?)}  string  string {length = 1..253}	The IPv4/IPv6 address or FQDN of Central License Server (CSWL).

licensing server port <A>

**Input Parameters:**

Parameter	Type	Description
A	uint16 [0..65535]  default '8443'	This leaf specifies the port of Central License Server. The default value (8443) is the default port for TLS over HTTPs connection.

## 2.20 loggers commands

### 2.20.1 Command Tree

```
|-- loggers enable-logging-for <A>  
    |-- modules <B>  
        |-- level <C> (Mandatory)
```

### 2.20.2 Commands

loggers enable-logging-for <A> modules <B> level <C>

#### Input Parameters:

Parameter	Type	Description
A	string	This leaf provide the application name (sw module ).
B	string	This leaf represent the operator loggers name
C	enumeration One of: none   critical   error   warning   info   debug	This leaf specifies the syslog message severity.

## 2.21 nacm commands

### 2.21.1 Command Tree

```

|-- nacm cmd-exec-default <A>
|-- nacm cmd-read-default <A>
|-- nacm enable-external-groups <A>
|-- nacm enable-nacm <A>
|-- nacm exec-default <A>
|-- nacm groups group <A>
    |-- gid <B>
    |-- user-name <B>
|-- nacm log-if-default-permit
|-- nacm read-default <A>
|-- nacm rule-list <A>
    |-- cmdrule <B>
        |-- action <C> (Mandatory)
        |-- access-operations <C>
        |-- command <C>
        |-- comment <C>
        |-- context <C>
        |-- log-if-permit
    |-- group <B>
    |-- rule <B>
        |-- action <C> (Mandatory)
        |-- path <C> (Mandatory)
        |-- access-operations <C>
        |-- comment <C>
        |-- context <C>
        |-- log-if-permit
        |-- module-name <C>
        |-- notification-name <C>
        |-- rpc-name <C>
|-- nacm write-default <A>

```

### 2.21.2 Commands

`nacm cmd-exec-default <A>`

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: permit   deny	Controls whether command exec access is granted if no appropriate cmdrule is found for a particular command exec request.

	default 'permit'	
--	------------------	--

`nacm cmd-read-default <A>`

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: permit   deny  default 'permit'	Controls whether command read access is granted if no appropriate cmdrule is found for a particular command read request.

`nacm enable-external-groups <A>`

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Controls whether the server uses the groups reported by the NETCONF transport layer when it assigns the user to a set of NACM groups. If this leaf has the value 'false', any group names reported by the transport layer are ignored by the server.

`nacm enable-nacm <A>`

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Enables or disables all NETCONF access control enforcement. If 'true', then enforcement is enabled. If 'false', then enforcement is disabled.

nacm exec-default <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: permit   deny  default 'permit'	Controls whether exec access is granted if no appropriate rule is found for a particular protocol operation request.

nacm groups group <A> gid <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max} {pattern = [^\\*].*}	Group name associated with this entry.
B	int32	This leaf associates a numerical group ID with the group. When a OS command is executed on behalf of a user, supplementary group IDs are assigned based on 'gid' values for the groups that the user is a member of.

nacm groups group <A> user-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max} {pattern = [^\\*].*}	Group name associated with this entry.
B	string {length = 1..64} {pattern = [!#&-Z\\^_~]*}	Each entry identifies the username of a member of the group associated with this entry.

nacm log-if-default-permit

nacm read-default <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: permit   deny  default 'permit'	Controls whether read access is granted if no appropriate rule is found for a particular read request.

nacm rule-list <A> cmdrule <B> action <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	enumeration One of: permit   deny	The access control action associated with the rule. If a rule is determined to match a particular request, then this object is used to determine whether to permit or deny the request.

nacm rule-list <A> cmdrule <B> access-operations <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.

B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	union string {pattern = \*}  bits   default '*'	Access operations associated with this rule.  This leaf matches if it has the value '*' or if the bit corresponding to the requested operation is set.

nacm rule-list <A> cmdrule <B> command <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	string  default '*'	Space-separated tokens representing the command. Refer to the Tail-f AAA documentation for further details.

nacm rule-list <A> cmdrule <B> comment <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	string	A textual description of the access rule.

nacm rule-list <A> cmdrule <B> context <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	union string {pattern = \*}  string   default '*'	This leaf matches if it has the value '*' or if its value identifies the agent that is requesting access, i.e. 'cli' for CLI or 'webui' for Web UI.

nacm rule-list <A> cmdrule <B> log-if-permit

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.

nacm rule-list <A> group <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	union string {pattern = \*}  string	List of administrative groups that will be assigned the associated access rights defined by the 'rule' list.

	{length = 1..max}	The string '*' indicates that all groups apply to the entry.
--	-------------------	--

nacm rule-list <A> rule <B> action <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	enumeration One of: permit   deny	The access control action associated with the rule. If a rule has been determined to match a particular request, then this object is used to determine whether to permit or deny the request.

nacm rule-list <A> rule <B> path <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	string	<p>Data node instance-identifier associated with the data node, action, or notification controlled by this rule.</p> <p>Configuration data or state data instance-identifiers start with a top-level data node. A complete instance-identifier is required for this type of path value.</p> <p>The special value '/' refers to all possible datastore contents.</p>

nacm rule-list <A> rule <B> access-operations <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	union string {pattern = '*'}  bits   default '*'	Access operations associated with this rule.  This leaf matches if it has the value '*' or if the bit corresponding to the requested operation is set.

nacm rule-list <A> rule <B> comment <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	string	A textual description of the access rule.

nacm rule-list <A> rule <B> context <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.

C	union string {pattern = \*}  string   default '*'	This leaf matches if it has the value '*' or if its value identifies the agent that is requesting access, e.g. 'netconf' for NETCONF, 'cli' for CLI, or 'webui' for Web UI.
---	--	---

nacm rule-list <A> rule <B> log-if-permit

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.

nacm rule-list <A> rule <B> module-name <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	union string {pattern = \*}  string   default '*'	Name of the module associated with this rule.  This leaf matches if it has the value '*' or if the object being accessed is defined in the module with the specified module name.

nacm rule-list <A> rule <B> notification-name <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	union string {pattern = \*}  string	This leaf matches if it has the value '*' or if its value equals the requested notification name.

nacm rule-list <A> rule <B> rpc-name <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..max}	Arbitrary name assigned to the rule-list.
B	string {length = 1..max}	Arbitrary name assigned to the rule.
C	union string {pattern = \*}  string	This leaf matches if it has the value '*' or if its value equals the requested protocol operation name.

nacm write-default <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: permit   deny	Controls whether create, update, or delete access is granted if no appropriate rule is found for a particular write request.

	default 'deny'	
--	----------------	--

## 2.22 netconf-server commands

### 2.22.1 Command Tree

```

|-- netconf-server call-home (Presence)
    |-- cli-timer <A>
    |-- netconf-client <A>
        |-- connection-type persistent (Presence)
            |-- tcp-keep-alives (Presence)
                |-- interval-between-attempts <B>
                |-- max-attempts <B>
                |-- max-wait <B>
            |-- endpoints endpoint <B>
                |-- tls address <C> (Mandatory)
                |-- tls client-auth cert-maps cert-to-name <C>
                    |-- fingerprint <D> (Mandatory)
                    |-- map-type <D> (Mandatory)
                    |-- name <D> (Mandatory)
                |-- tls client-auth est-certificate-profile <C>
                |-- tls client-auth pinned-ca-certs <C>
                |-- tls hello-params cipher-suites cipher-suite <C>
                |-- tls hello-params tls-versions tls-version <C>
                |-- tls port <C>
                |-- tls server-identity central-keystore-reference asymmetric-key <C>
                |-- tls server-identity central-keystore-reference certificate <C>
                |-- tls server-identity est-certificate-profile-reference est-certificate-profile <C>
                |-- tls server-identity local-definition (Presence)
            |-- secondary-endpoints endpoints endpoint <B>
                |-- address <C>
                |-- port <C>

```

### 2.22.2 Commands

netconf-server call-home

netconf-server call-home cli-timer <A>

#### Input Parameters:

Parameter	Type	Description
A	uint16 [0 .. 3600]	Unit: seconds  This timer starts running when callhome session is disconnected. Upon expiry of

	default '0'	<p>this timer interval, local management CLI port will open, i.e it overrules the closed configuration untill callhome session is re-established.</p> <p>Timer value of 0 (which is the default) disables cli timer functionality. local management CLI port status stays as configured.</p> <p>Timer is stopped and no action is performed if callhome session is re-established again within the expiry of this timer interval.</p>
--	-------------	---

netconf-server call-home netconf-client <A> connection-type persistent

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.

netconf-server call-home netconf-client <A> connection-type persistent tcp-keep-alives

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.

netconf-server call-home netconf-client <A> connection-type persistent tcp-keep-alives interval-between-attempts <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	uint16 [1..32767]  default '30'	Unit: seconds  Sets the amount of time in seconds, after which, if no reply to a keep-alive message has been received from the TCP peer, the next keep-alive message will be sent.

netconf-server call-home netconf-client <A> connection-type persistent tcp-keep-alives max-attempts <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	uint8 [1..127]  default '3'	Sets the maximum number of sequential keep-alive messages that can fail to obtain a response from the TCP peer before assuming the TCP peer is no longer alive.

netconf-server call-home netconf-client <A> connection-type persistent tcp-keep-alives max-wait <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	uint16 [1..32767]  default '30'	Unit: seconds  Sets the amount of time in seconds, after which, if no data has been received from the TCP peer, a TCP-level message will be sent to test the aliveness of the TCP peer.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls address <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.
C	union union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.)\{3\}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	The IP address or hostname of the endpoint. If a domain name is configured, then the DNS resolution should happen on each usage attempt. If the the DNS resolution results in multiple IP addresses, the IP addresses will be tried according to local preference order until a connection has been established or until all IP addresses have failed.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls client-auth cert-maps cert-to-name <C> fingerprint <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.
C	uint32	The id specifies the order in which the entries in the cert-to-name list are searched. Entries with lower numbers are searched first.
D	string {pattern = ([0-9a-fA-F]){2}(:[0-9a-fA-F]){2}}{0,254}}	Specifies a value with which the fingerprint of the full certificate presented by the peer is compared. If the fingerprint of the full

	certificate presented by the peer does not match the fingerprint configured, then the entry is skipped, and the search for a match continues.
--	---

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls client-auth cert-maps cert-to-name <C> map-type <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.
C	uint32	The id specifies the order in which the entries in the cert-to-name list are searched. Entries with lower numbers are searched first.
D	identityref One of: common-name   san-any   san-dns-name   san-ip-address   san-rfc822-name   specified	Specifies the algorithm used to map the certificate presented by the peer to a name.  Mappings that need additional configuration objects should use the 'when' statement to make them conditional based on the map-type.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls client-auth cert-maps cert-to-name <C> name <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.

C	uint32	The id specifies the order in which the entries in the cert-to-name list are searched. Entries with lower numbers are searched first.
D	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	When: ../map-type = 'x509c2n:specified'  Directly specifies the NETCONF username when the map-type is 'specified'.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls client-auth est-certificate-profile <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for this endpoint.
C	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls client-auth pinned-ca-certs <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for this endpoint.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS server to authenticate TLS client certificates. A client

		certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
--	--	--

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls hello-params cipher-suites cipher-suite <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.
C	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-edc-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-anon-with-aria-128-gcm-sha256   tls-dh-anon-with-aria-256-cbc-sha384   tls-dh-anon-with-aria-256-gcm-sha384   tls-dh-anon-with-camellia-128-cbc-sha   tls-dh-anon-with-camellia-128-cbc-sha256   tls-dh-anon-with-camellia-128-gcm-sha256   tls-dh-anon-with-camellia-256-cbc-sha   tls-dh-anon-with-camellia-256-cbc-sha256   tls-dh-anon-with-camellia-256-gcm-sha384   tls-dh-anon-with-des-cbc-sha   tls-dh-anon-with-rc4-128-md5   tls-dh-anon-with-seed-cbc-sha   tls-dh-dss-export-with-des40-cbc-sha   tls-dh-dss-with-3des-edc-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha256   tls-dh-dss-with-aes-128-gcm-sha256   tls-dh-dss-with-	Acceptable cipher suites in order of descending preference. The configured host key algorithms should be compatible with the algorithm used by the configured private key. Please see Section 5 of RFC FFFF for valid combinations.  If this leaf-list is not configured (has zero elements) the acceptable cipher suites are implementation- defined.

aes-256-cbc-sha | tls-dh-dss-with-aes-256-cbc-sha256 | tls-dh-dss-with-aes-256-gcm-sha384 | tls-dh-dss-with-aria-128-cbc-sha256 | tls-dh-dss-with-aria-128-gcm-sha256 | tls-dh-dss-with-aria-256-cbc-sha384 | tls-dh-dss-with-aria-256-gcm-sha384 | tls-dh-dss-with-camellia-128-cbc-sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-with-3des-ede-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-ede-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-

aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-



```

ecdsa-with-rc4-128-sha | tls-ecdhe-psk-
with-3des-ede-cbc-sha | tls-ecdhe-psk-
with-aes-128-cbc-sha | tls-ecdhe-psk-with-
aes-128-cbc-sha256 | tls-ecdhe-psk-with-
aes-128-ccm-8-sha256 | tls-ecdhe-psk-
with-aes-128-ccm-sha256 | tls-ecdhe-psk-
with-aes-128-gcm-sha256 | tls-ecdhe-psk-
with-aes-256-cbc-sha | tls-ecdhe-psk-with-
aes-256-cbc-sha384 | tls-ecdhe-psk-with-
aes-256-gcm-sha384 | tls-ecdhe-psk-with-
aria-128-cbc-sha256 | tls-ecdhe-psk-with-
aria-256-cbc-sha384 | tls-ecdhe-psk-with-
camellia-128-cbc-sha256 | tls-ecdhe-psk-
with-camellia-256-cbc-sha384 | tls-ecdhe-
psk-with-chacha20-poly1305-sha256 | tls-
ecdhe-psk-with-null-sha | tls-ecdhe-psk-
with-null-sha256 | tls-ecdhe-psk-with-null-
sha384 | tls-ecdhe-psk-with-rc4-128-sha |
tls-ecdhe-rsa-with-3des-ede-cbc-sha | tls-
ecdhe-rsa-with-aes-128-cbc-sha | tls-ecdhe-
rsa-with-aes-128-cbc-sha256 | tls-ecdhe-
rsa-with-aes-128-gcm-sha256 | tls-ecdhe-
rsa-with-aes-256-cbc-sha | tls-ecdhe-rsa-
with-aes-256-cbc-sha384 | tls-ecdhe-rsa-
with-aes-256-gcm-sha384 | tls-ecdhe-rsa-
with-aria-128-cbc-sha256 | tls-ecdhe-rsa-
with-aria-128-gcm-sha256 | tls-ecdhe-rsa-
with-aria-256-cbc-sha384 | tls-ecdhe-rsa-
with-aria-256-gcm-sha384 | tls-ecdhe-rsa-
with-camellia-128-cbc-sha256 | tls-ecdhe-
rsa-with-camellia-128-gcm-sha256 | tls-
ecdhe-rsa-with-camellia-256-cbc-sha384
| tls-ecdhe-rsa-with-camellia-256-gcm-
sha384 | tls-ecdhe-rsa-with-chacha20-
poly1305-sha256 | tls-ecdhe-rsa-with-null-
sha | tls-ecdhe-rsa-with-rc4-128-sha | tls-
empty-renegotiation-info-scsv | tls-fallback-
scsv | tls-gostr341112-256-with-28147-cnt-
imit | tls-gostr341112-256-with-kuznyechik-
ctr-omac | tls-gostr341112-256-with-magma-
ctr-omac | tls-krb5-export-with-des-cbc-40-
md5 | tls-krb5-export-with-des-cbc-40-sha
| tls-krb5-export-with-rc2-cbc-40-md5 | tls-
krb5-export-with-rc2-cbc-40-sha | tls-krb5-
export-with-rc4-40-md5 | tls-krb5-export-
with-rc4-40-sha | tls-krb5-with-3des-ede-
cbc-md5 | tls-krb5-with-3des-ede-cbc-sha
| tls-krb5-with-des-cbc-md5 | tls-krb5-with-
des-cbc-sha | tls-krb5-with-idea-cbc-md5
| tls-krb5-with-idea-cbc-sha | tls-krb5-with-
rc4-128-md5 | tls-krb5-with-rc4-128-sha
| tls-null-with-null-null | tls-psk-dhe-with-

```

aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-ede-cbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-aes-128-cbc-sha256 | tls-psk-with-aes-128-ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-with-aes-128-gcm-sha256 | tls-psk-with-aes-256-cbc-sha | tls-psk-with-aes-256-cbc-sha384 | tls-psk-with-aes-256-ccm | tls-psk-with-aes-256-ccm-8 | tls-psk-with-aes-256-gcm-sha384 | tls-psk-with-aria-128-cbc-sha256 | tls-psk-with-aria-128-gcm-sha256 | tls-psk-with-aria-256-cbc-sha384 | tls-psk-with-aria-256-gcm-sha384 | tls-psk-with-camellia-128-cbc-sha256 | tls-psk-with-camellia-128-gcm-sha256 | tls-psk-with-camellia-256-cbc-sha384 | tls-psk-with-camellia-256-gcm-sha384 | tls-psk-with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha | tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-ede-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha | tls-rsa-psk-with-aes-256-cbc-sha384 | tls-rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-psk-with-aria-128-cbc-sha256 | tls-rsa-psk-with-aria-128-gcm-sha256 | tls-rsa-psk-with-aria-256-cbc-sha384 | tls-rsa-psk-with-aria-256-gcm-sha384 | tls-rsa-psk-with-camellia-128-cbc-sha256 | tls-rsa-psk-with-camellia-128-gcm-sha256 | tls-rsa-psk-with-camellia-256-cbc-sha384 | tls-rsa-psk-with-camellia-256-gcm-sha384 | tls-rsa-psk-with-chacha20-poly1305-sha256 | tls-rsa-psk-with-null-sha | tls-rsa-psk-with-null-sha256 | tls-rsa-psk-with-null-sha384 | tls-rsa-psk-with-rc4-128-sha | tls-rsa-with-3des-ede-cbc-sha | tls-rsa-with-aes-128-cbc-sha | tls-rsa-with-aes-128-cbc-sha256 | tls-rsa-with-aes-128-ccm | tls-rsa-with-aes-128-ccm-8 | tls-rsa-with-aes-128-gcm-sha256 | tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-aes-256-cbc-sha256 | tls-rsa-with-aes-256-ccm | tls-rsa-with-aes-256-ccm-8 | tls-rsa-with-aes-256-gcm-sha384 | tls-rsa-with-aria-128-cbc-sha256 | tls-rsa-with-aria-128-gcm-sha256 | tls-rsa-with-aria-256-cbc-sha384 | tls-rsa-with-aria-256-gcm-sha384

	tls-rsa-with-camellia-128-cbc-sha   tls-rsa-with-camellia-128-cbc-sha256   tls-rsa-with-camellia-128-gcm-sha256   tls-rsa-with-camellia-256-cbc-sha   tls-rsa-with-camellia-256-cbc-sha256   tls-rsa-with-camellia-256-gcm-sha384   tls-rsa-with-des-cbc-sha   tls-rsa-with-idea-cbc-sha   tls-rsa-with-null-md5   tls-rsa-with-null-sha   tls-rsa-with-null-sha256   tls-rsa-with-rc4-128-md5   tls-rsa-with-rc4-128-sha   tls-rsa-with-seed-cbc-sha   tls-sha256-sha256   tls-sha384-sha384   tls-sm4-ccm-sm3   tls-sm4-gcm-sm3   tls-srp-sha-dss-with-3des-edc-cbc-sha   tls-srp-sha-dss-with-aes-128-cbc-sha   tls-srp-sha-dss-with-aes-256-cbc-sha   tls-srp-sha-rsa-with-3des-edc-cbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-edc-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha	
--	---	--

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls hello-params tls-versions tls-version <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for this endpoint.
C	identityref One of: tls12   tls13	Acceptable TLS protocol versions.  If this leaf-list is not configured (has zero elements) the acceptable TLS protocol versions are implementation- defined.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls port <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for this endpoint.
C	uint16 [0..65535]  default '4335'	The IP port for this endpoint. The NETCONF server will use the IANA-assigned well-known port for 'netconf-ch-tls' (4335) if no value is specified.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls server-identity central-keystore-reference asymmetric-key <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for this endpoint.
C	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls server-identity central-keystore-reference certificate <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string	An arbitrary name for this endpoint.

	{length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	
C	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()]/.. asymmetric-key]/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls server-identity est-certificate-profile-reference est-certificate-profile <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.
C	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls server-identity local-definition

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this endpoint.

netconf-server call-home netconf-client <A> secondary-endpoints endpoints endpoint <B>  
address <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string	An arbitrary name for a secondary callhome endpoint
C	union union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	The IP address (or hostname) to be used when connecting to the secondary endpoint. If no 'address' value is specified, then the same 'address' will be used as per the established primary callhome connection

netconf-server call-home netconf-client <A> secondary-endpoints endpoints endpoint <B> port  
<C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string	An arbitrary name for a secondary callhome endpoint
C	uint16 [0..65535]	The port to be used when connecting to the secondary callhome endpoint. If no 'port' value is specified, then the same port will be used as per the established primary callhome connection.

## 2.23 policies commands

### 2.23.1 Command Tree

```
|-- policies policy <A>  
    |-- classifiers <B>  
    |-- description <B>
```

### 2.23.2 Commands

policies policy <A> classifiers <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Name of the policy.
B	leafref : /bbf-qos-cls:classifiers/bbf-qos-cls:classifier-entry/bbf-qos-cls:name	The name of the referenced classifier entry.

policies policy <A> description <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	Name of the policy.
B	string {length = 0..64} {pattern = [ --]*}	Description of the policy.

## 2.24 policing-action-profiles commands

### 2.24.1 Command Tree

```

|-- policing-action-profiles action-profile <A>
|   |-- action <B>
|       |-- bac-color <C>
|       |-- dei-marking-list <C>
|           |-- dei-value <D>
|       |-- discard
|       |-- metered-color <C>
|       |-- metered-flow <C>
|       |-- pbit-marking-list <C>
|           |-- pbit-value <D>

```

### 2.24.2 Commands

policing-action-profiles action-profile <A> action <B> bac-color <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~~]*}	The name of a QoS action profile.
B	enumeration One of: green   yellow   red	The frames that have this flow color will be subject to the actions configured in the referenced profile.
C	union enumeration One of: green   yellow   red  enumeration One of: copy-from-flow-color	Defines the frame color for color aware BAC queuing.

policing-action-profiles action-profile <A> action <B> dei-marking-list <C> dei-value <D>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS action profile.
B	enumeration One of: green   yellow   red	The frames that have this flow color will be subject to the actions configured in the referenced profile.
C	uint8	The index associated with a DEI value.
D	uint8 [0..1]	A DEI value to be inserted in the DEI bit of a packet's VLAN tag or as match criteria for another classifier associated with the same QoS policy.

policing-action-profiles action-profile <A> action <B> discard

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS action profile.
B	enumeration One of: green   yellow   red	The frames that have this flow color will be subject to the actions configured in the referenced profile.

policing-action-profiles action-profile <A> action <B> metered-color <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS action profile.
B	enumeration One of: green   yellow   red	The frames that have this flow color will be subject to the actions configured in the referenced profile.
C	boolean	Denotes the frame which are color-marked after policing by certain policer types.

policing-action-profiles action-profile <A> action <B> metered-flow <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a QoS action profile.
B	enumeration One of: green   yellow   red	The frames that have this flow color will be subject to the actions configured in the referenced profile.
C	boolean	Denotes the frame which are metered by policer.

policing-action-profiles action-profile <A> action <B> pbit-marking-list <C> pbit-value <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a QoS action profile.
B	enumeration One of: green   yellow   red	The frames that have this flow color will be subject to the actions configured in the referenced profile.
C	uint8	The index associated with a p-bit value.
D	uint8 [0..7]	A p-bit value to be inserted in the p-bits of a packet's VLAN tag or as match criteria for another classifier associated with the same QoS policy.

## 2.25 policing-pre-handling-profiles commands

### 2.25.1 Command Tree

```

|-- policing-pre-handling-profiles pre-handling-profile <A>
    |-- pre-handling-entry <B>
        |-- flow-color <C>
        |-- match-params dei-marking-list <C>
            |-- dei-value <D>
        |-- match-params pbit-marking-list <C>
            |-- pbit-value <D>
        |-- match-params vlans (Presence)
        |-- tag <C>
            |-- in-dei <D>
            |-- in-pbit-list <D>
        |-- policing-traffic-class <C>

```

### 2.25.2 Commands

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> flow-color <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ --~]*}	The name of a QoS pre-handling profile entry.
C	enumeration One of: green   yellow   red	Defines the packet color for when color-aware classification/actions is needed in a proceeding QoS policy.

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> match-params dei-marking-list <C> dei-value <D>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile entry.
C	uint8	The index associated with a DEI value.
D	uint8 [0..1]	A DEI value to be inserted in the DEI bit of a packet's VLAN tag or as match criteria for another classifier associated with the same QoS policy.

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> match-params  
pbit-marking-list <C> pbit-value <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile entry.
C	uint8	The index associated with a metadata P-bit value.
D	uint8 [0..7]	This leaf-list provides a set of possible P-bit values as a criterion for classifying packets.  There is a match if the identified packet 's metadata P-bit is one of the values specified in the leaf-list.

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> match-params  
vlans

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile entry.

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> match-params  
vlangs tag <C> in-dei <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ --]*}	The name of a QoS pre-handling profile entry.
C	uint8 [0..1]	The index into the tag stack with the outermost tag represented by index 0.
D	uint8 [0..1]	<p>Filter containing DEI bit value(s) to be matched with the values of the corresponding packet fields. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. E.g. an untagged packet does not contain a DEI bit, hence this packet will not match a specified DEI bit value. In case the leaf is unknown, no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the DEI bit of the outermost VLAN tag of the packet, the element with index 1 is used to match with the DEI bit of the second VLAN tag of the packet.</p>

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> match-params  
vlangs tag <C> in-pbit-list <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ ~-]*}	The name of a QoS pre-handling profile entry.
C	uint8 [0..1]	The index into the tag stack with the outermost tag represented by index 0.
D	string {pattern = ([0-7](-[0-7])?(,[0-7](-[0-7])?)*)}	<p>Filter containing P-bit value(s) to be matched with the value of the corresponding packet field. The list of values form an OR condition: in case the value of the packet field matches with one of the values of the leaf then there is a match. In case the leaf specifies a set of values and none of them appear in the packet, then there is no match. In case the leaf specifies a value for a packet field that is not present, then no packets match the filter. E.g. an untagged packet does not contain P-bits, hence this packet will not match a specified P-bit value. In case the leaf is an empty list, or unknown, then no match is required and all packets classify the filter, including untagged packets.</p> <p>An Ethernet frame can contain multiple VLAN tags or no VLAN tag. The vlan-tag-match-type/vlan-tagged/tag is a list and the element with index 0 is used to match with the P-bits of outermost VLAN tag of the packet, the element with index 1 is used to match with the P-bits of the second VLAN tag of the packet.</p>

policing-pre-handling-profiles pre-handling-profile <A> pre-handling-entry <B> policing-traffic-class <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a QoS pre-handling profile.
B	string {length = 1..64} {pattern = [ -~]*}	The name of a QoS pre-handling profile entry.
C	uint32 [0..7]	<p>Defines the traffic class for policing. This classifier action is used by policer types 'two-rate-three-color-marker-with-cos' and 'two-rate-three-color-marker-mef-with-cos' to prioritize the traffic in token buckets during Policing.</p> <p>Traffic can be assigned with a 'policing-traffic-class' using its Class of Service(CoS) parameters like 'pbit/dei'. Example: pbit to policing-traffic-class mapping.</p>

## 2.26 policing-profiles commands

### 2.26.1 Command Tree

```

|-- policing-profiles policing-profile <A>
|  |-- two-rate-three-color-marker-mef-with-cos cbs <B> (Mandatory)
|  |-- two-rate-three-color-marker-mef-with-cos cir <B> (Mandatory)
|  |-- two-rate-three-color-marker-with-cos cbs <B> (Mandatory)
|  |-- two-rate-three-color-marker-with-cos cir <B> (Mandatory)
|  |-- two-rate-three-color-marker-with-cos pbs <B> (Mandatory)
|  |-- two-rate-three-color-marker-with-cos pir <B> (Mandatory)
|  |-- policing-action-profile <B>
|  |-- policing-pre-handling-profile <B>
|  |-- scope <B>
|  |-- single-rate-two-color-marker cbs <B>
|  |-- single-rate-two-color-marker cir <B>
|  |-- two-rate-three-color-marker-mef cbs <B>
|  |-- two-rate-three-color-marker-mef cir <B>
|  |-- two-rate-three-color-marker-mef color-mode <B>
|  |-- two-rate-three-color-marker-mef couple-flag <B>
|  |-- two-rate-three-color-marker-mef ebs <B>
|  |-- two-rate-three-color-marker-mef eir <B>
|  |-- two-rate-three-color-marker-mef-with-cos cbs-tc-threshold policing-tc-threshold <B>
|     |-- threshold <C> (Mandatory)
|  |-- two-rate-three-color-marker-mef-with-cos couple-flag <B>
|  |-- two-rate-three-color-marker-mef-with-cos ebs <B>
|  |-- two-rate-three-color-marker-mef-with-cos ebs-tc-threshold policing-tc-threshold <B>
|     |-- threshold <C> (Mandatory)
|  |-- two-rate-three-color-marker-mef-with-cos eir <B>
|  |-- two-rate-three-color-marker-with-cos cbs-tc-threshold policing-tc-threshold <B>
|     |-- threshold <C> (Mandatory)
|  |-- two-rate-three-color-marker-with-cos pbs-tc-threshold policing-tc-threshold <B>
|     |-- threshold <C> (Mandatory)

```

### 2.26.2 Commands

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos cbs <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint32 [1024..134215680]	Committed Burst Size (CBS) defines the amount of traffic that can be admitted above the CIR and is considered green.

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos cir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint64 [0..1000000000000]	Committed Information Rate (CIR) is used to define the average rate of traffic that respect the guarantees of bandwidth. This traffic is defined as green traffic its transmission is guaranteed across the network.

policing-profiles policing-profile <A> two-rate-three-color-marker-with-cos cbs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint32 [1024..134215680]	Committed Burst Size (CBS) defines the amount of traffic that can be admitted above the CIR and is considered green.

policing-profiles policing-profile <A> two-rate-three-color-marker-with-cos cir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint64 [0..1000000000000]	Committed Information Rate (CIR) is used to define the average rate of traffic that

		respect the guarantees of bandwidth. This traffic is defined as green traffic its transmission is guaranteed across the network.
--	--	--

policing-profiles policing-profile <A> two-rate-three-color-marker-with-cos pbs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of the policing profile.
B	uint32 [1024..134215680]	Peak burst size (PBS) defines the amount of traffic that can be admitted above the PIR (burst) without being discarded directly by the policer (yellow).

policing-profiles policing-profile <A> two-rate-three-color-marker-with-cos pir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of the policing profile.
B	uint64 [0..1000000000000]	Peak Information Rate (PIR) is used to define the average rate of traffic that is admitted in the network with the assurance that it will not be discarded directly by the policer, the traffic in excess to the green one can be discarded in case of congestion and is considered yellow.

policing-profiles policing-profile <A> policing-action-profile <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	leafref : /nokia-qos-plc-ext:policing-action-profiles/ nokia-qos-plc-ext:action-profile/nokia-qos-plc-ext:name	The name of the referenced QoS policing action profile.

policing-profiles policing-profile <A> policing-pre-handling-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	leafref : /policing-pre-handling-profiles/pre-handling-profile/name	The name of the referenced QoS policing pre-handling profile.

policing-profiles policing-profile <A> scope <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	identityref One of: ethernet-interface   vlan-sub-interface	Identifies the scope of the policer instance sharing is within Ethernet interface or VLAN sub-interface.

policing-profiles policing-profile <A> single-rate-two-color-marker cbs <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the policing profile.

	{length = 1..64} {pattern = [ ~-]*}	
B	uint32	Committed Burst Size (CBS) defines the amount of traffic that can be admitted above the CIR and is considered green.

policing-profiles policing-profile <A> single-rate-two-color-marker cir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	The name of the policing profile.
B	uint64	Committed Information Rate (CIR) is used to define the average rate of traffic that respect the guarantees of bandwidth. This traffic is defined as green traffic its transmission is guaranteed across the network.

policing-profiles policing-profile <A> two-rate-three-color-marker-mef cbs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	The name of the policing profile.
B	uint32	Committed Burst Size (CBS) defines the amount of traffic that can be admitted above the CIR and is considered green.

policing-profiles policing-profile <A> two-rate-three-color-marker-mef cir <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint64	Committed Information Rate (CIR) is used to define the average rate of traffic that respect the guarantees of bandwidth. This traffic is defined as green traffic its transmission is guaranteed across the network.

policing-profiles policing-profile <A> two-rate-three-color-marker-mef color-mode <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	enumeration One of: color-aware   color-blind	Configures the color mode of the policer. The color mode leaf indicates whether the color-aware or color-blind property is employed by the policer profile.

policing-profiles policing-profile <A> two-rate-three-color-marker-mef couple-flag <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint8 [0..1]	<p>The Coupling Flag CF controls the volume of the packets that are declared Yellow.</p> <p>When CF is set to 0, the long term average bit rate of packets that are declared Yellow is bounded by EIR.</p> <p>When CF is set to 1, the long term average bit rate of packets that are declared Yellow is bounded by CIR + EIR depending on</p>

		volume of the offered Service Frames that are declared Green. In both cases the burst size of the packets that are declared Yellow is bounded by EBS.
--	--	---

policing-profiles policing-profile <A> two-rate-three-color-marker-mef ebs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	The name of the policing profile.
B	uint32	Excess burst size (EBS) defines the amount of excessive traffic that can be admitted above the EIR without being discarded directly by the policer (yellow).

policing-profiles policing-profile <A> two-rate-three-color-marker-mef eir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	The name of the policing profile.
B	uint64	Excess Information Rate (EIR) is used to define how much traffic exceeding the CIR can be admitted in the network with the assurance that it will not be discarded directly by the policer, this traffic can be discarded in case of congestion and is considered yellow.

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos cbs-tc-threshold  
policing-tc-threshold <B> threshold <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of the policing profile.
B	uint8 [0..7]	Identifies the policing-tc value.
C	uint8 [0..100]	<p>Identifies the threshold value for a policing-tc.</p> <p>A policer uses parameters in pairs: the information rate determines the bandwidth, and a burstiness provides some timing elasticity to be applied on the first. E.g. a PIR (peak information rate) is combined with PBS (peak burst size).</p> <p>The threshold is a percentage to calculate a different burstiness parameter to be applied when policing a frame of the specified policing traffic class.</p> <p>The higher the threshold, the lower the chance the frame gets marked 'red' by the policer. The traffic which is configured with higher threshold would consume higher token bucket size and have a higher chance to have tokens.</p> <p>Example: policing-tc threshold 5 90% 2 40% 4 20% Suppose at moment 't' a frame has to be evaluated by the policer. When the frame is marked with policing-tc '5' the policer will evaluate whether this frame, (in combination with all earlier frames currently processing in the token bucket irrespective of the policing-tc they got assigned), will fit in the to be evaluated information rate combined with 90% of the configured burstiness. The same approach applies to the other policing traffic classes..</p>

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos couple-flag <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint8 [0..1]  default '0'	<p>The Coupling Flag CF controls the volume of the packets that are declared Yellow.</p> <p>When CF is set to 0, the long term average bit rate of packets that are declared Yellow is bounded by EIR.</p> <p>When CF is set to 1, the long term average bit rate of packets that are declared Yellow is bounded by CIR + EIR depending on volume of the offered Service Frames that are declared Green. In both cases the burst size of the packets that are declared Yellow is bounded by EBS.</p>

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos ebs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint32 [1024..134215680]  default '1024'	Excess burst size (EBS) defines the amount of excessive traffic that can be admitted above the EIR without being discarded directly by the policer (yellow).

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos ebs-tc-threshold  
policing-tc-threshold <B> threshold <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.

B	uint8 [0..7]	Identifies the policing-tc value.
C	uint8 [0..100]	<p>Identifies the threshold value for a policing-tc.</p> <p>A policer uses parameters in pairs: the information rate determines the bandwidth, and a burstiness provides some timing elasticity to be applied on the first. E.g. a PIR (peak information rate) is combined with PBS (peak burst size).</p> <p>The threshold is a percentage to calculate a different burstiness parameter to be applied when policing a frame of the specified policing traffic class.</p> <p>The higher the threshold, the lower the chance the frame gets marked 'red' by the policer. The traffic which is configured with higher threshold would consume higher token bucket size and have a higher chance to have tokens.</p> <p>Example: policing-tc threshold 5 90% 2 40% 4 20% Suppose at moment 't' a frame has to be evaluated by the policer. When the frame is marked with policing-tc '5' the policer will evaluate whether this frame, (in combination with all earlier frames currently processing in the token bucket irrespective of the policing-tc they got assigned), will fit in the to be evaluated information rate combined with 90% of the configured burstiness. The same approach applies to the other policing traffic classes..</p>

policing-profiles policing-profile <A> two-rate-three-color-marker-mef-with-cos eir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the policing profile.
B	uint64 [0..1000000000000]	Excess Information Rate (EIR) is used to define how much traffic exceeding the

	default '0'	CIR can be admitted in the network with the assurance that it will not be discarded directly by the policer, this traffic can be discarded in case of congestion and is considered yellow.
--	-------------	--

policing-profiles policing-profile <A> two-rate-three-color-marker-with-cos cbs-tc-threshold  
policing-tc-threshold <B> threshold <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~-]*}	The name of the policing profile.
B	uint8 [0..7]	Identifies the policing-tc value.
C	uint8 [0..100]	<p>Identifies the threshold value for a policing-tc.</p> <p>A policer uses parameters in pairs: the information rate determines the bandwidth, and a burstiness provides some timing elasticity to be applied on the first. E.g. a PIR (peak information rate) is combined with PBS (peak burst size).</p> <p>The threshold is a percentage to calculate a different burstiness parameter to be applied when policing a frame of the specified policing traffic class.</p> <p>The higher the threshold, the lower the chance the frame gets marked 'red' by the policer. The traffic which is configured with higher threshold would consume higher token bucket size and have a higher chance to have tokens.</p> <p>Example: policing-tc threshold 5 90% 2 40% 4 20% Suppose at moment 't' a frame has to be evaluated by the policer. When the frame is marked with policing-tc '5' the policer will evaluate whether this frame, (in combination with all earlier frames currently processing in the token bucket irrespective of the</p>

		policing-tc they got assigned), will fit in the to be evaluated information rate combined with 90% of the configured burstiness. The same approach applies to the other policing traffic classes..
--	--	--

policing-profiles policing-profile <A> two-rate-three-color-marker-with-cos pbs-tc-threshold

policing-tc-threshold <B> threshold <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of the policing profile.
B	uint8 [0..7]	Identifies the policing-tc value.
C	uint8 [0..100]	<p>Identifies the threshold value for a policing-tc.</p> <p>A policer uses parameters in pairs: the information rate determines the bandwidth, and a burstiness provides some timing elasticity to be applied on the first. E.g. a PIR (peak information rate) is combined with PBS (peak burst size).</p> <p>The threshold is a percentage to calculate a different burstiness parameter to be applied when policing a frame of the specified policing traffic class.</p> <p>The higher the threshold, the lower the chance the frame gets marked 'red' by the policer. The traffic which is configured with higher threshold would consume higher token bucket size and have a higher chance to have tokens.</p> <p>Example: policing-tc threshold 5 90% 2 40% 4 20% Suppose at moment 't' a frame has to be evaluated by the policer. When the frame is marked with policing-tc '5' the policer will evaluate whether this frame, (in combination with all earlier frames currently processing in the token bucket irrespective of the</p>

		policing-tc they got assigned), will fit in the to be evaluated information rate combined with 90% of the configured burstiness. The same approach applies to the other policing traffic classes..
--	--	--

## 2.27 policy commands

### 2.27.1 Command Tree

```

|-- policy rule <A>
|  |-- expr <B> (Mandatory)
|  |-- error-message <B>
|  |-- foreach <B>
|  |-- warning-message <B>

```

### 2.27.2 Commands

policy rule <A> expr <B>

#### Input Parameters:

Parameter	Type	Description
A	string	An arbitrary name of the policy rule.
B	string	<p>An XPath 1.0 expression that is evaluated when the configuration is validated, either when a validate operation is performed, or at commit time.</p> <p>The result of the expression is converted to a boolean using the standard XPath rules. If the result is 'false', validation fails with an error or a warning, as specified in the 'action' choice.</p> <p>For example, in order to verify that no ethernet interface has a MTU other than 1500, the following expression can be given:</p> <pre>foreach '/interfaces/interface[type = ethernet]' expr 'mtu != 1500' error 'Ethernet interface {name} must have MTU 1500'</pre> <p>Alternatively:</p> <pre>expr 'not(/interface[type = ethernet and mtu != 1500])' error 'All ethernet interfaces must have MTU 1500'</pre> <p>The XPath expression is evaluated once for each node in the node set returned by the 'foreach' expression, in the following context:</p>

		<p>o The context node is the current node in the 'foreach' node set.</p> <p>o If this leaf is set in XML (e.g., over NETCONF), the set of namespace declarations are those in scope on the 'expr' leaf.</p> <p>Otherwise, the set of namespace declarations are all available namespaces, with the prefixes defined in the modules.</p> <p>o The set of variable bindings is empty.</p> <p>o The function library is the core function library and the following additional function:</p> <p>Function: node-set current()</p> <p>Returns the initial context node.</p> <p>Function: node-set deref(node-set)</p> <p>The deref function follows the reference defined by the first node in document order in the argument node-set, and returns the nodes it refers to.</p> <p>If the first argument node is an instance-identifier, the function returns a node-set that contains the single node that the instance identifier refers to, if it exists. If no such node exists, an empty node-set is returned.</p> <p>If the first argument node is a leafref, the function returns a node-set that contains the nodes that the leafref refers to.</p> <p>If the first argument node is of any other type, an empty node-set is returned.</p>
--	--	---

policy rule <A> error-message <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string	An arbitrary name of the policy rule.
B	string	If specified, expression failure is treated as an error.

policy rule <A> foreach <B>

**Input Parameters:**

Parameter	Type	Description
A	string	An arbitrary name of the policy rule.
B	string	<p>An XPath 1.0 expression that is evaluated when the configuration is validated, either when a validate operation is performed, or at commit time.</p> <p>The XPath expression must return a node set. For each node in the node set, the XPath expression defined in the 'expr' leaf is evaluated.</p> <p>If this leaf is not specified, the node set contains the single root node of all data models, i.e., the node which has the top-level nodes from all data models as children.</p> <p>The XPath expression is evaluated in the following context:</p> <ul style="list-style-type: none"> <li>o The context node is the root of all data models, i.e., the node which has the top-level nodes from all data models as children.</li> <li>o The namespace declarations, variable bindings, and function library are the same as for the 'expr' leaf.</li> </ul>

policy rule <A> warning-message <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

---

A	string	An arbitrary name of the policy rule.
B	string	If specified, expression failure is treated as a warning.

## 2.28 qos-policy-profiles commands

### 2.28.1 Command Tree

```
|-- qos-policy-profiles policy-profile <A>
   |-- policy-list <B>
```

### 2.28.2 Commands

qos-policy-profiles policy-profile <A> policy-list <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	Name of the QoS policy profile.
B	leafref : /bbf-qos-pol:policies/bbf-qos-pol:policy/bbf-qos-pol:name	The name of the referenced policy entry.

## 2.29 routing commands

### 2.29.1 Command Tree

```

|-- routing control-plane-protocols control-plane-protocol <A><B>
    |-- default-route <C>
    |-- description <C>
    |-- static-routes ipv4 route <C>
        |-- description <D>
        |-- next-hop next-hop-address <D>
    |-- static-routes ipv6 route <C>
        |-- description <D>
        |-- next-hop next-hop-address <D>
|-- routing router-id <A>

```

### 2.29.2 Commands

routing control-plane-protocols control-plane-protocol <A><B> default-route <C>

#### Input Parameters:

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol - an identity derived from the 'control-plane-protocol' base identity.
B	string {length = 1..64}	An arbitrary name of the control-plane protocol instance.
C	boolean  default 'true'	Default Route indication

routing control-plane-protocols control-plane-protocol <A><B> description <C>

#### Input Parameters:

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol - an identity derived from the 'control-plane-protocol' base identity.
B	string {length = 1..64}	An arbitrary name of the control-plane protocol instance.

C	string	Textual description of the control-plane protocol instance.
---	--------	---

routing control-plane-protocols control-plane-protocol <A><B> static-routes ipv4 route <C>  
description <D>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol - an identity derived from the 'control-plane-protocol' base identity.
B	string {length = 1..64}	An arbitrary name of the control-plane protocol instance.
C	string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])/(([0-9]) ([1-2][0-9]) (3[0-2]))}	IPv4 destination prefix.
D	string	Textual description of the route.

routing control-plane-protocols control-plane-protocol <A><B> static-routes ipv4 route <C>  
next-hop next-hop-address <D>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol - an identity derived from the 'control-plane-protocol' base identity.
B	string {length = 1..64}	An arbitrary name of the control-plane protocol instance.
C	string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])/(([0-9]) ([1-2][0-9]) (3[0-2]))}	IPv4 destination prefix.
D	string	IPv4 address of the next hop.

	{pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.)\{3\}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}	
--	--	--

routing control-plane-protocols control-plane-protocol <A><B> static-routes ipv6 route <C>  
description <D>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol - an identity derived from the 'control-plane-protocol' base identity.
B	string {length = 1..64}	An arbitrary name of the control-plane protocol instance.
C	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:){0,5}((([0-9a-fA-F]{0,4}:)?(:[0-9a-fA-F]{0,4}) (((25[0-5] 2[0-4][0-9] 01)?[0-9]?[0-9])\.)\{3\}(25[0-5] 2[0-4][0-9] 01)?[0-9]?[0-9])) ((([0-9] 01)?[0-9]) 12[0-8]))}	IPv6 destination prefix.
D	string	Textual description of the route.

routing control-plane-protocols control-plane-protocol <A><B> static-routes ipv6 route <C>  
next-hop next-hop-address <D>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol - an identity derived from the 'control-plane-protocol' base identity.
B	string {length = 1..64}	An arbitrary name of the control-plane protocol instance.
C	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:){0,5}((([0-9a-fA-F]{0,4}:)?(:[0-9a-fA-F]{0,4}) (((25[0-5] 2[0-4][0-9] 01)?[0-9]?[0-9])\.)\{3\}(25[0-5] 2[0-4][0-9] 01)?[0-9]?[0-9])) ((([0-9] 01)?[0-9]) 12[0-8]))}	IPv6 destination prefix.

	[0-9]?[0-9])\.\}{3}(25[0-5] 2[0-4][0-9] [01]?[0-9]?[0-9])))/(((0-9) ([0-9]{2}) (1[0-1][0-9]) (12[0-8]))))}	
D	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:){0,5}(((0-9a-fA-F){0,4}:)?(:[0-9a-fA-F]{0,4})) (((25[0-5] 2[0-4][0-9] [01]?[0-9]?[0-9])\.\){3}(25[0-5] 2[0-4][0-9] [01]?[0-9]?[0-9])))(%[\p{N}\p{L}]+)?}	IPv6 address of the next hop.

routing router-id <A>

**Input Parameters:**

Parameter	Type	Description
A	string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.\){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5]))}	A 32-bit number in the form of a dotted quad that is used by some routing protocols identifying a router.

## 2.30 session commands

### 2.30.1 Command Tree

```
|-- session (Presence)
|   |-- autowizard <A>
|   |-- complete-on-space <A>
|   |-- devtools <A>
|   |-- display-level <A>
|   |-- history <A>
|   |-- idle-timeout <A>
|   |-- ignore-leading-space <A>
|   |-- paginate <A>
|   |-- prompt1 <A>
|   |-- prompt2 <A>
|   |-- show-defaults <A>
```

### 2.30.2 Commands

session

session autowizard <A>

#### Input Parameters:

Parameter	Type	Description
A	boolean	Automatically query user for mandatory elems

session complete-on-space <A>

#### Input Parameters:

Parameter	Type	Description
A	boolean	Enable/disable completion on space

session devtools <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	Enable/disable development tools

session display-level <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [1 .. 64]	Max depth to show when displaying configuration

session history <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. 8192]	History size

session idle-timeout <A>

**Input Parameters:**

Parameter	Type	Description
A	uint64 [0 .. 8192]	CLI idle-timeout in seconds

session ignore-leading-space <A>

**Input Parameters:**

---

Parameter	Type	Description
A	boolean	Ignore leading whitespace

session paginate <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	Paginate output from CLI commands

session prompt1 <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Prompt for operational mode

session prompt2 <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Prompt for configure mode

session show-defaults <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	Show default values when showing the configuration

## 2.31 syslog commands

### 2.31.1 Command Tree

```

|-- syslog (Presence)
  |-- actions file log-file <A>
    |-- facility-filter facility-list <B><C>
      |-- advanced-compare action <D>
      |-- advanced-compare compare <D>
      |-- file-rotation max-file-size <B>
      |-- file-rotation number-of-files <B>
      |-- file-rotation retention <B>
      |-- file-rotation rollover <B>
      |-- pattern-match <B>
  |-- actions remote destination <A>
    |-- facility-filter facility-list <B><C>
      |-- advanced-compare action <D>
      |-- advanced-compare compare <D>
      |-- pattern-match <B>
      |-- tls address <B>
      |-- tls client-identity certificate central-keystore-reference asymmetric-key <B>
      |-- tls client-identity certificate central-keystore-reference certificate <B>
      |-- tls client-identity certificate est-certificate-profile-reference est-certificate-profile <B>
      |-- tls client-identity certificate local-definition (Presence)
        |-- cert <B>
      |-- tls hello-params cipher-suites cipher-suite <B>
      |-- tls hello-params tls-versions tls-version <B>
      |-- tls keepalives (Presence)
        |-- idle-time <B> (Mandatory)
        |-- max-probes <B> (Mandatory)
        |-- probe-interval <B> (Mandatory)
      |-- tls port <B>
      |-- tls server-auth est-certificate-profile <B>
      |-- tls server-auth pinned-ca-certs <B>
      |-- udp address <B>
      |-- udp port <B>
  |-- verbose file facility-filter facility-list <A><B>
    |-- advanced-compare action <C>
    |-- advanced-compare compare <C>
  |-- verbose file file-rotation max-file-size <A>
  |-- verbose file file-rotation number-of-files <A>
  |-- verbose file file-rotation retention <A>
  |-- verbose file file-rotation rollover <A>
  |-- verbose file name <A>
  |-- verbose file pattern-match <A>

```

### 2.31.2 Commands

syslog

syslog actions file log-file <A> facility-filter facility-list <B><C> advanced-compare action <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\-\_]+\(\.\)?[0-9a-zA-Z\-\_]*}	This leaf specifies the name of the log file which MUST use the uri scheme file:.
B	union identityref One of: audit   auth   authpriv   console   cron   cron2   daemon   ftp   kern   local0   local1   local2   local3   local4   local5   local6   local7   lpr   mail   news   ntp   syslog   user   uucp  enumeration One of: all	The leaf uniquely identifies a syslog facility.
C	union enumeration One of: emergency   alert   critical   error   warning   notice   info   debug  enumeration One of: none   all	This leaf specifies the syslog message severity.
D	enumeration One of: log   block  default 'log'	The action can be used to specify if the message should be logged or blocked based on the outcome of the compare operation.

syslog actions file log-file <A> facility-filter facility-list <B><C> advanced-compare compare <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31}	This leaf specifies the name of the log file which MUST use the uri scheme file:.

	{pattern = [0-9a-zA-Z\_-]+(\.)?[0-9a-zA-Z\_-]*}	
B	union identityref One of: audit   auth   authpriv   console   cron   cron2   daemon   ftp   kern   local0   local1   local2   local3   local4   local5   local6   local7   lpr   mail   news   ntp   syslog   user   uucp  enumeration One of: all	The leaf uniquely identifies a syslog facility.
C	union enumeration One of: emergency   alert   critical   error   warning   notice   info   debug  enumeration One of: none   all	This leaf specifies the syslog message severity.
D	enumeration One of: equals   equals-or-higher  default 'equals-or-higher'	The compare can be used to specify the comparison operator that should be used to compare the syslog message severity with the specified severity.

syslog actions file log-file <A> file-rotation max-file-size <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\_-]+(\.)?[0-9a-zA-Z\_-]*}	This leaf specifies the name of the log file which MUST use the uri scheme file:.
B	uint32 [1..10]  default '10'	Unit: megabytes  This leaf specifies the maximum log file size.

syslog actions file log-file <A> file-rotation number-of-files <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\-\_]+\(\.\)?[0-9a-zA-Z\-\_]*}	This leaf specifies the name of the log file which MUST use the uri scheme file:.
B	uint32 [0..10]  default '1'	This leaf specifies the maximum number of log files retained. Specify 1 for implementations that only support one log file.

syslog actions file log-file <A> file-rotation retention <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\-\_]+\(\.\)?[0-9a-zA-Z\-\_]*}	This leaf specifies the name of the log file which MUST use the uri scheme file:.
B	uint32 [24   168   720]	Unit: hours  This leaf specifies the length of time that completed/closed log event files should be stored in the file system before they are removed.

syslog actions file log-file <A> file-rotation rollover <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\-\_]+\(\.\)?[0-9a-zA-Z\-\_]*}	This leaf specifies the name of the log file which MUST use the uri scheme file:.
B	uint32	Unit: minutes

	[60   1440   10080]	This leaf specifies the length of time that log events should be written to a specific log file. Log events that arrive after the rollover period cause the current log file to be closed and a new log file to be opened.
--	---------------------	--

syslog actions file log-file <A> pattern-match <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\-\_]+(\.)?[0-9a-zA-Z\-\_]*}	This leaf specifies the name of the log file which MUST use the uri scheme file:.
B	string {length = 1 .. 128}	This leaf describes a Posix 1003.2 regular expression string that can be used to select a syslog message for logging. The match is performed on the SYSLOG-MSG field.

syslog actions remote destination <A> facility-filter facility-list <B><C> advanced-compare action <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~]*}	An arbitrary name for the endpoint to connect to.
B	union identityref One of: audit   auth   authpriv   console   cron   cron2   daemon   ftp   kern   local0   local1   local2   local3   local4   local5   local6   local7   lpr   mail   news   ntp   syslog   user   uucp  enumeration One of: all	The leaf uniquely identifies a syslog facility.

C	union enumeration One of: emergency   alert   critical   error   warning   notice   info   debug  enumeration One of: none   all	This leaf specifies the syslog message severity.
D	enumeration One of: log   block  default 'log'	The action can be used to specify if the message should be logged or blocked based on the outcome of the compare operation.

syslog actions remote destination <A> facility-filter facility-list <B><C> advanced-compare compare <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^z ~]*}	An arbitrary name for the endpoint to connect to.
B	union identityref One of: audit   auth   authpriv   console   cron   cron2   daemon   ftp   kern   local0   local1   local2   local3   local4   local5   local6   local7   lpr   mail   news   ntp   syslog   user   uucp  enumeration One of: all	The leaf uniquely identifies a syslog facility.
C	union enumeration One of: emergency   alert   critical   error   warning   notice   info   debug  enumeration One of:	This leaf specifies the syslog message severity.

	none   all	
D	enumeration One of: equals   equals-or-higher  default 'equals-or-higher'	The compare can be used to specify the comparison operator that should be used to compare the syslog message severity with the specified severity.

syslog actions remote destination <A> pattern-match <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	string {length = 1 .. 128}	This leaf describes a Posix 1003.2 regular expression string that can be used to select a syslog message for logging. The match is performed on the SYSLOG-MSG field.

syslog actions remote destination <A> tls address <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%[\p{N}\p{L}]+)?}  string  string {length = 1..253}	The leaf uniquely specifies the address of the remote host. One of the following must be specified: an ipv4 address, an ipv6 address, or a host name.

syslog actions remote destination <A> tls client-identity certificate central-keystore-reference asymmetric-key <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.

syslog actions remote destination <A> tls client-identity certificate central-keystore-reference certificate <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()/../ asymmetric-key]/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

syslog actions remote destination <A> tls client-identity certificate est-certificate-profile-reference est-certificate-profile <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

syslog actions remote destination <A> tls client-identity certificate local-definition

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^z ~]*}	An arbitrary name for the endpoint to connect to.

syslog actions remote destination <A> tls client-identity certificate local-definition cert <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^z ~]*}	An arbitrary name for the endpoint to connect to.
B	binary	The binary certificate data for this certificate.

syslog actions remote destination <A> tls hello-params cipher-suites cipher-suite <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^z ~]*}	An arbitrary name for the endpoint to connect to.
B	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-ede-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-anon-with-aria-128-gcm-sha256   tls-dh-	Acceptable cipher suites in order of descending preference. The configured host key algorithms should be compatible with the algorithm used by the configured private key. Please see Section 5 of RFC FFFF for valid combinations.  If this leaf-list is not configured (has zero elements) the acceptable cipher suites are implementation- defined.

anon-with-aria-256-cbc-sha384 | tls-dh-anon-with-aria-256-gcm-sha384 | tls-dh-anon-with-camellia-128-cbc-sha | tls-dh-anon-with-camellia-128-cbc-sha256 | tls-dh-anon-with-camellia-128-gcm-sha256 | tls-dh-anon-with-camellia-256-cbc-sha | tls-dh-anon-with-camellia-256-cbc-sha256 | tls-dh-anon-with-camellia-256-gcm-sha384 | tls-dh-anon-with-des-cbc-sha | tls-dh-anon-with-rc4-128-md5 | tls-dh-anon-with-seed-cbc-sha | tls-dh-dss-export-with-des40-cbc-sha | tls-dh-dss-with-3des-edc-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha256 | tls-dh-dss-with-aes-128-gcm-sha256 | tls-dh-dss-with-aes-256-cbc-sha | tls-dh-dss-with-aes-256-cbc-sha256 | tls-dh-dss-with-aes-256-gcm-sha384 | tls-dh-dss-with-aria-128-cbc-sha256 | tls-dh-dss-with-aria-128-gcm-sha256 | tls-dh-dss-with-aria-256-cbc-sha384 | tls-dh-dss-with-aria-256-gcm-sha384 | tls-dh-dss-with-camellia-128-cbc-sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-with-3des-edc-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-edc-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-

aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-

sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-ccm | tls-ecdh-ecdsa-with-aes-128-ccm-8 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha |

tls-ecdh-eccsa-with-aes-256-cbc-sha384  
| tls-ecdh-eccsa-with-aes-256-ccm | tls-  
ecdh-eccsa-with-aes-256-ccm-8 | tls-  
ecdh-eccsa-with-aes-256-gcm-sha384 |  
tls-ecdh-eccsa-with-aria-128-cbc-sha256 |  
tls-ecdh-eccsa-with-aria-128-gcm-sha256 |  
tls-ecdh-eccsa-with-aria-256-cbc-sha384 |  
tls-ecdh-eccsa-with-aria-256-gcm-sha384  
| tls-ecdh-eccsa-with-camellia-128-cbc-  
sha256 | tls-ecdh-eccsa-with-camellia-128-  
gcm-sha256 | tls-ecdh-eccsa-with-  
camellia-256-cbc-sha384 | tls-ecdh-eccsa-  
with-camellia-256-gcm-sha384 | tls-ecdh-  
eccsa-with-chacha20-poly1305-sha256 |  
tls-ecdh-eccsa-with-null-sha | tls-ecdh-  
eccsa-with-rc4-128-sha | tls-ecdh-psk-  
with-3des-ede-cbc-sha | tls-ecdh-psk-  
with-aes-128-cbc-sha | tls-ecdh-psk-with-  
aes-128-cbc-sha256 | tls-ecdh-psk-with-  
aes-128-ccm-8-sha256 | tls-ecdh-psk-  
with-aes-128-ccm-sha256 | tls-ecdh-psk-  
with-aes-128-gcm-sha256 | tls-ecdh-psk-  
with-aes-256-cbc-sha | tls-ecdh-psk-with-  
aes-256-cbc-sha384 | tls-ecdh-psk-with-  
aes-256-gcm-sha384 | tls-ecdh-psk-with-  
aria-128-cbc-sha256 | tls-ecdh-psk-with-  
aria-256-cbc-sha384 | tls-ecdh-psk-with-  
camellia-128-cbc-sha256 | tls-ecdh-psk-  
with-camellia-256-cbc-sha384 | tls-ecdh-  
psk-with-chacha20-poly1305-sha256 | tls-  
ecdh-psk-with-null-sha | tls-ecdh-psk-  
with-null-sha256 | tls-ecdh-psk-with-null-  
sha384 | tls-ecdh-psk-with-rc4-128-sha |  
tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-  
ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-  
rsa-with-aes-128-cbc-sha256 | tls-ecdh-  
rsa-with-aes-128-gcm-sha256 | tls-ecdh-  
rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-  
with-aes-256-cbc-sha384 | tls-ecdh-rsa-  
with-aes-256-gcm-sha384 | tls-ecdh-rsa-  
with-aria-128-cbc-sha256 | tls-ecdh-rsa-  
with-aria-128-gcm-sha256 | tls-ecdh-rsa-  
with-aria-256-cbc-sha384 | tls-ecdh-rsa-  
with-aria-256-gcm-sha384 | tls-ecdh-rsa-  
with-camellia-128-cbc-sha256 | tls-ecdh-  
rsa-with-camellia-128-gcm-sha256 | tls-  
ecdh-rsa-with-camellia-256-cbc-sha384  
| tls-ecdh-rsa-with-camellia-256-gcm-  
sha384 | tls-ecdh-rsa-with-chacha20-  
poly1305-sha256 | tls-ecdh-rsa-with-null-  
sha | tls-ecdh-rsa-with-rc4-128-sha | tls-  
empty-renegotiation-info-scsv | tls-fallback-

scsv | tls-gostr341112-256-with-28147-cnt-  
imit | tls-gostr341112-256-with-kuznyechik-  
ctr-omac | tls-gostr341112-256-with-magma-  
ctr-omac | tls-krb5-export-with-des-cbc-40-  
md5 | tls-krb5-export-with-des-cbc-40-sha  
| tls-krb5-export-with-rc2-cbc-40-md5 | tls-  
krb5-export-with-rc2-cbc-40-sha | tls-krb5-  
export-with-rc4-40-md5 | tls-krb5-export-  
with-rc4-40-sha | tls-krb5-with-3des-edc-  
cbc-md5 | tls-krb5-with-3des-edc-cbc-sha  
| tls-krb5-with-des-cbc-md5 | tls-krb5-with-  
des-cbc-sha | tls-krb5-with-idea-cbc-md5  
| tls-krb5-with-idea-cbc-sha | tls-krb5-with-  
rc4-128-md5 | tls-krb5-with-rc4-128-sha  
| tls-null-with-null-null | tls-psk-dhe-with-  
aes-128-ccm-8 | tls-psk-dhe-with-aes-256-  
ccm-8 | tls-psk-with-3des-edc-cbc-sha | tls-  
psk-with-aes-128-cbc-sha | tls-psk-with-  
aes-128-cbc-sha256 | tls-psk-with-aes-128-  
ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-  
with-aes-128-gcm-sha256 | tls-psk-with-  
aes-256-cbc-sha | tls-psk-with-aes-256-  
cbc-sha384 | tls-psk-with-aes-256-ccm |  
tls-psk-with-aes-256-ccm-8 | tls-psk-with-  
aes-256-gcm-sha384 | tls-psk-with-aria-128-  
cbc-sha256 | tls-psk-with-aria-128-gcm-  
sha256 | tls-psk-with-aria-256-cbc-sha384  
| tls-psk-with-aria-256-gcm-sha384 | tls-  
psk-with-camellia-128-cbc-sha256 | tls-  
psk-with-camellia-128-gcm-sha256 | tls-  
psk-with-camellia-256-cbc-sha384 | tls-psk-  
with-camellia-256-gcm-sha384 | tls-psk-  
with-chacha20-poly1305-sha256 | tls-psk-  
with-null-sha | tls-psk-with-null-sha256 | tls-  
psk-with-null-sha384 | tls-psk-with-rc4-128-  
sha | tls-rsa-export-with-des40-cbc-sha |  
tls-rsa-export-with-rc2-cbc-40-md5 | tls-  
rsa-export-with-rc4-40-md5 | tls-rsa-psk-  
with-3des-edc-cbc-sha | tls-rsa-psk-with-  
aes-128-cbc-sha | tls-rsa-psk-with-aes-128-  
cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-  
sha256 | tls-rsa-psk-with-aes-256-cbc-sha  
| tls-rsa-psk-with-aes-256-cbc-sha384 | tls-  
rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-  
psk-with-aria-128-cbc-sha256 | tls-rsa-psk-  
with-aria-128-gcm-sha256 | tls-rsa-psk-  
with-aria-256-cbc-sha384 | tls-rsa-psk-with-  
aria-256-gcm-sha384 | tls-rsa-psk-with-  
camellia-128-cbc-sha256 | tls-rsa-psk-with-  
camellia-128-gcm-sha256 | tls-rsa-psk-with-  
camellia-256-cbc-sha384 | tls-rsa-psk-with-  
camellia-256-gcm-sha384 | tls-rsa-psk-with-

chacha20-poly1305-sha256 | tls-rsa-psk-with-null-sha | tls-rsa-psk-with-null-sha256 | tls-rsa-psk-with-null-sha384 | tls-rsa-psk-with-rc4-128-sha | tls-rsa-with-3des-ede-cbc-sha | tls-rsa-with-aes-128-cbc-sha | tls-rsa-with-aes-128-cbc-sha256 | tls-rsa-with-aes-128-ccm | tls-rsa-with-aes-128-ccm-8 | tls-rsa-with-aes-128-gcm-sha256 | tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-aes-256-cbc-sha256 | tls-rsa-with-aes-256-ccm | tls-rsa-with-aes-256-ccm-8 | tls-rsa-with-aes-256-gcm-sha384 | tls-rsa-with-aria-128-cbc-sha256 | tls-rsa-with-aria-128-gcm-sha256 | tls-rsa-with-aria-256-cbc-sha384 | tls-rsa-with-aria-256-gcm-sha384 | tls-rsa-with-camellia-128-cbc-sha | tls-rsa-with-camellia-128-cbc-sha256 | tls-rsa-with-camellia-128-gcm-sha256 | tls-rsa-with-camellia-256-cbc-sha | tls-rsa-with-camellia-256-cbc-sha256 | tls-rsa-with-camellia-256-gcm-sha384 | tls-rsa-with-des-cbc-sha | tls-rsa-with-idea-cbc-sha | tls-rsa-with-null-md5 | tls-rsa-with-null-sha | tls-rsa-with-null-sha256 | tls-rsa-with-rc4-128-md5 | tls-rsa-with-rc4-128-sha | tls-rsa-with-seed-cbc-sha | tls-sha256-sha256 | tls-sha384-sha384 | tls-sm4-ccm-sm3 | tls-sm4-gcm-sm3 | tls-srp-sha-dss-with-3des-ede-cbc-sha | tls-srp-sha-dss-with-aes-128-cbc-sha | tls-srp-sha-dss-with-aes-256-cbc-sha | tls-srp-sha-rsa-with-3des-ede-cbc-sha | tls-srp-sha-rsa-with-aes-128-cbc-sha | tls-srp-sha-rsa-with-aes-256-cbc-sha | tls-srp-sha-with-3des-ede-cbc-sha | tls-srp-sha-with-aes-128-cbc-sha | tls-srp-sha-with-aes-256-cbc-sha

syslog actions remote destination <A> tls hello-params tls-versions tls-version <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^_z ~]*}	An arbitrary name for the endpoint to connect to.
B	identityref One of: tls12   tls13	Acceptable TLS protocol versions.

		If this leaf-list is not configured (has zero elements) the acceptable TLS protocol versions are implementation- defined.
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syslog actions remote destination <A> tls keepalives

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z <sup>^</sup> -z ~]*}	An arbitrary name for the endpoint to connect to.

syslog actions remote destination <A> tls keepalives idle-time <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z <sup>^</sup> -z ~]*}	An arbitrary name for the endpoint to connect to.
B	uint16 [1..max]	Unit: seconds  Sets the amount of time after which if no data has been received from the TCP peer, a TCP-level probe message will be sent to test the aliveness of the TCP peer. Two hours (7200 seconds) is safe value, per RFC 1122.

syslog actions remote destination <A> tls keepalives max-probes <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z <sup>^</sup> -z ~]*}	An arbitrary name for the endpoint to connect to.

B	uint16 [1..max]	Sets the maximum number of sequential keep-alive probes that can fail to obtain a response from the TCP peer before assuming the TCP peer is no longer alive.
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syslog actions remote destination <A> tls keepalives probe-interval <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^z ~]*}	An arbitrary name for the endpoint to connect to.
B	uint16 [1..max]	Unit: seconds  Sets the time interval between failed probes. The interval SHOULD be significantly longer than one second in order to avoid harm on a congested link.

syslog actions remote destination <A> tls port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^z ~]*}	An arbitrary name for the endpoint to connect to.
B	uint16 [0..65535]  default '6514'	TCP port 6514 has been allocated as the default port for syslog over TLS.

syslog actions remote destination <A> tls server-auth est-certificate-profile <B>

**Input Parameters:**

Parameter	Type	Description
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A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules

syslog actions remote destination <A> tls server-auth pinned-ca-certs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.

syslog actions remote destination <A> udp address <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^~z ~]*}	An arbitrary name for the endpoint to connect to.
B	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  string	The leaf uniquely specifies the address of the remote host. One of the following must be specified: an ipv4 address, an ipv6 address, or a host name.

	{length = 1..253}	
--	-------------------	--

syslog actions remote destination <A> udp port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^_z ~]*}	An arbitrary name for the endpoint to connect to.
B	uint16 [0..65535]  default '514'	This leaf specifies the port number used to deliver messages to the remote server.

syslog verbose file facility-filter facility-list <A><B> advanced-compare action <C>

**Input Parameters:**

Parameter	Type	Description
A	union identityref One of: audit   auth   authpriv   console   cron   cron2   daemon   ftp   kern   local0   local1   local2   local3   local4   local5   local6   local7   lpr   mail   news   ntp   syslog   user   uucp  enumeration One of: all	The leaf uniquely identifies a syslog facility.
B	union enumeration One of: emergency   alert   critical   error   warning   notice   info   debug  enumeration One of:	This leaf specifies the syslog message severity.

	none   all	
C	enumeration One of: log   block  default 'log'	The action can be used to specify if the message should be logged or blocked based on the outcome of the compare operation.

syslog verbose file facility-filter facility-list <A><B> advanced-compare compare <C>

**Input Parameters:**

Parameter	Type	Description
A	union identityref One of: audit   auth   authpriv   console   cron   cron2   daemon   ftp   kern   local0   local1   local2   local3   local4   local5   local6   local7   lpr   mail   news   ntp   syslog   user   uucp  enumeration One of: all	The leaf uniquely identifies a syslog facility.
B	union enumeration One of: emergency   alert   critical   error   warning   notice   info   debug  enumeration One of: none   all	This leaf specifies the syslog message severity.
C	enumeration One of: equals   equals-or-higher  default 'equals-or-higher'	The compare can be used to specify the comparison operator that should be used to compare the syslog message severity with the specified severity.

syslog verbose file file-rotation max-file-size <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1..3]  default '1'	Unit: megabytes  This leaf specifies the maximum log file size.

syslog verbose file file-rotation number-of-files <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1..5]  default '1'	This leaf specifies the maximum number of rotated log files

syslog verbose file file-rotation retention <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [24   168   720]	Unit: hours  This leaf specifies the length of time that completed/closed log event files should be stored in the file system before they are deleted. Values must be in hours and could be either 24 (daily), 168 (7*24 weekly), 720 (30*24 monthly)

syslog verbose file file-rotation rollover <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [60   1440   10080]	Unit: minutes  This leaf specifies the length of time that log events should be written to a specific log file. Log events that arrive after the rollover period cause the current log file to be closed and a new log file to be opened. Values must be in minutes and could be either 60(hourly), 1440(daily), 10.080(weekly).

syslog verbose file name <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 31} {pattern = [0-9a-zA-Z\-\_]+\(\.\)?[0-9a-zA-Z\-\_]*}	This leaf specifies the name of the log file.

syslog verbose file pattern-match <A>

**Input Parameters:**

Parameter	Type	Description
A	string	This leaf describes a Posix 1003.2 regular expression string that can be used to select a syslog message for logging. The match is performed on the SYSLOG-MSG field.

## 2.32 system commands

### 2.32.1 Command Tree

```
|-- system clock timezone-name <A>
|-- system clock timezone-utc-offset <A>
|-- system contact <A>
|-- system dns-resolver options attempts <A>
|-- system dns-resolver options ndots <A>
|-- system dns-resolver options timeout <A>
|-- system dns-resolver search <A>
|-- system dns-resolver server <A>
    |-- udp-and-tcp address <B> (Mandatory)
    |-- udp-and-tcp port <B>
|-- system hierarchy-info-enabled <A>
|-- system host-id host-id <A>
|-- system hostname <A>
|-- system location <A>
|-- system management cli transport ssh ip ift enable <A>
|-- system management cli transport ssh use port 22 <A>
|-- system management debug ip ift enable <A>
|-- system management netconf transport ssh ip ift enable <A>
|-- system ntp (Presence)
    |-- enabled <A>
    |-- iburst <A>
    |-- maxdist <A>
    |-- maxpoll <A>
    |-- minpoll <A>
    |-- server <A>
        |-- udp address <B> (Mandatory)
        |-- association-type <B>
        |-- iburst <B>
        |-- maxpoll <B>
        |-- minpoll <B>
        |-- prefer <B>
        |-- udp port <B>
|-- system radius connection-policy accept-or-reject-all <A>
|-- system radius connection-policy accounting-on-reboot <A>
|-- system radius connection-policy domain-name <A>
|-- system radius connection-policy reject-inv-domain <A>
|-- system radius connection-policy reject-no-domain <A>
|-- system radius domain <A>
    |-- authenticator <B> (Mandatory)
|-- system radius options attempts <A>
|-- system radius options timeout <A>
|-- system radius policy <A>
    |-- auth-server-first <B> (Mandatory)
    |-- acct-interval <B>
    |-- acct-server-first <B>
    |-- acct-server-second <B>
    |-- auth-server-second <B>
    |-- calling-station-id-format <B>
```

```

|-- disable-accounting <B>
|-- disable-eap <B>
|-- keep-domain-name <B>
|-- nas-id <B>
|-- nas-ip-address <B>
|-- nas-port-id-syntax <B>
|-- system radius server <A>
|-- udp address <B> (Mandatory)
|-- udp shared-secret <B> (Mandatory)
|-- server-auth (Presence)
|-- pinned-ca-certs <B>
|-- pinned-server-certs <B>
|-- udp authentication-port <B>
|-- system software-upgrade-rollback-on-connectivity-loss enable <A>
|-- system software-upgrade-rollback-on-connectivity-loss time <A>

```

## 2.32.2 Commands

system clock timezone-name <A>

### Input Parameters:

Parameter	Type	Description
A	string {length = 1 .. 255}	The TZ database name to use for the system, such as 'Europe/Stockholm'.

system clock timezone-utc-offset <A>

### Input Parameters:

Parameter	Type	Description
A	int16 [-720   -660   -600   -540   -480   -420   -360   -300   -240   -180   -120   -60   0   60   120   180   240   300   360   420   480   540   600   660   720   780   840]  default '0'	Unit: minutes  The number of minutes to add to UTC time to identify the time zone for this system. For example, 'UTC - 8:00 hours' would be represented as '-480'. Note that automatic daylight saving time adjustment is not provided if this object is used.

system contact <A>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The administrator contact information for the system.</p> <p>A server implementation MAY map this leaf to the sysContact MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and sysContact. The definition of such a mechanism is outside the scope of this document.</p>

system dns-resolver options attempts <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [1 .. 5]  default '2'	The number of times the resolver will send a query to all of its name servers before giving up and returning an error to the calling application.

system dns-resolver options ndots <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [1..15]  default '1'	Sets a threshold for the number of dots which must appear in a name given to res_query(3) (see resolver(3)) before an initial absolute query will be made. The default for n is 1, meaning that if there are any dots in a name, the name will be tried first as an absolute name before any search list elements are appended to it. The value for this option is silently capped to 15.

system dns-resolver options timeout <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [1 .. 30]  default '5'	Unit: seconds  The amount of time the resolver will wait for a response from each remote name server before retrying the query via a different name server.

system dns-resolver search <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 48} {pattern = ((([a-zA-Z0-9_-]([a-zA-Z0-9\_-]) {0,61})?[a-zA-Z0-9]\.)*([a-zA-Z0-9_-]([a-zA-Z0-9\_-]) {0,61})?[a-zA-Z0-9]\.?) \.}	An ordered list of domains to search when resolving a host name.

system dns-resolver server <A> udp-and-tcp address <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the DNS server.
B	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.)\{3\}([0-9][1-9][0-9]1[0-9][0-9] 2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}	The address of the DNS server.
	string	

--	--	--

system dns-resolver server <A> udp-and-tcp port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the DNS server.
B	uint16 [53]  default '53'	The UDP and TCP port number of the DNS server.

system hierarchy-info-enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	This field specifies if hierarchy-info will be included on alarms and IPFIX notifications.

system host-id host-id <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1..524287]	This field specifies the value of the DSLAM Id. This value must be unique a DSLAM Id within an EMAN connected to the same IP edges. When the value is 0, it implies that the parameter has not yet been set and vMAC could not be enabled on any VLAN. The value 0 cannot be configured; it is a factory default value only. For CFM,

		this field must be configured to ensure the uniqueness of the MP MAC address across the network with multiple DSLAMs.
--	--	---

system hostname <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}  default 'isam-reborn'	The name of the host. This name can be a single domain label or the fully qualified domain name of the host.

system location <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The system location.  A server implementation MAY map this leaf to the sysLocation MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and sysLocation. The definition of such a mechanism is outside the scope of this document.

system management cli transport ssh ip\_itf enable <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	Enables/Disables CLI over ssh via any yang configured ipForward interface.

	default 'false'	
--	-----------------	--

system management cli transport ssh use\_port\_22 <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	When this parameter is set, then access to eCLI is via port 22 (iso 2024 or 940 )

system management debug ip\_itf enable <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Enables/disables debug via any yang configured ipForward interface.

system management netconf transport ssh ip\_itf enable <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Enables/Disables netconf over ssh via any yang configured ipForward interface.

system ntp

system ntp enabled <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Indicates that the system should attempt to synchronize the system clock with an NTP server from the 'ntp/server' list.

system ntp iburst <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'true'	Indicates globally whether this server should enable burst synchronization or not.

system ntp maxdist <A>

**Input Parameters:**

Parameter	Type	Description
A	decimal64 [1 .. 16]  default '1.5'	Unit: seconds  Synchronization distance threshold used by the clock selection algorithm. It can be decreased to improve reliability or increased to synchronize clocks on the Moon or planets. Increase maxdist such that maxdist is greater than the root synchronization distance: i.e. $\text{maxdist} > (\text{root-delay} + \text{delay}) / 2 + (\text{root-dispersion} + \text{dispersion} + \text{jitter})$

system ntp maxpoll <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: poll-16sec   poll-32sec   poll-1min4sec   poll-2min8sec   poll-4min16sec   poll-8min32sec   poll-17min4sec   poll-34min8sec   poll-1hour8min16sec   poll-2hour16min32sec   poll-4hour33min4sec   poll-9hour6min8sec   poll-18hour12min16sec   poll-36hour24min32sec  default 'poll-17min4sec'	Specify the global maximum poll intervals for NTP messages, in seconds as a power of two. The maximum poll interval defaults to 10 (1024 s).

system ntp minpoll <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: poll-16sec   poll-32sec   poll-1min4sec   poll-2min8sec   poll-4min16sec   poll-8min32sec   poll-17min4sec   poll-34min8sec   poll-1hour8min16sec   poll-2hour16min32sec   poll-4hour33min4sec   poll-9hour6min8sec   poll-18hour12min16sec   poll-36hour24min32sec  default 'poll-1min4sec'	For dynamic servers, specify the global minimum poll intervals for NTP messages, in seconds as a power of two. The minimum poll interval defaults to 6 (64 s).

system ntp server <A> udp address <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.

B	union union string {pattern = (([0-9]  [1-9][0-9]  1[0-9][0-9]  2[0-4][0-9]  25[0-5])\.\.){3}([0-9]  [1-9][0-9]  1[0-9][0-9]  2[0-4][0-9]  25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	The address of the NTP server.
---	---	--------------------------------

system ntp server <A> association-type <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.
B	enumeration One of: server   peer   pool  default 'server'	The desired association type for this NTP server.

system ntp server <A> iburst <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.
B	boolean  default 'false'	Indicates whether this server should enable burst synchronization or not.

system ntp server <A> maxpoll <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.
B	enumeration One of: poll-16sec   poll-32sec   poll-1min4sec   poll-2min8sec   poll-4min16sec   poll-8min32sec   poll-17min4sec   poll-34min8sec   poll-1hour8min16sec   poll-2hour16min32sec   poll-4hour33min4sec   poll-9hour6min8sec   poll-18hour12min16sec   poll-36hour24min32sec  default 'poll-17min4sec'	Specify the maximum poll intervals for NTP messages, in seconds as a power of two. The maximum poll interval defaults to 10 (1024 s).

system ntp server <A> minpoll <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.
B	enumeration One of: poll-16sec   poll-32sec   poll-1min4sec   poll-2min8sec   poll-4min16sec   poll-8min32sec   poll-17min4sec   poll-34min8sec   poll-1hour8min16sec   poll-2hour16min32sec   poll-4hour33min4sec   poll-9hour6min8sec   poll-18hour12min16sec   poll-36hour24min32sec  default 'poll-1min4sec'	Specify the minimum poll intervals for NTP messages, in seconds as a power of two. The minimum poll interval defaults to 6 (64 s).

system ntp server <A> prefer <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.
B	boolean  default 'false'	Indicates whether this server should be preferred or not.

system ntp server <A> udp port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the NTP server.
B	uint16 [123]  default '123'	The port number of the NTP server.

system radius connection-policy accept-or-reject-all <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: accept-all   reject-all  default 'reject-all'	Only when authentication server is not reachable during 802.1X user session establishment, it helps to either reject or accept all the user sessions.

system radius connection-policy accounting-on-reboot <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	Radius client shall send accounting-on related messages to accounting server associated with 802.1x sessions in case of system restart/reboot event.

system radius connection-policy domain-name <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /sys:system/sys:radius/nokia-radius:domain/nokia-radius:name	name of the domain to use.

system radius connection-policy reject-inv-domain <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	reject user session auth if invalid domain.

system radius connection-policy reject-no-domain <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean  default 'false'	reject user session auth if no domain.

system radius domain <A> authenticator <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the domain.
B	leafref : /sys:system/sys:radius/nokia-radius:policy/ nokia-radius:name	the type of authenticator.

system radius options attempts <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [1..max]  default '2'	The number of times the device will send a query to all of its RADIUS servers before giving up.

system radius options timeout <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [1..max]  default '5'	Unit: seconds  The number of seconds the device will wait for a response from each RADIUS server before trying with a different server.

system radius policy <A> auth-server-first <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string	name of the RADIUS policy.
B	leafref : /sys:system/sys:radius/sys:server/ sys:name	primary RADIUS authentication server.

system radius policy <A> acct-interval <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	uint16 [1..65535]  default '600'	Unit: seconds  NAS will use this interim interval for each interval it will send interim message to accounting server.

system radius policy <A> acct-server-first <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	leafref : /sys:system/sys:radius/sys:server/ sys:name	primary RADIUS accounting server.

system radius policy <A> acct-server-second <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	leafref : /sys:system/sys:radius/sys:server/ sys:name	secondary RADIUS accounting server.

system radius policy <A> auth-server-second <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	leafref : /sys:system/sys:radius/sys:server/ sys:name	secondary RADIUS authentication server.

system radius policy <A> calling-station-id-format <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	enumeration One of: hex-format   ascii-format  default 'hex-format'	Identifies the format of the Calling-Station-Id parameter in RADIUS packets

system radius policy <A> disable-accounting <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	boolean  default 'false'	Indicates to disable accounting when the value is true

system radius policy <A> disable-eap <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	boolean  default 'false'	whether terminate the EAP protocol,that's no EAP will be present between device and RADIUS server.

system radius policy <A> keep-domain-name <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	boolean  default 'false'	whether strip domain name when sending to RADIUS server.

system radius policy <A> nas-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	string	NAS-Identifier used in messages towards RADIUS servers.

system radius policy <A> nas-ip-address <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	union string	The identifying IP Address of the Radius Client on the access node(NAS) requesting

	<pre>{pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9] 2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}</pre> <p>string</p>	<p>the Authentication or Accounting. According to RFC standard, it is the IP Address of the NAS which is requesting authentication of the user, and SHOULD be unique to the NAS within the scope of the RADIUS server. If this leaf is not configured, following values are considered by the Access Node in the mentioned order. i) The IP address of the Access Node inband management interface - either configured statically or assigned dynamically through dhcp. ii) The IP address of the outband interface, if the Access Node works in outband mode. If the aforementioned values not available/ configured, then the NAS-IP-Address AVP field is sent with no value(empty) in the outgoing messages.</p>
--	---	---

system radius policy <A> nas-port-id-syntax <B>

**Input Parameters:**

Parameter	Type	Description
A	string	name of the RADIUS policy.
B	string	NAS-Port-Id used in messages towards RADIUS servers.

system radius server <A> udp address <B>

**Input Parameters:**

Parameter	Type	Description
A	<pre>string {length = 1..64} {pattern = [!#&amp;-Z\^_~]*}</pre>	An arbitrary name for the RADIUS server.
B	<pre>union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9] 2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}</pre>	The address of the RADIUS server.

	string	
	string {length = 1..253}	

system radius server <A> udp shared-secret <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the RADIUS server.
B	string	The shared secret, which is known to both the RADIUS client and server.

system radius server <A> server-auth

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the RADIUS server.

system radius server <A> server-auth pinned-ca-certs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the RADIUS server.
B	leafref	A reference to a list of certificate authority (CA) certificates used by the TLS client

	: /ta:trust-anchors/ta:pinned-certificates/ ta:name	to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
--	--	--

system radius server <A> server-auth pinned-server-certs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the RADIUS server.
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it is an exact match to a configured pinned server certificate.

system radius server <A> udp authentication-port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for the RADIUS server.
B	uint16 [0..65535]  default '1812'	The port number of the RADIUS server.

system software-upgrade-rollback-on-connectivity-loss enable <A>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

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A	boolean  default 'true'	true indicates rollback on connectivity loss, false indicates no rollback.
---	-------------------------------	---

system software-upgrade-rollback-on-connectivity-loss time <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8 [5..120]  default '20'	Unit: minutes  Indicates duration after which application software rollbacks if there is no connectivity, configured time is in addition to the system startup/initialization time

## 2.33 system-security commands

### 2.33.1 Command Tree

```
-- system-security client-authentication supported-authentication-methods password
-- system-security client-authentication supported-authentication-methods publickey
-- system-security lockout-duration <A>
-- system-security lockout-type <A>
-- system-security max-retry-attempts <A>
-- system-security password-policy max-length <A>
-- system-security password-policy min-length <A>
-- system-security password-policy min-num-numeric-char <A>
-- system-security password-policy min-num-special-char <A>
-- system-security password-policy mixed-case <A>
-- system-security server-identity host-key <A>
  |-- public-key local-definition (Presence)
```

### 2.33.2 Commands

system-security client-authentication supported-authentication-methods password

system-security client-authentication supported-authentication-methods publickey

system-security lockout-duration <A>

#### Input Parameters:

Parameter	Type	Description
A	uint32 [0 .. 90]  default '0'	Unit: minutes  The time duration of lockout. During this period, access is not allowed. Lockout duration can be configured either as dynamic or fixed. Default value '0' enables dynamic lockout type. Initial value of dynamic lockout duration is 2 minutes and every subsequent failure increase the lockout-duration for 2 minutes. Maximum lockout duration is restricted to 15 minutes.

system-security logout-type <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: ip-addr   user  default 'ip-addr'	Defines the capability of the system to lockout ip address or users when failed login attempts is reached.

system-security max-retry-attempts <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [3 .. 10]  default '3'	The cumulative number of failed login attempts happen to trigger a lockout. Once a failed login attempt happens, the remaining failed attempts should happen within lockout-duration to trigger a lockout. If failed login attempt, until max-retry-attempt happen after the lockout-duration, then the whole procedure is reset and no lockout happens.

system-security password-policy max-length <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32  default '20'	The maximum length of the password.

system-security password-policy min-length <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32  default '8'	The minimum length of the password.

system-security password-policy min-num-numeric-char <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32  default '1'	The minimum number of numerical characters.

system-security password-policy min-num-special-char <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32  default '1'	The minimum number of special character.

system-security password-policy mixed-case <A>

**Input Parameters:**

Parameter	Type	Description
A	boolean	Both lower and upper case alphabet characters are mandatory.

	default 'true'	
--	----------------	--

system-security server-identity host-key <A> public-key local-definition

**Input Parameters:**

Parameter	Type	Description
A	string	An arbitrary name for this host-key

## 2.34 sztp commands

### 2.34.1 Command Tree

|-- [sztp enabled <A>](#)

### 2.34.2 Commands

sztp enabled <A>

#### Input Parameters:

Parameter	Type	Description
A	boolean  default 'false'	The 'enabled' leaf controls if SZTP bootstrapping is enabled or disabled. The default is 'false' so that, when not enabled, which is most of the time, no configuration is needed.

## 2.35 tca-profiles commands

### 2.35.1 Command Tree

```

|-- tca-profiles transceiver-link-tca-profile <A>
|  |-- rx-power-threshold-high-alarm <B>
|  |-- rx-power-threshold-high-warning <B>
|  |-- rx-power-threshold-low-alarm <B>
|  |-- rx-power-threshold-low-warning <B>
|  |-- tx-bias-threshold-high-alarm <B>
|  |-- tx-bias-threshold-high-warning <B>
|  |-- tx-bias-threshold-low-alarm <B>
|  |-- tx-bias-threshold-low-warning <B>
|  |-- tx-power-threshold-high-alarm <B>
|  |-- tx-power-threshold-high-warning <B>
|  |-- tx-power-threshold-low-alarm <B>
|  |-- tx-power-threshold-low-warning <B>
|-- tca-profiles transceiver-tca-profile <A>
|  |-- temperature-threshold-high-alarm <B>
|  |-- temperature-threshold-high-warning <B>
|  |-- temperature-threshold-low-alarm <B>
|  |-- temperature-threshold-low-warning <B>
|  |-- voltage-threshold-high-alarm <B>
|  |-- voltage-threshold-high-warning <B>
|  |-- voltage-threshold-low-alarm <B>
|  |-- voltage-threshold-low-warning <B>

```

### 2.35.2 Commands

tca-profiles transceiver-link-tca-profile <A> rx-power-threshold-high-alarm <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power above which will trigger a high rx-power alarm .

tca-profiles transceiver-link-tca-profile <A> rx-power-threshold-high-warning <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power above which will trigger a high rx-power warning.

tca-profiles transceiver-link-tca-profile <A> rx-power-threshold-low-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power below which will trigger a low rx-power alarm.

tca-profiles transceiver-link-tca-profile <A> rx-power-threshold-low-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power below which will trigger a low rx-power warning .

tca-profiles transceiver-link-tca-profile <A> tx-bias-threshold-high-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	uint32 [0 .. 250000]	Unit: 1 uA  The bias above which will trigger a high tx-bias alarm .

tca-profiles transceiver-link-tca-profile <A> tx-bias-threshold-high-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	uint32 [0 .. 250000]	Unit: 1 uA  The bias above which will trigger a high tx-bias warning.

tca-profiles transceiver-link-tca-profile <A> tx-bias-threshold-low-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	uint32 [0 .. 250000]	Unit: 1 uA  The bias below which will trigger a low tx-bias alarm.

tca-profiles transceiver-link-tca-profile <A> tx-bias-threshold-low-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	uint32 [0 .. 250000]	Unit: 1 uA  The bias below which will trigger a low tx-bias warning .

tca-profiles transceiver-link-tca-profile <A> tx-power-threshold-high-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power above which will trigger a high tx-power alarm .

tca-profiles transceiver-link-tca-profile <A> tx-power-threshold-high-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power above which will trigger a high tx-power warning.

tca-profiles transceiver-link-tca-profile <A> tx-power-threshold-low-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power below which will trigger a low tx-power alarm.

tca-profiles transceiver-link-tca-profile <A> tx-power-threshold-low-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver-link port.
B	int16 [-1270 .. 200]	Unit: 0.1 dBm  The power below which will trigger a low tx-power warning .

tca-profiles transceiver-tca-profile <A> temperature-threshold-high-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	int32 [-50000 .. 95000]	Unit: 0.001 degrees Celsius  The temperature above which will trigger a high temperature alarm .

tca-profiles transceiver-tca-profile <A> temperature-threshold-high-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	int32 [-50000 .. 95000]	Unit: 0.001 degrees Celsius  The temperature above which will trigger a high temperature warning.

tca-profiles transceiver-tca-profile <A> temperature-threshold-low-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	int32 [-50000 .. 95000]	Unit: 0.001 degrees Celsius  The temperature below which will trigger a low temperature alarm.

tca-profiles transceiver-tca-profile <A> temperature-threshold-low-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	int32 [-50000 .. 95000]	Unit: 0.001 degrees Celsius  The temperature below which will trigger a low temperature warning .

tca-profiles transceiver-tca-profile <A> voltage-threshold-high-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	uint16 [0 .. 65500]	Unit: 100 uV  The voltage above which will trigger a high voltage alarm .

tca-profiles transceiver-tca-profile <A> voltage-threshold-high-warning <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	uint16 [0 .. 65500]	Unit: 100 uV  The voltage above which will trigger a high voltage warning.

tca-profiles transceiver-tca-profile <A> voltage-threshold-low-alarm <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	uint16 [0 .. 65500]	Unit: 100 uV  The voltage below which will trigger a low voltage alarm.

tca-profiles transceiver-tca-profile <A> voltage-threshold-low-warning <B>

**Input Parameters:**

---

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Indicates name of the profile that can be applied to transceiver.
B	uint16 [0 .. 65500]	Unit: 100 uV  The voltage below which will trigger a low voltage warning .

## 2.36 tls commands

### 2.36.1 Command Tree

```

|-- tls (Presence)
    |-- certificate cert-data <A> (Mandatory)
    |-- private-key key-data <A> (Mandatory)
    |-- ca-certificates <A>
        |-- cacert-data <B>
    |-- private-key passphrase <A>

```

### 2.36.2 Commands

tls

tls certificate cert-data <A>

#### Input Parameters:

Parameter	Type	Description
A	binary	The binary data for the public key certificate, in PEM format (text starting with '-----BEGIN ...-----').

tls private-key key-data <A>

#### Input Parameters:

Parameter	Type	Description
A	string	<p>The binary data for the private key, in PEM format (text starting with '-----BEGIN ...-----'). If the key is encrypted, the passphrase for the key must be configured via 'passphrase'.</p> <p>Encrypted keys must be in PKCS#1 format and supported encryption algorithms are: RC2-CBC, DES-CBC, DES-EDE3-CBC, and AES-128-CBC.</p>

		If the key is not encrypted both PKCS#1 and PKCS#8 formats can be used.
--	--	---

tls ca-certificates <A> cacert-data <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	binary	The binary data for the CA certificate, in PEM format (text starting with '-----BEGIN ...-----').

tls private-key passphrase <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The value of this leaf is used as passphrase for the key if it is encrypted.

## 2.37 tm-profiles commands

### 2.37.1 Command Tree

```

|-- tm-profiles bac-entry <A>
|  |-- max-queue-size <B> (Mandatory)
|  |-- red max-probability <B>
|  |-- red max-threshold <B>
|  |-- red min-threshold <B>
|  |-- taildrop max-threshold <B>
|  |-- wred color green max-probability <B>
|  |-- wred color green max-threshold <B>
|  |-- wred color green min-threshold <B>
|  |-- wred color red max-probability <B>
|  |-- wred color red max-threshold <B>
|  |-- wred color red min-threshold <B>
|  |-- wred color yellow max-probability <B>
|  |-- wred color yellow max-threshold <B>
|  |-- wred color yellow min-threshold <B>
|  |-- wtaildrop color green max-threshold <B>
|  |-- wtaildrop color red max-threshold <B>
|  |-- wtaildrop color yellow max-threshold <B>
|-- tm-profiles shaper-profile <A>
|  |-- single-token-bucket pbs <B>
|  |-- single-token-bucket pir <B>
|-- tm-profiles tc-id-2-queue-id-mapping-profile <A>
|  |-- mapping-entry <B>
|     |-- local-queue-id <C> (Mandatory)

```

### 2.37.2 Commands

tm-profiles bac-entry <A> max-queue-size <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ ~]*}	The name of a BAC entry.
B	uint32	Unit: bytes  The maximum queue length.

tm-profiles bac-entry <A> red max-probability <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a BAC entry.
B	uint8 [0..100]	The maximum discard probability of frames before the maximum threshold is reached.

tm-profiles bac-entry <A> red max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles bac-entry <A> red min-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold from which the system begins to discard incoming frames in a random way.  The value is a percentage to be calculated on the value of the leaf max-queue-size of the queue on which the BAC is applied.

tm-profiles bac-entry <A> taildrop max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles bac-entry <A> wred color green max-probability <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	The name of a BAC entry.
B	uint8 [0..100]	The maximum discard probability of frames before the maximum threshold is reached.

tm-profiles bac-entry <A> wred color green max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles bac-entry <A> wred color green min-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold from which the system begins to discard incoming frames in a random way.  The value is a percentage to be calculated on the value of the leaf max-queue-size of the queue on which the BAC is applied.

tm-profiles bac-entry <A> wred color red max-probability <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The maximum discard probability of frames before the maximum threshold is reached.

tm-profiles bac-entry <A> wred color red max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles bac-entry <A> wred color red min-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold from which the system begins to discard incoming frames in a random way.  The value is a percentage to be calculated on the value of the leaf max-queue-size of the queue on which the BAC is applied.

tm-profiles bac-entry <A> wred color yellow max-probability <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The maximum discard probability of frames before the maximum threshold is reached.

tm-profiles bac-entry <A> wred color yellow max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles bac-entry <A> wred color yellow min-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold from which the system begins to discard incoming frames in a random way.  The value is a percentage to be calculated on the value of the leaf max-queue-size of the queue on which the BAC is applied.

tm-profiles bac-entry <A> wtaildrop color green max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles bac-entry <A> wtaildrop color red max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.

		The value is a percentage to be calculated on the value of the leaf max-queue-size.
--	--	---

tm-profiles bac-entry <A> wtaidrop color yellow max-threshold <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a BAC entry.
B	uint8 [0..100]	The threshold to discard all incoming frames.  The value is a percentage to be calculated on the value of the leaf max-queue-size.

tm-profiles shaper-profile <A> single-token-bucket pbs <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ -~]*}	The name of a shaper profile.
B	uint32	Unit: bytes  The Peak Burst Size (PBS), in bytes.

tm-profiles shaper-profile <A> single-token-bucket pir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64}	The name of a shaper profile.

	{pattern = [ --]*}	
B	uint32	Unit: kbits per second  The Peak Information Rate (PIR), in kilobits per second.

tm-profiles tc-id-2-queue-id-mapping-profile <A> mapping-entry <B> local-queue-id <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of a traffic-class-id to queue-id mapping profile.
B	uint32 [0..7]	A traffic-class-id.
C	uint32 [0..7]	The identification of a queue locally within a parent node context.

## 2.38 trust-anchors commands

### 2.38.1 Command Tree

```

|-- trust-anchors pinned-certificates <A>
|  |-- description <B>
|  |-- pinned-certificate <B>
|     |-- cert <C> (Mandatory)

```

### 2.38.2 Commands

trust-anchors pinned-certificates <A> description <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this list of pinned certificates.
B	string	An arbitrary description for this list of pinned certificates.

trust-anchors pinned-certificates <A> pinned-certificate <B> cert <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this list of pinned certificates.
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	An arbitrary name for this pinned certificate. The name must be unique across all lists of pinned certificates (not just this list) so that leafrefs from another module can resolve to unique values.
C	binary	The binary certificate data for this certificate.

## 2.39 user commands

### 2.39.1 Command Tree

```
|-- user <A>
  |-- alias <B>
    |-- expansion <C> (Mandatory)
  |-- description <B>
  |-- session autowizard <B>
  |-- session complete-on-space <B>
  |-- session devtools <B>
  |-- session display-level <B>
  |-- session history <B>
  |-- session idle-timeout <B>
  |-- session ignore-leading-space <B>
  |-- session paginate <B>
  |-- session prompt1 <B>
  |-- session prompt2 <B>
  |-- session show-defaults <B>
```

### 2.39.2 Commands

user <A> alias <B> expansion <C>

#### Input Parameters:

Parameter	Type	Description
A	string	Description not available.
B	string	Name of the command alias. An alias name can be a single word or multiple words joined by a dash (-).
C	string	Original command syntax. Valid abbreviations of the original command syntax can be entered for the command-syntax argument.

user <A> description <B>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

---

A	string	Description not available.
B	string	User description

user <A> session autowizard <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	boolean	Automatically query user for mandatory elems

user <A> session complete-on-space <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	boolean	Enable/disable completion on space

user <A> session devtools <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	boolean	Enable/disable development tools

user <A> session display-level <B>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

---

A	string	Description not available.
B	uint64 [1 .. 64]	Max depth to show when displaying configuration

user <A> session history <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	uint64 [0 .. 8192]	History size

user <A> session idle-timeout <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	uint64 [0 .. 8192]	CLI idle-timeout in seconds

user <A> session ignore-leading-space <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	boolean	Ignore leading whitespace

user <A> session paginate <B>

**Input Parameters:**

---

Parameter	Type	Description
A	string	Description not available.
B	boolean	Paginate output from CLI commands

user <A> session prompt1 <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	string	Prompt for operational mode

user <A> session prompt2 <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	string	Prompt for configure mode

user <A> session show-defaults <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	boolean	Show default values when showing the configuration

## 2.40 users commands

### 2.40.1 Command Tree

```

|-- users user <A>
|   |-- authentication password <B> (Mandatory)
|   |-- authentication authorized-key algorithm <B>
|   |-- authentication authorized-key public-key <B>
|   |-- authentication homedir <B>
|   |-- login disable <B>
|   |-- login new-password-at-login <B>
|   |-- login password-expiry <B>
|   |-- login password-expiry-notification <B>
|   |-- login password-history-policy <B>

```

### 2.40.2 Commands

users user <A> authentication password <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	string	User's password

users user <A> authentication authorized-key algorithm <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	enumeration One of: ssh-rsa   ssh-dss	Identifies the key's algorithm. More specifically, this leaf specifies how the 'public-key' binary leaf is encoded.

users user <A> authentication authorized-key public-key <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	binary	A binary that contains the value of the public key. The interpretation of the content is defined by the key algorithm. For example, a DSA key is an integer, an RSA key is represented as RSAPublicKey as defined in RFC 8017, and an Elliptic Curve Cryptography (ECC) key is represented using the 'publicKey' described in RFC 5915.

users user <A> authentication homedir <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	string  default '/isam/logs/syslog'	User's home directory.

users user <A> login disable <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	boolean	Defines the capability of the system to disable a user account.

	default 'false'	
--	-----------------	--

users user <A> login new-password-at-login <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	boolean  default 'true'	Enable/Disable prompting a user to change password at next CLI login.

users user <A> login password-expiry <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	uint32 [0..365]  default '0'	Password ageing time, the time in days within which the password expiration happens. If its value is zero password will not age.

users user <A> login password-expiry-notification <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11}	Name of user.

	{pattern = [_+0-9a-zA-Z]*}	
B	uint32 [0..30]  default '0'	This parameter will set the days prior to password ageing.

users user <A> login password-history-policy <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	uint32 [0..15]  default '3'	Password history length, the number of recently used password.

## 2.41 virtual-network-functions commands

### 2.41.1 Command Tree

```
|-- virtual-network-functions virtual-network-function <A>
   |-- address <B>
   |-- type <B>
```

### 2.41.2 Commands

virtual-network-functions virtual-network-function <A> address <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [0-9a-zA-Z -]*}	A name for the virtual network function.
B	string	The URI to connect to.

virtual-network-functions virtual-network-function <A> type <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [0-9a-zA-Z -]*}	A name for the virtual network function.
B	string {length = 1..32} {pattern = [0-9a-zA-Z -]*}	A type of the virtual network function.

## 2.42 vsi-vector-profiles commands

### 2.42.1 Command Tree

```

|-- vsi-vector-profiles vsi-vector-profile <A>
  |-- frame-processing-profile-ref <B> (Mandatory)
  |-- tag-0 vlan-id <B> (Mandatory)
  |-- tag-1 vlan-id <B> (Mandatory)
  |-- interface-usage (Presence)
    |-- interface-usage <B>

```

### 2.42.2 Commands

vsi-vector-profiles vsi-vector-profile <A> frame-processing-profile-ref <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	leafref : /bbf-frameproc:frame-processing-profiles/ bbf-frameproc:frame-processing-profile/bbf- frameproc:name	.

vsi-vector-profiles vsi-vector-profile <A> tag-0 vlan-id <B>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint16 [0..4094]	When: /bbf-frameproc:frame-processing-profiles/bbf-frameproc:frame-processing-profile[bbf-frameproc:name = current()/../../bbf-vsi-vctr-fpp:frame-processing-profile-ref]/bbf-frameproc:match-criteria/bbf-frameproc:tag[bbf-frameproc:index = 0]/bbf-frameproc:vlan-id = "parameter-vlan-id"

		Allowed VLAN-IDs.
--	--	-------------------

vsi-vector-profiles vsi-vector-profile <A> tag-1 vlan-id <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.
B	uint16 [0..4094]	When: /bbf-frameproc:frame-processing-profiles/bbf-frameproc:frame-processing-profile[bbf-frameproc:name = current()/../../bbf-vsi-vctr-fpp:frame-processing-profile-ref]/bbf-frameproc:match-criteria/bbf-frameproc:tag[bbf-frameproc:index = 1]/bbf-frameproc:vlan-id = "parameter-vlan-id"  Allowed VLAN-IDs.

vsi-vector-profiles vsi-vector-profile <A> interface-usage

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.

vsi-vector-profiles vsi-vector-profile <A> interface-usage interface-usage <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [ --]*}	The name of the profile.

---

B	<p>enumeration</p> <p>One of:</p> <p>user-port   network-port   subtended-node-port</p>	<p>Identifies the position of an interface in the network.</p>
---	---	--

## 3. YANG Operational Commands

### 3.1 alarms commands

#### 3.1.1 Command Tree

```
|-- show alarms alarm-inventory
|   |-- alarm-type <A><B>
|       |-- alarm-type-id
|       |-- alarm-type-qualifier
|       |-- description
|       |-- will-clear
|       |-- severity-level
|-- show alarms alarm-list
|   |-- alarm <A><B><C>
|       |-- resource
|       |-- alarm-type-id
|       |-- alarm-type-qualifier
|       |-- alarm-text
|       |-- is-cleared
|       |-- last-changed
|       |-- perceived-severity
|       |-- time-created
|       |-- hierarchy-meta-info
|-- last-changed
|-- number-of-alarms
|-- show alarms summary
|   |-- alarm-summary <A>
|       |-- severity
|       |-- total
```

#### 3.1.2 Commands

show alarms alarm-inventory

##### Output Parameters:

Parameter	Type	Description
<a href="#">alarm-type</a>	Not applicable	Reference to subtree parameters

show alarms alarm-inventory alarm-type <A><B>

##### Input Parameters:

Parameter	Type	Description
A	identityref One of: ac-power-loss   all-freq-fail   all-phase-fail   backplane-data-link-failure   bat-failure   battery-low   battery-missing   battery- not-active   battery-temperature-out-of- range   battery-temperature-sensor-missing   bbf-alarm-type-id   bbf-security-alarm- type-id   bbf-threshold-crossing-alarm- type-id   bits-fail   bits-out-shutoff   board- capability-mismatch   board-communication- failure   board-initialization-failure   board- inserted-in-wrong-shelf   board-presence- mismatch   board-property-mismatch   board-reset-protection   board-sensor- failure   board-software-incompatibility   board-temperature-shutdown   ca-cert- expiration   certificate-alarms   chassis- property-mismatch-alarm   cipher-alarms   communications-alarm   completed-sztp- process-requires-closure   connection- failure   cpu-usage-exceeding   disk- usage-exceeding   end-cert-expiration   environmental-alarm   eqpt-environmental- alarms   equipment-alarm   est-connectivity- or-operations-failure   est-end-cert- expiration   est-server   eth-bp-alarms   ethsfp-alarms   expiration   export-interval- inadequate   external-alarm   external- alarm-1   external-alarms   fan-alarms   fan-failure   fan-tray-missing   freq-port   gnss-fail   handshake-failure   handshake- failure   inband-duplicate-ipv6-address   internal-clk-fail   ipfix-connectivity-alarm   ipfix-service-alarm   keystore-alarms   l2forwarding   l2forwarding-duplicate- mac-learning   l2forwarding-mac-learning- collision   l2forwarding-mac-learning- collision-atl   lag-alarm   lag-alarm-type   lag- group-down   lag-sub-group-switch-over- failed   lag-sub-group-threshold-reached   license   license-alarms   license-key- exhausted   license-server-connection-lost   los   loss-of-connection   memory-usage- exceeding   mgntinterface   missing-key- pair   multiple-fan-alarm   nokia-alarms   non-recommended-cipher   ntp-alarms   ntp- server-cannot-respond   ntpserver   onu- alarm   phase-port   pinned-cert-expiration   power-circuit-failure   power-supply-	The statically defined alarm type identifier for this possible alarm.

	unit   power-supply-unit-failure   power-supply-unit-not-active   power-supply-unit-voltage-high   power-supply-unit-voltage-low   processing-error-alarm   ptp-fail   quality-of-service-alarm   rpf-base-alarm   sealed-box-open   secure-transport-alarms   sensor-temperature-critical   sensor-temperature-high   sensor-temperature-low   sfp-extraction-alarm   single-fan-alarm   sw-alarms   sw-missing   sync-alarms   synce-fail   syslog   system-maximum-mac-exceeded   sztp-alarms   temperature   transceiver-alarm   transceiver-initialization-failure-alarm   transceiver-link-rx-power   transceiver-link-tx-bias   transceiver-link-tx-fault   transceiver-link-tx-power   transceiver-not-accessible-alarm   transceiver-presence-mismatch-alarm   transceiver-property-mismatch-alarm   transceiver-sensor-temperature-high   transceiver-sensor-temperature-high-warning   transceiver-sensor-temperature-low   transceiver-sensor-temperature-low-warning   transceiver-supply-voltage   unsupported-transceiver   water-seepage-in-box   zero-touch-provision-alarms	
B	string	The optionally dynamically defined alarm type identifier for this possible alarm.

**Output Parameters:**

Parameter	Type	Description
alarm-type-id	identityref One of: ac-power-loss   all-freq-fail   all-phase-fail   backplane-data-link-failure   bat-failure   battery-low   battery-missing   battery-not-active   battery-temperature-out-of-range   battery-temperature-sensor-missing   bbf-alarm-type-id   bbf-security-alarm-type-id   bbf-threshold-crossing-alarm-type-id   bits-fail   bits-out-shutoff   board-capability-mismatch   board-communication-failure   board-initialization-failure   board-inserted-in-wrong-shelf   board-presence-mismatch   board-property-mismatch   board-reset-protection   board-sensor-failure   board-software-incompatibility   board-temperature-shutdown   ca-cert-expiration   certificate-alarms   chassis-	The statically defined alarm type identifier for this possible alarm.

property-mismatch-alarm | cipher-alarms |  
 communications-alarm | completed-sztp-  
 process-requires-closure | connection-  
 failure | cpu-usage-exceeding | disk-  
 usage-exceeding | end-cert-expiration |  
 environmental-alarm | eqpt-environmental-  
 alarms | equipment-alarm | est-connectivity-  
 or-operations-failure | est-end-cert-  
 expiration | est-server | eth-bp-alarms |  
 ethsfp-alarms | expiration | export-interval-  
 inadequate | external-alarm | external-  
 alarm-1 | external-alarms | fan-alarms |  
 fan-failure | fan-tray-missing | freq-port |  
 gnss-fail | handshake-failure | handshake-  
 failure | inband-duplicate-ipv6-address |  
 internal-clk-fail | ipfix-connectivity-alarm  
 | ipfix-service-alarm | keystore-alarms  
 | l2forwarding | l2forwarding-duplicate-  
 mac-learning | l2forwarding-mac-learning-  
 collision | l2forwarding-mac-learning-  
 collision-atl | lag-alarm | lag-alarm-type | lag-  
 group-down | lag-sub-group-switch-over-  
 failed | lag-sub-group-threshold-reached  
 | license | license-alarms | license-key-  
 exhausted | license-server-connection-lost  
 | los | loss-of-connection | memory-usage-  
 exceeding | mgntinterface | missing-key-  
 pair | multiple-fan-alarm | nokia-alarms |  
 non-recommended-cipher | ntp-alarms | ntp-  
 server-cannot-respond | ntpserver | onu-  
 alarm | phase-port | pinned-cert-expiration  
 | power-circuit-failure | power-supply-  
 unit | power-supply-unit-failure | power-  
 supply-unit-not-active | power-supply-unit-  
 voltage-high | power-supply-unit-voltage-  
 low | processing-error-alarm | ptp-fail |  
 quality-of-service-alarm | rpf-base-alarm |  
 sealed-box-open | secure-transport-alarms  
 | sensor-temperature-critical | sensor-  
 temperature-high | sensor-temperature-  
 low | sfp-extraction-alarm | single-fan-alarm  
 | sw-alarms | sw-missing | sync-alarms |  
 synce-fail | syslog | system-maximum-mac-  
 exceeded | sztp-alarms | temperature |  
 transceiver-alarm | transceiver-initialization-  
 failure-alarm | transceiver-link-rx-power  
 | transceiver-link-tx-bias | transceiver-  
 link-tx-fault | transceiver-link-tx-power  
 | transceiver-not-accessible-alarm |  
 transceiver-presence-mismatch-alarm  
 | transceiver-property-mismatch-alarm  
 | transceiver-sensor-temperature-high

	transceiver-sensor-temperature-high-warning   transceiver-sensor-temperature-low   transceiver-sensor-temperature-low-warning   transceiver-supply-voltage   unsupported-transceiver   water-seepage-in-box   zero-touch-provision-alarms	
alarm-type-qualifier	string	The optionally dynamically defined alarm type identifier for this possible alarm.
description	string	A description of the possible alarm. It SHOULD include information on possible underlying root causes and corrective actions.
will-clear	boolean	<p>This leaf tells the operator if the alarm will be cleared when the correct corrective action has been taken. Implementations SHOULD strive for detecting the cleared state for all alarm types.</p> <p>If this leaf is 'true', the operator can monitor the alarm until it becomes cleared after the corrective action has been taken.</p> <p>If this leaf is 'false', the operator needs to validate that the alarm is no longer active using other mechanisms. Alarms can lack a corresponding clear due to missing instrumentation or no logical corresponding clear state.</p>
severity-level	enumeration One of: indeterminate   warning   minor   major   critical	This leaf-list indicates the possible severity levels of this alarm type. Note well that 'clear' is not part of the severity type. In general, the severity level should be defined by the instrumentation based on the dynamic state, rather than being defined statically by the alarm type, in order to provide a relevant severity level based on dynamic state and context. However, most alarm types have a defined set of possible severity levels, and this should be provided here.

show alarms alarm-list

#### Output Parameters:

Parameter	Type	Description
-----------	------	-------------

<a href="#">alarm</a>	Not applicable	Reference to subtree parameters
last-changed	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	A timestamp when the alarm list was last changed. The value can be used by a manager to initiate an alarm resynchronization procedure.
number-of-alarms	uint32	This object shows the total number of alarms in the system, i.e., the total number of entries in the alarm list.

show alarms alarm-list alarm <A><B><C>

#### Input Parameters:

Parameter	Type	Description
A	union instance-identifier  string {pattern = (([0-1](\.[1-3]?[0-9])) (2\.(0 ([1-9]\d*))))(\.(0 ([1-9]\d*)))*}  string  string	The alarming resource. See also 'alt-resource'. This could be, for example, a reference to the alarming interface
B	identityref One of: ac-power-loss   all-freq-fail   all-phase-fail   backplane-data-link-failure   bat-failure   battery-low   battery-missing   battery-not-active   battery-temperature-out-of-range   battery-temperature-sensor-missing   bbf-alarm-type-id   bbf-security-alarm-type-id   bbf-threshold-crossing-alarm-type-id   bits-fail   bits-out-shutoff   board-capability-mismatch   board-communication-failure   board-initialization-failure   board-inserted-in-wrong-shelf   board-presence-mismatch   board-property-mismatch   board-reset-protection   board-sensor-failure   board-software-incompatibility   board-temperature-shutdown   ca-cert-expiration   certificate-alarms   chassis-property-mismatch-alarm   cipher-alarms   communications-alarm   completed-sztp-process-requires-closure   connection-failure   cpu-usage-exceeding   disk-	This leaf and the leaf 'alarm-type-qualifier' together provide a unique identification of the alarm type.

usage-exceeding | end-cert-expiration |  
environmental-alarm | eqpt-environmental-  
alarms | equipment-alarm | est-connectivity-  
or-operations-failure | est-end-cert-  
expiration | est-server | eth-bp-alarms |  
ethsfp-alarms | expiration | export-interval-  
inadequate | external-alarm | external-  
alarm-1 | external-alarms | fan-alarms |  
fan-failure | fan-tray-missing | freq-port |  
gnss-fail | handshake-failure | handshake-  
failure | inband-duplicate-ipv6-address |  
internal-clk-fail | ipfix-connectivity-alarm  
| ipfix-service-alarm | keystore-alarms  
| l2forwarding | l2forwarding-duplicate-  
mac-learning | l2forwarding-mac-learning-  
collision | l2forwarding-mac-learning-  
collision-atl | lag-alarm | lag-alarm-type | lag-  
group-down | lag-sub-group-switch-over-  
failed | lag-sub-group-threshold-reached  
| license | license-alarms | license-key-  
exhausted | license-server-connection-lost  
| los | loss-of-connection | memory-usage-  
exceeding | mgntinterface | missing-key-  
pair | multiple-fan-alarm | nokia-alarms |  
non-recommended-cipher | ntp-alarms | ntp-  
server-cannot-respond | ntpserver | onu-  
alarm | phase-port | pinned-cert-expiration  
| power-circuit-failure | power-supply-  
unit | power-supply-unit-failure | power-  
supply-unit-not-active | power-supply-unit-  
voltage-high | power-supply-unit-voltage-  
low | processing-error-alarm | ptp-fail |  
quality-of-service-alarm | rpf-base-alarm |  
sealed-box-open | secure-transport-alarms  
| sensor-temperature-critical | sensor-  
temperature-high | sensor-temperature-  
low | sfp-extraction-alarm | single-fan-alarm  
| sw-alarms | sw-missing | sync-alarms |  
synce-fail | syslog | system-maximum-mac-  
exceeded | sztp-alarms | temperature |  
transceiver-alarm | transceiver-initialization-  
failure-alarm | transceiver-link-rx-power  
| transceiver-link-tx-bias | transceiver-  
link-tx-fault | transceiver-link-tx-power  
| transceiver-not-accessible-alarm |  
transceiver-presence-mismatch-alarm  
| transceiver-property-mismatch-alarm  
| transceiver-sensor-temperature-high  
| transceiver-sensor-temperature-high-  
warning | transceiver-sensor-temperature-  
low | transceiver-sensor-temperature-  
low-warning | transceiver-supply-voltage |

	unsupported-transceiver   water-seepage-in-box   zero-touch-provision-alarms	
C	string	This leaf is used when the 'alarm-type-id' leaf cannot uniquely identify the alarm type. Normally, this is not the case, and this leaf is the empty string.

**Output Parameters:**

Parameter	Type	Description
resource	union instance-identifier  string {pattern = (([0-1](\[1-3]?[0-9])) (2\[0]([1-9]d*)))\[0]([1-9]d*))*)}  string  string	The alarming resource. See also 'alt-resource'. This could be, for example, a reference to the alarming interface
alarm-type-id	identityref One of: ac-power-loss   all-freq-fail   all-phase-fail   backplane-data-link-failure   bat-failure   battery-low   battery-missing   battery-not-active   battery-temperature-out-of-range   battery-temperature-sensor-missing   bbf-alarm-type-id   bbf-security-alarm-type-id   bbf-threshold-crossing-alarm-type-id   bits-fail   bits-out-shutoff   board-capability-mismatch   board-communication-failure   board-initialization-failure   board-inserted-in-wrong-shelf   board-presence-mismatch   board-property-mismatch   board-reset-protection   board-sensor-failure   board-software-incompatibility   board-temperature-shutdown   ca-cert-expiration   certificate-alarms   chassis-property-mismatch-alarm   cipher-alarms   communications-alarm   completed-sztp-process-requires-closure   connection-failure   cpu-usage-exceeding   disk-usage-exceeding   end-cert-expiration   environmental-alarm   eqpt-environmental-alarms   equipment-alarm   est-connectivity-or-operations-failure   est-end-cert-expiration   est-server   eth-bp-alarms   ethsfp-alarms   expiration   export-interval-inadequate   external-alarm   external-	This leaf and the leaf 'alarm-type-qualifier' together provide a unique identification of the alarm type.

	alarm-1   external-alarms   fan-alarms   fan-failure   fan-tray-missing   freq-port   gnss-fail   handshake-failure   handshake- failure   inband-duplicate-ipv6-address   internal-clk-fail   ipfix-connectivity-alarm   ipfix-service-alarm   keystore-alarms   l2forwarding   l2forwarding-duplicate- mac-learning   l2forwarding-mac-learning- collision   l2forwarding-mac-learning- collision-atl   lag-alarm   lag-alarm-type   lag- group-down   lag-sub-group-switch-over- failed   lag-sub-group-threshold-reached   license   license-alarms   license-key- exhausted   license-server-connection-lost   los   loss-of-connection   memory-usage- exceeding   mgntinterface   missing-key- pair   multiple-fan-alarm   nokia-alarms   non-recommended-cipher   ntp-alarms   ntp- server-cannot-respond   ntpserver   onu- alarm   phase-port   pinned-cert-expiration   power-circuit-failure   power-supply- unit   power-supply-unit-failure   power- supply-unit-not-active   power-supply-unit- voltage-high   power-supply-unit-voltage- low   processing-error-alarm   ptp-fail   quality-of-service-alarm   rpf-base-alarm   sealed-box-open   secure-transport-alarms   sensor-temperature-critical   sensor- temperature-high   sensor-temperature- low   sfp-extraction-alarm   single-fan-alarm   sw-alarms   sw-missing   sync-alarms   synce-fail   syslog   system-maximum-mac- exceeded   sztp-alarms   temperature   transceiver-alarm   transceiver-initialization- failure-alarm   transceiver-link-rx-power   transceiver-link-tx-bias   transceiver- link-tx-fault   transceiver-link-tx-power   transceiver-not-accessible-alarm   transceiver-presence-mismatch-alarm   transceiver-property-mismatch-alarm   transceiver-sensor-temperature-high   transceiver-sensor-temperature-high- warning   transceiver-sensor-temperature- low   transceiver-sensor-temperature- low-warning   transceiver-supply-voltage   unsupported-transceiver   water-seepage-in- box   zero-touch-provision-alarms	
alarm-type-qualifier	string	This leaf is used when the 'alarm-type-id' leaf cannot uniquely identify the alarm type. Normally, this is not the case, and this leaf is the empty string.

alarm-text	string	The last reported alarm text. This text should contain information for an operator to be able to understand the problem and how to resolve it.
is-cleared	boolean	Indicates the current clearance state of the alarm. An alarm might toggle from active alarm to cleared alarm and back to active again.
last-changed	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	A timestamp when the 'status-change' or 'operator-state-change' list was last changed.
perceived-severity	enumeration One of: indeterminate   warning   minor   major   critical	The last severity of the alarm.  If an alarm was raised with severity 'warning' but later changed to 'major', this leaf will show 'major'.
time-created	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	The timestamp when this alarm entry was created. This represents the first time the alarm appeared; it can also represent that the alarm reappeared after a purge. Further state changes of the same alarm do not change this leaf; these changes will update the 'last-changed' leaf.
hierarchy-meta-info	string	This leaf provides information on the interface type or hardware class, along with the configured interface/hardware component metadata.

show alarms summary

**Output Parameters:**

Parameter	Type	Description
<a href="#">alarm-summary</a>	Not applicable	Reference to subtree parameters

show alarms summary alarm-summary <A>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

---

A	enumeration One of: indeterminate   warning   minor   major   critical	Alarm summary for this severity level.
---	--	--

**Output Parameters:**

Parameter	Type	Description
severity	enumeration One of: indeterminate   warning   minor   major   critical	Alarm summary for this severity level.
total	uint32	Total number of alarms of this severity level.

## 3.2 applications commands

### 3.2.1 Command Tree

```
|-- show applications active-applications <A>
    |-- app-name
    |-- modules <B>
        |-- mod-name
        |-- level
```

### 3.2.2 Commands

show applications active-applications <A>

#### Input Parameters:

Parameter	Type	Description
A	string	Provide the available for logging applications.

#### Output Parameters:

Parameter	Type	Description
app-name	string	Provide the available for logging applications.
<a href="#">modules</a>	Not applicable	Reference to subtree parameters

show applications active-applications <A> modules <B>

#### Input Parameters:

Parameter	Type	Description
A	string	Provide the available for logging applications.
B	string	This leaf represents an internal logger.

#### Output Parameters:

Parameter	Type	Description
-----------	------	-------------

---

mod-name	string	This leaf represents an internal logger.
level	enumeration One of: none   critical   error   warning   info   debug	This leaf specifies the syslog message severity.

## 3.3 certificate commands

### 3.3.1 Command Tree

```
|-- show certificate certificates-state
|-- end-user-certificates
|   |-- end-certs <A>
|       |-- feature
|       |-- certificates
|           |-- certificate <B>
|               |-- cert
|               |-- ca-flag
|               |-- issuer
|               |-- key-encryption
|               |-- key-size
|               |-- signature
|               |-- subject
|               |-- valid-from
|               |-- valid-to
|-- est-certificates
|   |-- est-profiles <A>
|       |-- profile
|       |-- ca-certificates
|           |-- ca-certificate <B>
|               |-- cert
|               |-- ca-flag
|               |-- issuer
|               |-- key-encryption
|               |-- key-size
|               |-- signature
|               |-- subject
|               |-- valid-from
|               |-- valid-to
|       |-- feature
|   |-- end-user-certificate
|       |-- ca-flag
|       |-- cert
|       |-- feature
|       |-- issuer
|       |-- key-encryption
|       |-- key-size
|       |-- signature
|       |-- subject
|       |-- valid-from
|       |-- valid-to
|-- pinned-certificates
|   |-- pinned-certificate <A>
|       |-- trust-list
|       |-- certificates
|           |-- certificate <B>
|               |-- cert
|               |-- ca-flag
```

```

|-- issuer
|-- key-encryption
|-- key-size
|-- signature
|-- subject
|-- valid-from
|-- valid-to

```

### 3.3.2 Commands

show certificate certificates-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">end-user-certificates</a>	Not applicable	Reference to subtree parameters
<a href="#">est-certificates</a>	Not applicable	Reference to subtree parameters
<a href="#">pinned-certificates</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state end-user-certificates

#### Output Parameters:

Parameter	Type	Description
<a href="#">end-certs</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state end-user-certificates end-certs <A>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	feature that uses the certificate

#### Output Parameters:

Parameter	Type	Description
feature	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	feature that uses the certificate
<a href="#">certificates</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state end-user-certificates end-certs <A> certificates

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	feature that uses the certificate

**Output Parameters:**

Parameter	Type	Description
<a href="#">certificate</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state end-user-certificates end-certs <A> certificates certificate <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	feature that uses the certificate
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	certificate name

**Output Parameters:**

Parameter	Type	Description
cert	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	certificate name

ca-flag	boolean	CA Info.
issuer	string	Issuer.
key-encryption	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Key Type.
key-size	uint32	Key Bits.
signature	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Signature Algorithm.
subject	string	Subject.
valid-from	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Validity start date.
valid-to	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Expiration date.

show certificate certificates-state est-certificates

**Output Parameters:**

Parameter	Type	Description
<a href="#">est-profiles</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state est-certificates est-profiles <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	profile name

**Output Parameters:**

Parameter	Type	Description
profile	string	profile name

	{length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	
<a href="#">ca-certificates</a>	Not applicable	Reference to subtree parameters
<a href="#">end-user-certificate</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state est-certificates est-profiles <A> ca-certificates

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	profile name

**Output Parameters:**

Parameter	Type	Description
<a href="#">ca-certificate</a>	Not applicable	Reference to subtree parameters
feature	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	CA Feature leaf list.

show certificate certificates-state est-certificates est-profiles <A> ca-certificates ca-certificate  
<B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	profile name
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	certificate name

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

cert	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	certificate name
ca-flag	boolean	CA Info.
issuer	string	Issuer.
key-encryption	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key Type.
key-size	uint32	Key Bits.
signature	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Signature Algorithm.
subject	string	Subject.
valid-from	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+~]\d{2}:\d{2})}	Validity start date.
valid-to	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+~]\d{2}:\d{2})}	Expiration date.

show certificate certificates-state est-certificates est-profiles <A> end-user-certificate

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	profile name

**Output Parameters:**

Parameter	Type	Description
ca-flag	boolean	CA Info.
cert	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	certificate name
feature	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Feature leaf list.
issuer	string	Issuer.

key-encryption	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Key Type.
key-size	uint32	Key Bits.
signature	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Signature Algorithm.
subject	string	Subject.
valid-from	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\. \d+)?(Z [\+-]\d{2}:\d{2})}	Validity start date.
valid-to	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\. \d+)?(Z [\+-]\d{2}:\d{2})}	Expiration date.

show certificate certificates-state pinned-certificates

**Output Parameters:**

Parameter	Type	Description
<a href="#">pinned-certificate</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state pinned-certificates pinned-certificate <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Name of trustore list

**Output Parameters:**

Parameter	Type	Description
trust-list	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Name of trustore list
<a href="#">certificates</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state pinned-certificates pinned-certificate <A> certificates

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Name of trustore list

**Output Parameters:**

Parameter	Type	Description
<a href="#">certificate</a>	Not applicable	Reference to subtree parameters

show certificate certificates-state pinned-certificates pinned-certificate <A> certificates  
certificate <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	Name of trustore list
B	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	certificate name

**Output Parameters:**

Parameter	Type	Description
cert	string {length = 1..64} {pattern = [!#&-Z\^_-z ~]*}	certificate name
ca-flag	boolean	CA Info.
issuer	string	Issuer.
key-encryption	string {length = 1..64}	Key Type.

	{pattern = [!#&-Z <sup>^</sup> _~]*}	
key-size	uint32	Key Bits.
signature	string {length = 1..64} {pattern = [!#&-Z <sup>^</sup> _~]*}	Signature Algorithm.
subject	string	Subject.
valid-from	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\. \d+)?(Z [\+ -]\d{2}:\d{2})}	Validity start date.
valid-to	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\. \d+)?(Z [\+ -]\d{2}:\d{2})}	Expiration date.

## 3.4 cfm commands

### 3.4.1 Command Tree

```
|-- show cfm maintenance-group mep linktrace-reply <A>
  |-- ltr-transaction-id
  |-- linktrace-input
    |-- ltm-flags
    |-- ltm-target-mac-address
    |-- ltm-ttl
  |-- reason
  |-- responses <B>
    |-- ltr-receive-order
    |-- ltr-chassis-id
    |-- ltr-egress-mac
    |-- ltr-egress-port-id
    |-- ltr-forwarded
    |-- ltr-ingress-mac
    |-- ltr-ingress-port-id
    |-- ltr-relay
    |-- ltr-terminal-mep
    |-- ltr-ttl
    |-- ltr-chassis-id-subtype
    |-- ltr-egress
    |-- ltr-egress-port-id-subtype
    |-- ltr-ingress
    |-- ltr-ingress-port-id-subtype
    |-- ltr-last-egress-identifier
      |-- address
      |-- int
    |-- ltr-next-egress-identifier
      |-- address
      |-- int
    |-- ltr-organization-specific-tlv
    |-- ltr-transport-service-domain
      |-- dns-address
      |-- ip-address
      |-- ip-port
      |-- local-address
      |-- domain
      |-- unknown-address
  |-- status
|-- show cfm maintenance-group mep loopback-transmit-session
  |-- lbm-dest-mcast-class1-mac-address
  |-- lbm-dest-ucast-mac-address
  |-- message-interval
  |-- number-of-messages
  |-- pattern-tlv
    |-- data-tlv
    |-- tlv-length
  |-- reason
  |-- statistics
    |-- in-lbr
```

```

|-- in-lbr-bad-msdu
|-- in-lbr-out-of-order
|-- out-lbm
|-- status
|-- transaction-id
|-- transmit-loopback-discover-response
    |-- response <A>
        |-- receive-order
        |-- reply-mac-address
|-- vlan-tag-info
    |-- inner-tag-drop-eligible
    |-- inner-tag-priority
    |-- outer-tag-drop-eligible
    |-- outer-tag-priority
|-- show cfm maintenance-group mep stats
    |-- mep-lbr-bad-msdu
    |-- mep-lbr-in
    |-- mep-lbr-in-out-of-order
    |-- mep-lbr-out
    |-- mep-unexpected-ltr-in

```

### 3.4.2 Commands

show cfm maintenance-group mep linktrace-reply <A>

#### Input Parameters:

Parameter	Type	Description
A	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTMs response is going to be returned.

#### Output Parameters:

Parameter	Type	Description
ltr-transaction-id	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTMs response is going to be returned.
<a href="#">linktrace-input</a>	Not applicable	Reference to subtree parameters
reason	string	When: (derived-from-or-self (./status, 'aborted'))  Additional information in case of the on-demand LTM test is aborted due to local

		events that are not under control of the on-demand LTM test.
<a href="#">responses</a>	Not applicable	Reference to subtree parameters
status	identityref One of: aborted   active   completed   failed   idle	Indicates the status of Linktrace session. status = idle, Indicates that no linktrace session is triggered. status = active, Indicates that a linktrace session is currently active and that the MEP is transmitting LTM PDU, in which case no new linktrace session can be initiated. status = completed, Indicates that last triggered linktrace test successfully completed. status = failed, Indicates that last triggered linktrace test has failed. status = aborted, Indicates that last triggered linktrace test has aborted.

show cfm maintenance-group mep linktrace-reply <A> linktrace-input

#### Input Parameters:

Parameter	Type	Description
A	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTMs response is going to be returned.

#### Output Parameters:

Parameter	Type	Description
ltm-flags	bits  default "	The flags field for the LTMs transmitted by the MEP.
ltm-target-mac-address	string {pattern = [0-9a-fA-F][02468aAcCeE](-[0-9a-fA-F]{2}){5}}	The target MAC address field to be transmitted. A unicast MAC address.
ltm-ttl	uint8 [0..255]  default '64'	The LTM TTL field. Indicates the number of hops remaining to the LTM. Decrement by 1 by each Linktrace Responder that handles the LTM. The value returned in the LTR is one less than that received in the LTM. If the LTM TTL is 0 or 1, the LTM is not forwarded to the next hop, and if 0, no LTR is generated.

show cfm maintenance-group mep linktrace-reply <A> responses <B>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTRs response is going to be returned.
B	uint32 [1..4294967295]	An index to distinguish among multiple LTRs with the same LTR Transaction Identifier field value. Assigned sequentially from 1, in the order that the Linktrace Initiator received the LTRs.

**Output Parameters:**

Parameter	Type	Description
ltr-receive-order	uint32 [1..4294967295]	An index to distinguish among multiple LTRs with the same LTR Transaction Identifier field value. Assigned sequentially from 1, in the order that the Linktrace Initiator received the LTRs.
ltr-chassis-id	string {length = 1..255}	When: ../ltr-chassis-id-subtype  The Chassis ID returned in the Sender ID TLV of the LTR, if any. The format of this object is determined by the value of the ltr-chassis-id-subtype object. This leaf is not present if the LTR did not contain a Sender ID TLV or if the Sender ID TLV did not contain a Chassis ID.
ltr-egress-mac	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	When: ../ltr-egress  MAC address returned in the egress MAC address field. This leaf is not present if the ltr-egress leaf is not present.
ltr-egress-port-id	string {length = 1..255}	When: ../ltr-egress and ../ltr-egress-port-id-subtype  Egress Port ID. The format of this object is determined by the value of the ltr-egress-port-id-subtype object. This leaf is not present if the ltr-egress leaf or the ltr-egress-port-id-subtype leaf are not present.

ltr-forwarded	boolean	Indicates if an LTM was forwarded by the responding MP, as returned in the FwdYes flag of the flags field.
ltr-ingress-mac	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	When: ../ltr-ingress  MAC address returned in the ingress MAC address field. This leaf is not present if the ltr-ingress leaf is not present.
ltr-ingress-port-id	string {length = 1..255}	When: ../ltr-ingress and ../ltr-ingress-port-id-subtype  Ingress Port ID. The format of this object is determined by the value of the ltr-ingress-port-id-subtype object. This leaf is not present if the ltr-ingress leaf or the ltr-ingress-port-id-subtype leaf are not present.
ltr-relay	enumeration One of: relay-hit   relay-fdb   relay-mpdb	Value returned in the Relay Action field.
ltr-terminal-mep	boolean	A Boolean value stating whether the forwarded LTM reached a MEP enclosing its MA, as returned in the Terminal MEP flag of the Flags field
ltr-ttl	uint8 [0..255]	TTL field value for a returned LTR.
ltr-chassis-id-subtype	enumeration One of: chassis-component   interface-alias   port-component   mac-address   network-address   interface-name   local	Specifies the format of the Chassis ID returned in the Sender ID TLV of the LTR, if any. This leaf is not present if the LTR did not contain a Sender ID TLV or if the Sender ID TLV did not contain a Chassis ID.
ltr-egress	enumeration One of: egress-okay   egress-down   egress-blocked   egress-vid	The value returned in the Egress Action Field of the LTM. The node is not present if no Reply Egress TLV was returned in the LTM.
ltr-egress-port-id-subtype	enumeration One of: interface-alias   port-component   mac-address   network-address   interface-name   agent-circuit-id   local	When: ../ltr-egress  Format of the egress Port ID. This leaf is not present if the ltr-egress leaf is not present, or if the Reply Egress TLV did not contain a Port ID.
ltr-ingress	enumeration One of: ingress-ok   ingress-down   ingress-blocked   ingress-vid	The value returned in the Ingress Action Field of the LTM. This leaf is not present if no Reply Ingress TLV was returned in the LTM.
ltr-ingress-port-id-subtype	enumeration One of:	When: ../ltr-ingress

	interface-alias   port-component   mac-address   network-address   interface-name   agent-circuit-id   local	Format of the ingress Port ID. This leaf is not present if the ltr-ingress leaf is not present, or if the Reply Ingress TLV did not contain a Port ID.
<a href="#">ltr-last-egress-identifier</a>	Not applicable	Reference to subtree parameters
<a href="#">ltr-next-egress-identifier</a>	Not applicable	Reference to subtree parameters
ltr-organization-specific-tlv	binary {length = 0   4..1500}	All Organization specific TLVs returned in the LTR, if any. Includes all octets including and following the TLV Length field of each TLV, concatenated together.
<a href="#">ltr-transport-service-domain</a>	Not applicable	Reference to subtree parameters

show cfm maintenance-group mep linktrace-reply <A> responses <B> ltr-last-egress-identifier

**Input Parameters:**

Parameter	Type	Description
A	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTMs response is going to be returned.
B	uint32 [1..4294967295]	An index to distinguish among multiple LTRs with the same LTR Transaction Identifier field value. Assigned sequentially from 1, in the order that the Linktrace Initiator received the LTRs.

**Output Parameters:**

Parameter	Type	Description
address	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	A 48-bit IEEE MAC address unique to the system in which the MEP Linktrace Initiator or Linktrace Responder resides.
int	uint16	A value used to uniquely identify the MEP Linktrace Initiator or Linktrace Responder within that system.

show cfm maintenance-group mep linktrace-reply <A> responses <B> ltr-next-egress-identifier

**Input Parameters:**

Parameter	Type	Description
A	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTMs response is going to be returned.
B	uint32 [1..4294967295]	An index to distinguish among multiple LTRs with the same LTR Transaction Identifier field value. Assigned sequentially from 1, in the order that the Linktrace Initiator received the LTRs.

**Output Parameters:**

Parameter	Type	Description
address	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	A 48-bit IEEE MAC address unique to the system in which the MEP Linktrace Initiator or Linktrace Responder resides.
int	uint16	A value used to uniquely identify the MEP Linktrace Initiator or Linktrace Responder within that system.

show cfm maintenance-group mep linktrace-reply <A> responses <B> ltr-transport-service-domain

**Input Parameters:**

Parameter	Type	Description
A	uint32 [0..4294967295]	Transaction identifier returned by a previous transmit linktrace message command, indicating which LTMs response is going to be returned.
B	uint32 [1..4294967295]	An index to distinguish among multiple LTRs with the same LTR Transaction Identifier field value. Assigned sequentially from 1, in the order that the Linktrace Initiator received the LTRs.

**Output Parameters:**

Parameter	Type	Description
dns-address	string {length = 1..255}	The transport domain using fully qualified domain names, associated with the domain type defined by the domain leaf node. Represents a DNS domain name followed by a colon ':' (ASCII character 0x3A) and a port number in ASCII. The name SHOULD be fully qualified whenever possible.
ip-address	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)\{3\}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}	IPv4 or IPv6 address.
ip-port	uint16 [0..65535]	IP port.
local-address	string {length = 1..255}	Represents a POSIX Local IPC transport address, associated with the domain type defined by the domain leaf node.
domain	string {pattern = \d*(\.\d*){1,127}}	The domain type.
unknown-address	binary {length = 1..255}	This represents an undefined address, for the case when the domain type provided is an unrecognizable value.

show cfm maintenance-group mep loopback-transmit-session

#### Output Parameters:

Parameter	Type	Description
lbm-dest-ucast-mac-address	string {pattern = [0-9a-fA-F][02468aAcCeE](-[0-9a-fA-F]{2}){5}}	The destination unicast MAC Address field to be transmitted. A unicast destination MAC address.
message-interval	uint16 [1..600]	Unit: 0.1 seconds  Specifies the period between LBM transmissions in a LB session.
number-of-messages	uint32	The number of LBMs to be transmitted by the MEP.
<a href="#">pattern-tlv</a>	Not applicable	Reference to subtree parameters

reason	string	When: (derived-from-or-self (../status, 'aborted'))  Additional information in case of the on-demand LBM test is aborted due to local events that are not under control of the on-demand LBM test.
<a href="#">statistics</a>	Not applicable	Reference to subtree parameters
status	identityref One of: aborted   active   completed   failed   idle	Indicates the status of Loopback session. status = idle, Indicates that no loopback session is triggered. status = active, Indicates that a loopback session is currently active and that the MEP is transmitting LBM PDUs, in which case no new loopback session can be initiated. status = completed, Indicates that last triggered loopback test successfully completed. status = failed, Indicates that last triggered loopback test has failed. status = aborted, Indicates that last triggered loopback test has aborted.
transaction-id	uint32	The Loopback Transaction Identifier of the first LBM (to be) sent.
<a href="#">transmit-loopback-discover-response</a>	Not applicable	Reference to subtree parameters
<a href="#">vlan-tag-info</a>	Not applicable	Reference to subtree parameters

show cfm maintenance-group mep loopback-transmit-session pattern-tlv

#### Output Parameters:

Parameter	Type	Description
data-tlv	binary {length = 1..1480}	An arbitrary amount of data to be included in a Data TLV.
tlv-length	uint16 [1..1480]	When: (../data-tlv)  Indicates the total length of the TLV. The size of the TLV is adjusted accordingly to ensure frame is of the required total length. In the case of a Data TLV, if the Data TLV to be inserted into the frame is shorter than the configured data pattern, the data pattern will be truncated; if the size of the Data TLV

		is longer than the configured pattern, the pattern will be repeated to fill the TLV.
--	--	--

show cfm maintenance-group mep loopback-transmit-session statistics

**Output Parameters:**

Parameter	Type	Description
in-lbr	uint32	The total number of valid in-order Loopback Reply (LBR) messages received for the loopback session.
in-lbr-bad-msdu	uint32	The total number of Loopback Reply (LBR) messages received for the loopback session whose MEP mac_service_data_unit did not match (except for the OpCode) that of the corresponding LBM.
in-lbr-out-of-order	uint32	The total number of valid out-of-order Loopback Reply (LBR) messages received for the loopback session.
out-lbm	uint32	The total number of Loopback Request (LBM) messages transmitted for the loopback session.

show cfm maintenance-group mep loopback-transmit-session transmit-loopback-discover-response

**Output Parameters:**

Parameter	Type	Description
<a href="#">response</a>	Not applicable	Reference to subtree parameters

show cfm maintenance-group mep loopback-transmit-session transmit-loopback-discover-response response <A>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	uint32	An index to distinguish the received order among multiple LBRs with the same LBR Transaction Identifier field value. receive-order is assigned sequentially from 1, in the order that the Loopback Initiator received the LBR.
---	--------	--

**Output Parameters:**

Parameter	Type	Description
receive-order	uint32	An index to distinguish the received order among multiple LBRs with the same LBR Transaction Identifier field value. receive-order is assigned sequentially from 1, in the order that the Loopback Initiator received the LBR.
reply-mac-address	string {pattern = [0-9a-fA-F][02468aAcCeE](-[0-9a-fA-F]{2}){5}}	Source MAC address returned in the LBR Ethernet frame.

show cfm maintenance-group mep loopback-transmit-session vlan-tag-info

**Output Parameters:**

Parameter	Type	Description
inner-tag-drop-eligible	boolean	Specifies the value of the Drop Eligible Indicator (DEI) to be used in the inner tag, if present in the transmitted CFM packets. If true, a DEI bit value of 1 will be used indicating that the CFM packets are eligible to be dropped in the presence of congestion, if false a DEI bit value of 0 will be used.
inner-tag-priority	uint8 [0..7]	Priority. 3 bit value to be used in the inner tag, if present in the transmitted frame.
outer-tag-drop-eligible	boolean	Specifies the value of the Drop Eligible Indicator (DEI) to be used in the outer tag, if present in the transmitted CFM packets. If true, a DEI bit value of 1 will be used indicating that the CFM packets are eligible to be dropped in the presence of congestion, if false a DEI bit value of 0 will be used.

---

outer-tag-priority	uint8 [0..7]	Priority. 3 bit value to be used in the outer tag, if present in the transmitted frame.
--------------------	-----------------	---

show cfm maintenance-group mep stats

**Output Parameters:**

Parameter	Type	Description
mep-lbr-bad-msdu	uint64	The total number of LBRs received whose mac_service_data_unit did not match (except for the OpCode) that of the corresponding LBM.
mep-lbr-in	uint64	Total number of valid, in-order Loopback Replies received.
mep-lbr-in-out-of-order	uint64	The total number of valid, out-of-order Loopback Replies received
mep-lbr-out	uint64	Total number of Loopback Replies transmitted.
mep-unexpected-ltr-in	uint64	The total number of unexpected LTRs received.

## 3.5 classifiers commands

### 3.5.1 Command Tree

|-- [show classifiers system-default-actions](#)

- |-- bac-color
- |-- flow-color
- |-- metered-color
- |-- metered-flow
- |-- scheduling-traffic-class

### 3.5.2 Commands

show classifiers system-default-actions

#### Output Parameters:

Parameter	Type	Description
bac-color	union union enumeration One of: green   yellow   red  enumeration One of: copy-from-flow-color  enumeration One of: discard	Defines the frame's BAC color for when color-aware classification and/or actions are needed in the processing of a frame. More specific, when the frame is to be queued using a color aware BAC method.
flow-color	union enumeration One of: green   yellow   red  enumeration One of: discard	Defines the frame's flow color for when color-aware classification and/or actions are needed in the processing of a frame.
metered-color	boolean	Defines the frames default color marking by policer.

---

metered-flow	boolean	Defines the frames flow as metered by policer or not by default.
scheduling-traffic-class	union uint32 [0..7]  enumeration One of: discard	Defines the traffic class assigned by default to frames.

## 3.6 confd-state commands

### 3.6.1 Command Tree

```
|-- show confd-state
  |-- cli
    |-- listen
      |-- ssh
        |-- ip
        |-- port
    |-- daemon-status
    |-- epoll
  |-- ha
    |-- connected-slave
    |-- master-node-id
    |-- mode
    |-- node-id
    |-- pending-slave
  |-- internal
    |-- callpoints
      |-- actionpoint <A>
        |-- id
        |-- daemon
          |-- callbacks
          |-- error
          |-- id
          |-- name
        |-- error
        |-- file
        |-- path
        |-- range
          |-- daemon
            |-- callbacks
            |-- error
            |-- id
            |-- name
          |-- default
          |-- lower
          |-- upper
      |-- authentication-callback
        |-- daemon
          |-- callbacks
          |-- error
          |-- id
          |-- name
        |-- enabled
        |-- error
        |-- file
        |-- path
        |-- range
          |-- daemon
            |-- callbacks
            |-- error
```

```
    |-- id
    |-- name
    |-- default
    |-- lower
    |-- upper
|-- authorization-callbacks
    |-- daemon
        |-- callbacks
        |-- error
        |-- id
        |-- name
    |-- enabled
    |-- error
    |-- file
    |-- path
    |-- range
        |-- daemon
            |-- callbacks
            |-- error
            |-- id
            |-- name
        |-- default
        |-- lower
        |-- upper
|-- callpoint <A>
    |-- id
    |-- daemon
        |-- callbacks
        |-- error
        |-- id
        |-- name
    |-- error
    |-- file
    |-- path
    |-- range
        |-- daemon
            |-- callbacks
            |-- error
            |-- id
            |-- name
        |-- default
        |-- lower
        |-- upper
|-- error-formatting-callback <A>
    |-- id
    |-- daemon
        |-- callbacks
        |-- error
        |-- id
        |-- name
    |-- error
    |-- file
```

```
-- path
-- range
  -- daemon
    -- callbacks
    -- error
    -- id
    -- name
  -- default
  -- lower
  -- upper
-- notification-stream-replay <A>
  -- name
  -- daemon
    -- callbacks
    -- error
    -- id
    -- name
  -- error
  -- file
  -- path
  -- range
    -- daemon
      -- callbacks
      -- error
      -- id
      -- name
    -- default
    -- lower
    -- upper
  -- replay-support
-- snmp-inform-callback <A>
  -- id
  -- daemon
    -- callbacks
    -- error
    -- id
    -- name
  -- error
  -- file
  -- path
  -- range
    -- daemon
      -- callbacks
      -- error
      -- id
      -- name
    -- default
    -- lower
    -- upper
-- snmp-notification-subscription <A>
  -- id
  -- daemon
```

```
|-- callbacks
|-- error
|-- id
|-- name
|-- error
|-- file
|-- path
|-- range
    |-- daemon
        |-- callbacks
        |-- error
        |-- id
        |-- name
        |-- default
        |-- lower
        |-- upper
|-- typepoint <A>
    |-- id
    |-- daemon
        |-- callbacks
        |-- error
        |-- id
        |-- name
    |-- error
    |-- file
    |-- path
    |-- range
        |-- daemon
            |-- callbacks
            |-- error
            |-- id
            |-- name
            |-- default
            |-- lower
            |-- upper
|-- validationpoint <A>
    |-- id
    |-- daemon
        |-- callbacks
        |-- error
        |-- id
        |-- name
    |-- error
    |-- file
    |-- path
    |-- range
        |-- daemon
            |-- callbacks
            |-- error
            |-- id
            |-- name
        |-- default
```

---

```
    |-- lower
    |-- upper
|-- cdb
  |-- client
    |-- datastore
    |-- info
    |-- lock
    |-- name
    |-- subscription
      |-- datastore
      |-- error
      |-- id
      |-- path
      |-- priority
      |-- twophase
    |-- type
  |-- datastore <A>
    |-- name
    |-- disk-size
    |-- filename
    |-- pending-notification-queue
      |-- notification
        |-- client-name
        |-- priority
        |-- subscription-ids
    |-- pending-subscription-sync
      |-- notification
        |-- client-name
        |-- subscription-ids
      |-- priority
      |-- time-remaining
    |-- ram-size
    |-- read-locks
    |-- subscription-lock-set
    |-- transaction-id
    |-- waiting-for-replication-sync
    |-- write-lock-set
    |-- write-queue
|-- loaded-data-models
  |-- data-model <A>
    |-- name
    |-- exported-to
    |-- exported-to-all
    |-- namespace
    |-- prefix
    |-- revision
  |-- mount <A>
    |-- mount-id
    |-- data-model <B>
      |-- name
      |-- exported-to
      |-- exported-to-all
```

```
    |-- namespace
    |-- prefix
    |-- revision
|-- netconf
    |-- listen
        |-- ssh
            |-- ip
            |-- port
        |-- tcp
            |-- ip
            |-- port
|-- read-only-mode
|-- rest
    |-- listen
        |-- ssl
            |-- ip
            |-- port
        |-- tcp
            |-- ip
            |-- port
|-- smp
    |-- number-of-threads
|-- snmp
    |-- engine-id
    |-- listen
        |-- udp
            |-- ip
            |-- port
    |-- mib
    |-- version
        |-- v1
        |-- v2c
        |-- v3
|-- upgrade-mode
|-- version
|-- webui
    |-- listen
        |-- ssl
            |-- ip
            |-- port
        |-- tcp
            |-- ip
            |-- port
```

### 3.6.2 Commands

show confd-state

**Output Parameters:**

Parameter	Type	Description
<a href="#">cli</a>	Not applicable	Reference to subtree parameters
daemon-status	enumeration One of: starting   phase0   phase1   started   stopping	Description not available.
epoll	boolean	Indicates whether an enhanced poll() function is used
<a href="#">ha</a>	Not applicable	Reference to subtree parameters
<a href="#">internal</a>	Not applicable	Reference to subtree parameters
<a href="#">loaded-data-models</a>	Not applicable	Reference to subtree parameters
<a href="#">netconf</a>	Not applicable	Reference to subtree parameters
<a href="#">rest</a>	Not applicable	Reference to subtree parameters
<a href="#">smp</a>	Not applicable	Reference to subtree parameters
<a href="#">snmp</a>	Not applicable	Reference to subtree parameters
version	string	Tail-f product version number.
<a href="#">webui</a>	Not applicable	Reference to subtree parameters

show confd-state cli

**Output Parameters:**

Parameter	Type	Description
<a href="#">listen</a>	Not applicable	Reference to subtree parameters

show confd-state cli listen

**Output Parameters:**

Parameter	Type	Description
<a href="#">ssh</a>	Not applicable	Reference to subtree parameters

show confd-state cli listen ssh

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}	Description not available.
port	uint16 [0..65535]	Description not available.

show confd-state ha

**Output Parameters:**

Parameter	Type	Description
connected-slave	string	When: ../mode = 'master' or ../mode = 'relay-slave'  The node identifiers of the currently connected slaves.
master-node-id	string	When: ../mode = 'slave' or ../mode = 'relay-slave'  The node identifier of this node's parent node. This is the HA cluster's master node unless relay slaves are used.
mode	enumeration One of: none   slave   master   relay-slave	The current HA mode of the node in the HA cluster.
node-id	string	When: ../mode != 'none'  The node identifier of this node in the HA cluster.
pending-slave	string	When: ../mode = 'master' or ../mode = 'relay-slave'

		The node identifiers of slaves with pending acknowledgement of synchronous replication.
--	--	---

show confd-state internal

**Output Parameters:**

Parameter	Type	Description
<a href="#">callpoints</a>	Not applicable	Reference to subtree parameters
<a href="#">cdb</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints

**Output Parameters:**

Parameter	Type	Description
<a href="#">actionpoint</a>	Not applicable	Reference to subtree parameters
<a href="#">authentication-callback</a>	Not applicable	Reference to subtree parameters
<a href="#">authorization-callbacks</a>	Not applicable	Reference to subtree parameters
<a href="#">callpoint</a>	Not applicable	Reference to subtree parameters
<a href="#">error-formatting-callback</a>	Not applicable	Reference to subtree parameters
<a href="#">notification-stream-replay</a>	Not applicable	Reference to subtree parameters
<a href="#">snmp-inform-callback</a>	Not applicable	Reference to subtree parameters
<a href="#">snmp-notification-subscription</a>	Not applicable	Reference to subtree parameters
<a href="#">typepoint</a>	Not applicable	Reference to subtree parameters
<a href="#">validationpoint</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints actionpoint <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints actionpoint <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints actionpoint <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints actionpoint <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints authentication-callback

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
enabled	boolean	Description not available.
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints authentication-callback daemon

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints authentication-callback range

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints authentication-callback range daemon

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints authorization-callbacks

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
enabled	boolean	Description not available.
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.

---

<a href="#">range</a>	Not applicable	Reference to subtree parameters
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show confd-state internal callpoints authorization-callbacks daemon

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints authorization-callbacks range

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints authorization-callbacks range daemon

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints callpoint <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints callpoint <A> daemon

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string	Callpoint id
---	--------	--------------

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints callpoint <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints callpoint <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints error-formatting-callback <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints error-formatting-callback <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints error-formatting-callback <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints error-formatting-callback <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints notification-stream-replay <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Name of the notification stream.

**Output Parameters:**

Parameter	Type	Description
name	string	Name of the notification stream.
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters
replay-support	enumeration One of: none   builtin   external	Description not available.

show confd-state internal callpoints notification-stream-replay <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Name of the notification stream.

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints notification-stream-replay <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Name of the notification stream.

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints notification-stream-replay <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Name of the notification stream.

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints snmp-inform-callback <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints snmp-inform-callback <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints snmp-inform-callback <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints snmp-inform-callback <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints snmp-notification-subscription <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints snmp-notification-subscription <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints snmp-notification-subscription <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints snmp-notification-subscription <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints typepoint <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints typepoint <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints typepoint <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints typepoint <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints validationpoint <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
id	string	Callpoint id
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
error	enumeration One of: NOT-REGISTERED   UNKNOWN	If this leaf exists, there is a problem with the callpoint registration.
file	string	The pathname of the shared object implementing the type for a typepoint.
path	string	The path of the list that a range registration pertains to.
<a href="#">range</a>	Not applicable	Reference to subtree parameters

show confd-state internal callpoints validationpoint <A> daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal callpoints validationpoint <A> range

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
<a href="#">daemon</a>	Not applicable	Reference to subtree parameters
lower	string	The space-separated set of keys that defines the lower endpoint of the range for a non-default registration.
upper	string	The space-separated set of keys that defines the upper endpoint of the range for a non-default registration.

show confd-state internal callpoints validationpoint <A> range daemon

**Input Parameters:**

Parameter	Type	Description
A	string	Callpoint id

**Output Parameters:**

Parameter	Type	Description
callbacks	string	The DP callbacks that have registered for a callpoint.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the daemon registration.
id	uint32	The numerical id assigned to the application daemon that has registered for a callpoint.
name	string	The name of the application daemon that has registered for a callpoint.

show confd-state internal cdb

**Output Parameters:**

Parameter	Type	Description
<a href="#">client</a>	Not applicable	Reference to subtree parameters
<a href="#">datastore</a>	Not applicable	Reference to subtree parameters

show confd-state internal cdb client

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

datastore	union enumeration One of: running   startup   operational  enumeration One of: pre_commit_running	The name of the datastore when 'type' = 'client'. The value 'pre_commit_running' is the 'pseudo' datastore representing 'running' before a commit.
info	string	Additional information about the client obtained at connect time. If present, it consists of client PID and socket file descriptor number.
lock	enumeration One of: read   subscription   pending-read   pending-subscription	Set when 'type' = 'client' and the client has requested or acquired a lock on the datastore. The 'pending-read' and 'pending-subscription' values indicate that the client has requested but not yet acquired the corresponding lock. A 'read' lock is never taken for the 'operational' datastore, a 'subscription' lock is never taken for any other datastore than 'operational'.
name	string	The client name.
<a href="#">subscription</a>	Not applicable	Reference to subtree parameters
type	enumeration One of: inactive   client   subscriber   waiting	The type of client: 'inactive' is a client connection without any specific state. 'client' means that the client has an active session towards a datastore. A 'subscriber' has made one or more subscriptions. 'waiting' means that the client is waiting for completion of a call such as cdb_wait_start().

show confd-state internal cdb client subscription

#### Output Parameters:

Parameter	Type	Description
datastore	enumeration One of: running   startup   operational	The name of the datastore for the subscription - only 'running' and 'operational' can have subscriptions.
error	enumeration One of: PENDING	If this leaf exists, there is a problem with the subscription.

id	uint32	The subscription identifier for the subscription.
path	string	The path that the subscription pertains to.
priority	int32	The priority of the subscription.

show confd-state internal cdb datastore <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   startup   operational	Description not available.

**Output Parameters:**

Parameter	Type	Description
name	enumeration One of: running   startup   operational	Description not available.
disk-size	uint64	The size of the file that is used for persistent storage for the datastore. Only present if 'filename' is present.
filename	string	The pathname of the file that is used for persistent storage for the datastore. Not present for 'running' when 'startup' exists.
<a href="#">pending-notification-queue</a>	Not applicable	Reference to subtree parameters
<a href="#">pending-subscription-sync</a>	Not applicable	Reference to subtree parameters
ram-size	uint64	The size of the in-memory representation of the datastore.
read-locks	uint32	The number of read locks on the datastore. Not present for the 'operational' data store.
subscription-lock-set	boolean	Indicates whether a subscription lock is in effect for the 'operational' datastore.
transaction-id	string	The id of the last committed transaction for the 'running' datastore, or the last update for the 'operational' datastore. For the 'operational' datastore, it is only present when HA is enabled.

waiting-for-replication-sync	boolean	Indicates whether synchronous replication from HA master to HA slave is in progress for the datastore. Not present for the 'operational' datastore.
write-lock-set	boolean	Indicates whether a write lock is in effect for the datastore. Not present for the 'operational' datastore.
write-queue	uint32	Number of pending write requests for the 'operational' datastore on a HA slave that is in the process of synchronizing with the master.

show confd-state internal cdb datastore <A> pending-notification-queue

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   startup   operational	Description not available.

**Output Parameters:**

Parameter	Type	Description
<a href="#">notification</a>	Not applicable	Reference to subtree parameters

show confd-state internal cdb datastore <A> pending-notification-queue notification

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   startup   operational	Description not available.

**Output Parameters:**

Parameter	Type	Description
client-name	string	The name of the client that is the recipient of the notification.

priority	int32	The priority of the subscriptions that generated the notification. Not present for the 'operational' datastore.
subscription-ids	uint32	The subscription identifiers for the subscriptions that generated the notification.

show confd-state internal cdb datastore <A> pending-subscription-sync

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   startup   operational	Description not available.

**Output Parameters:**

Parameter	Type	Description
<a href="#">notification</a>	Not applicable	Reference to subtree parameters
priority	int32	The priority of the subscriptions that generated the notifications that are waiting for acknowledgement. Not present for the 'operational' datastore.
time-remaining	union uint64  enumeration One of: infinity	The remaining time in seconds until subscribing clients that have not acknowledged their notifications are considered unresponsive and will be disconnected. See /confdConfig/cdb/clientTimeout in the confd.conf(5) manual page. The value 'infinity' means that no timeout has been configured in confd.conf.

show confd-state internal cdb datastore <A> pending-subscription-sync notification

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   startup   operational	Description not available.

**Output Parameters:**

Parameter	Type	Description
client-name	string	The name of the client that is the recipient of the notification.
subscription-ids	uint32	The subscription identifiers for the subscriptions that generated the notification.

show confd-state loaded-data-models

**Output Parameters:**

Parameter	Type	Description
<a href="#">data-model</a>	Not applicable	Reference to subtree parameters
<a href="#">mount</a>	Not applicable	Reference to subtree parameters

show confd-state loaded-data-models data-model <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The YANG module name.

**Output Parameters:**

Parameter	Type	Description
name	string	The YANG module name.
exported-to	union enumeration One of: netconf   cli   webui   rest   snmp  string	A list of the contexts (northbound interfaces) this module is exported to.
namespace	string	The YANG module namespace.
prefix	string	The prefix defined in the YANG module.
revision	string	The YANG module revision.

show confd-state loaded-data-models mount <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.

**Output Parameters:**

Parameter	Type	Description
mount-id	string	Description not available.
<a href="#">data-model</a>	Not applicable	Reference to subtree parameters

show confd-state loaded-data-models mount <A> data-model <B>

**Input Parameters:**

Parameter	Type	Description
A	string	Description not available.
B	string	The YANG module name.

**Output Parameters:**

Parameter	Type	Description
name	string	The YANG module name.
exported-to	union enumeration One of: netconf   cli   webui   rest   snmp  string	Description not available.
namespace	string	The YANG module namespace.
prefix	string	The prefix defined in the YANG module.
revision	string	The YANG module revision.

show confd-state netconf

**Output Parameters:**

Parameter	Type	Description
<a href="#">listen</a>	Not applicable	Reference to subtree parameters

show confd-state netconf listen

**Output Parameters:**

Parameter	Type	Description
<a href="#">ssh</a>	Not applicable	Reference to subtree parameters
<a href="#">tcp</a>	Not applicable	Reference to subtree parameters

show confd-state netconf listen ssh

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = (([0-9]([1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9]([1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5]) (\%[p{N}\p{L}]+)?)}	Description not available.
port	uint16 [0..65535]	Description not available.

show confd-state netconf listen tcp

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4] [0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9] 2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	Description not available.
port	uint16 [0..65535]	Description not available.

show confd-state rest

**Output Parameters:**

Parameter	Type	Description
<a href="#">listen</a>	Not applicable	Reference to subtree parameters

show confd-state rest listen

**Output Parameters:**

Parameter	Type	Description
<a href="#">ssl</a>	Not applicable	Reference to subtree parameters
<a href="#">tcp</a>	Not applicable	Reference to subtree parameters

show confd-state rest listen ssl

**Output Parameters:**

Parameter	Type	Description
ip	union string	Description not available.

	{pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}	
	string	
port	uint16 [0..65535]	Description not available.

show confd-state rest listen tcp

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}	Description not available.
	string	
port	uint16 [0..65535]	Description not available.

show confd-state smp

**Output Parameters:**

Parameter	Type	Description
number-of-threads	uint16	Number of threads used by the daemon.

show confd-state snmp

**Output Parameters:**

Parameter	Type	Description
engine-id	string {pattern = ([0-9a-fA-F]){2}(:([0-9a-fA-F]){2}){4,31}}	The local Engine ID specified as a list of colon-specified hexadecimal octets e.g. '4F:4C:41:71'.
<a href="#">listen</a>	Not applicable	Reference to subtree parameters
mib	string	MIBs loaded by the SNMP agent.
<a href="#">version</a>	Not applicable	Reference to subtree parameters

show confd-state snmp listen

**Output Parameters:**

Parameter	Type	Description
<a href="#">udp</a>	Not applicable	Reference to subtree parameters

show confd-state snmp listen udp

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = ([0-9]([1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9]([1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])%[\p{N}\p{L}]+)?}  string	Description not available.
port	uint16 [0..65535]	Description not available.

show confd-state snmp version

**Output Parameters:**

Parameter	Type	Description
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show confd-state webui

**Output Parameters:**

Parameter	Type	Description
<a href="#">listen</a>	Not applicable	Reference to subtree parameters

show confd-state webui listen

**Output Parameters:**

Parameter	Type	Description
<a href="#">ssl</a>	Not applicable	Reference to subtree parameters
<a href="#">tcp</a>	Not applicable	Reference to subtree parameters

show confd-state webui listen ssl

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}	Description not available.
port	uint16 [0..65535]	Description not available.

---

show confd-state webui listen tcp

**Output Parameters:**

Parameter	Type	Description
ip	union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4] [0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9]  2[0-4][0-9] 25[0-5])(%\p{N}\p{L}+)?}  string	Description not available.
port	uint16 [0..65535]	Description not available.

## 3.7 dns-resolver-state commands

### 3.7.1 Command Tree

```
|-- show dns-resolver-state
|   |-- domain-search
|       |-- search
|       |-- type
|   |-- server <A>
|       |-- name
|       |-- address
|       |-- type
```

### 3.7.2 Commands

show dns-resolver-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">domain-search</a>	Not applicable	Reference to subtree parameters
<a href="#">server</a>	Not applicable	Reference to subtree parameters

show dns-resolver-state domain-search

#### Output Parameters:

Parameter	Type	Description
search	string {length = 1..253} {pattern = ((([a-zA-Z0-9_]([a-zA-Z0-9\_-]) {0,61})?[a-zA-Z0-9]\.)*([a-zA-Z0-9]([a-zA-Z0-9\_-]) {0,61})?[a-zA-Z0-9]\.?) \.}	List of domains to search when resolving a host name.
type	enumeration One of: static   dynamic	Identifies where the domain search list comes from.

show dns-resolver-state server <A>

**Input Parameters:**

Parameter	Type	Description
A	string	An arbitrary name for the DNS server.

**Output Parameters:**

Parameter	Type	Description
name	string	An arbitrary name for the DNS server.
address	union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%[\p{N}\p{L}]+)?} string	The IP address (IPv4 or IPv6) of the DNS server.
type	enumeration One of: static   dynamic	Identifies where the DNS server address comes from.

## 3.8 file-transfer-state commands

### 3.8.1 Command Tree

```
|-- show file-transfer-state
|   |-- available
|       |-- download-files
|           |-- category <A>
|               |-- category-type
|               |-- files <B>
|                   |-- name
|                   |-- size
|           |-- upload-files
|               |-- category <A>
|                   |-- category-type
|                   |-- files <B>
|                       |-- name
|                       |-- size
|   |-- file-transferred <A>
|       |-- index
|       |-- url
|       |-- category <B>
|           |-- category-type
|           |-- files
|       |-- credential-method
|       |-- transfer-status
|           |-- progress
|           |-- transfer-status
|           |-- compressed-file-name
|           |-- failure-reason
|           |-- md5-checksum
|           |-- timestamp
|   |-- ssh-auth-publickey
|       |-- ssh-public-keys <A>
|           |-- key-type
|           |-- public-key
|   |-- techsupport
|       |-- available
|           |-- download-files
|               |-- category <A>
|                   |-- category-type
|                   |-- files <B>
|                       |-- name
|                       |-- size
|               |-- upload-files
|                   |-- category <A>
|                       |-- category-type
|                       |-- directory <B>
|                           |-- directory-name
|                       |-- files <C>
|                           |-- file-name
|                           |-- size
```

```

|-- files <B>
    |-- name
    |-- size
|-- file-transferred <A>
    |-- index
    |-- url
    |-- category <B>
        |-- category-type
    |-- directory <C>
        |-- name
        |-- files
    |-- files
    |-- credential-method
    |-- transfer-status
        |-- progress
        |-- transfer-status
        |-- compressed-file-name
        |-- failure-reason
        |-- md5-checksum
        |-- timestamp

```

### 3.8.2 Commands

show file-transfer-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">available</a>	Not applicable	Reference to subtree parameters
<a href="#">file-transferred</a>	Not applicable	Reference to subtree parameters
<a href="#">ssh-auth-publickey</a>	Not applicable	Reference to subtree parameters
<a href="#">techsupport</a>	Not applicable	Reference to subtree parameters

show file-transfer-state available

#### Output Parameters:

Parameter	Type	Description
<a href="#">download-files</a>	Not applicable	Reference to subtree parameters
<a href="#">upload-files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state available download-files

**Output Parameters:**

Parameter	Type	Description
<a href="#">category</a>	Not applicable	Reference to subtree parameters

show file-transfer-state available download-files category <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref No identities are supported.	Category type

**Output Parameters:**

Parameter	Type	Description
category-type	identityref No identities are supported.	Category type
<a href="#">files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state available download-files category <A> files <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref No identities are supported.	Category type
B	string	File name.

**Output Parameters:**

Parameter	Type	Description
name	string	File name.
size	uint32	Unit: bytes  The size of the file in bytes.

show file-transfer-state available upload-files

**Output Parameters:**

Parameter	Type	Description
<a href="#">category</a>	Not applicable	Reference to subtree parameters

show file-transfer-state available upload-files category <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: syslog	Category type.

**Output Parameters:**

Parameter	Type	Description
category-type	identityref One of: syslog	Category type.
<a href="#">files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state available upload-files category <A> files <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: syslog	Category type.
B	string	File name.

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

name	string	File name.
size	uint32	Unit: bytes The size of the file in bytes.

show file-transfer-state file-transferred <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.

**Output Parameters:**

Parameter	Type	Description
index	uint8	Index.
url	string	URL of the remote server containing the information required to download or upload the specified files included protocol, IP address, file-path, etc..
<a href="#">category</a>	Not applicable	Reference to subtree parameters
credential-method	enumeration One of: password   certificate   ssh-key	Credential method
<a href="#">transfer-status</a>	Not applicable	Reference to subtree parameters

show file-transfer-state file-transferred <A> category <B>

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.
B	identityref One of: download-file-category   download-file-category-techsupport   reboot-logs   syslog   syslog   trace-logs   upload-file-category   upload-file-category-techsupport	Category type.

**Output Parameters:**

Parameter	Type	Description
category-type	identityref One of: download-file-category   download-file-category-techsupport   reboot-logs   syslog   syslog   trace-logs   upload-file-category   upload-file-category-techsupport	Category type.
files	string	List of files.

show file-transfer-state file-transferred <A> transfer-status

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.

**Output Parameters:**

Parameter	Type	Description
progress	uint8 [0 .. 100]	When: (derived-from-or-self (../transfer-status, 'file-transfer-inprogress')) and not(starts-with(../url, 'tftp'))  Transfer progress.
transfer-status	identityref One of: file-transfer-aborted   file-transfer-failure   file-transfer-inprogress   file-transfer-planned   file-transfer-success	Transfer status.
compressed-file-name	string	When: (derived-from-or-self (../transfer-status, 'file-transfer-success')) and not(derived-from-or-self (../category/category-type, 'ztp-certificate'))  By default compression is enabled during upload. This leaf specifies the name of the compressed file. If not specified as part of the URL, the file name shall be auto-generated by the system. This leaf is applicable only in case of upload requests. For Download requests, the value of this leaf shall be empty.

failure-reason	string	When: (derived-from-or-self (../transfer-status, 'file-transfer-failure'))  Additional information in case of failures.
md5-checksum	string	When: (derived-from-or-self (../transfer-status, 'file-transfer-success'))  MD5 Checksum Value of the compressed file in case of upload or the downloaded file in case of download.
timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	When: (derived-from-or-self (../transfer-status, 'file-transfer-success'))  The time and date when the file was uploaded/downloaded.

show file-transfer-state ssh-auth-publickey

**Output Parameters:**

Parameter	Type	Description
<a href="#">ssh-public-keys</a>	Not applicable	Reference to subtree parameters

show file-transfer-state ssh-auth-publickey ssh-public-keys <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	A locally-defined or referenced asymmetric key pair to be used for client identification.

**Output Parameters:**

Parameter	Type	Description
key-type	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	A locally-defined or referenced asymmetric key pair to be used for client identification.
public-key	binary	A locally generated authentication key pair in the system in openssl format.

show file-transfer-state techsupport

**Output Parameters:**

Parameter	Type	Description
<a href="#">available</a>	Not applicable	Reference to subtree parameters
<a href="#">file-transferred</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available

**Output Parameters:**

Parameter	Type	Description
<a href="#">download-files</a>	Not applicable	Reference to subtree parameters
<a href="#">upload-files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available download-files

**Output Parameters:**

Parameter	Type	Description
<a href="#">category</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available download-files category <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref No identities are supported.	Category type.

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

category-type	identityref No identities are supported.	Category type.
<a href="#">files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available download-files category <A> files <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref No identities are supported.	Category type.
B	string	File name.

**Output Parameters:**

Parameter	Type	Description
name	string	File name.
size	uint32	Unit: bytes The size of the file in bytes.

show file-transfer-state techsupport available upload-files

**Output Parameters:**

Parameter	Type	Description
<a href="#">category</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available upload-files category <A>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of:	Category type.

	reboot-logs   syslog   trace-logs	
--	-----------------------------------	--

**Output Parameters:**

Parameter	Type	Description
category-type	identityref One of: reboot-logs   syslog   trace-logs	Category type.
<a href="#">directory</a>	Not applicable	Reference to subtree parameters
<a href="#">files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available upload-files category <A> directory <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: reboot-logs   syslog   trace-logs	Category type.
B	string	Directory name.

**Output Parameters:**

Parameter	Type	Description
directory-name	string	Directory name.
<a href="#">files</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport available upload-files category <A> directory <B> files <C>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: reboot-logs   syslog   trace-logs	Category type.
B	string	Directory name.
C	string	File name.

**Output Parameters:**

Parameter	Type	Description
file-name	string	File name.
size	uint32	Unit: bytes The size of the file in bytes.

show file-transfer-state techsupport available upload-files category <A> files <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: reboot-logs   syslog   trace-logs	Category type.
B	string	File name.

**Output Parameters:**

Parameter	Type	Description
name	string	File name.
size	uint32	Unit: bytes The size of the file in bytes.

show file-transfer-state techsupport file-transferred <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.

**Output Parameters:**

Parameter	Type	Description
index	uint8	Index.
url	string	URL of the remote server containing the information required to download or upload

		the specified files included protocol, IP address, file-path, etc..
<a href="#">category</a>	Not applicable	Reference to subtree parameters
credential-method	enumeration One of: password   certificate   ssh-key	Credential method.
<a href="#">transfer-status</a>	Not applicable	Reference to subtree parameters

show file-transfer-state techsupport file-transferred <A> category <B>

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.
B	identityref One of: download-file-category   download-file-category-techsupport   reboot-logs   syslog   syslog   trace-logs   upload-file-category   upload-file-category-techsupport	Category type.

**Output Parameters:**

Parameter	Type	Description
category-type	identityref One of: download-file-category   download-file-category-techsupport   reboot-logs   syslog   syslog   trace-logs   upload-file-category   upload-file-category-techsupport	Category type.
<a href="#">directory</a>	Not applicable	Reference to subtree parameters
files	string	List of files.

show file-transfer-state techsupport file-transferred <A> category <B> directory <C>

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.

B	identityref One of: download-file-category   download-file-category-techsupport   reboot-logs   syslog   syslog   trace-logs   upload-file-category   upload-file-category-techsupport	Category type.
C	string	Directory name.

**Output Parameters:**

Parameter	Type	Description
name	string	Directory name.
files	string	When: (derived-from-or-self (../category-type, 'trace-logs'))  List of files.

show file-transfer-state techsupport file-transferred <A> transfer-status

**Input Parameters:**

Parameter	Type	Description
A	uint8	Index.

**Output Parameters:**

Parameter	Type	Description
progress	uint8 [0 .. 100]	When: (derived-from-or-self (../transfer-status, 'file-transfer-inprogress')) and not(starts-with(../url, 'ftp'))  Transfer progress.
transfer-status	identityref One of: file-transfer-aborted   file-transfer-failure   file-transfer-inprogress   file-transfer-planned   file-transfer-success	Transfer Status.
compressed-file-name	string	When: (derived-from-or-self (../transfer-status, 'file-transfer-success'))  By default compression is enabled during upload. This leaf specifies the name of the compressed file. If not specified as

		part of the URL, the file name shall be auto-generated by the system. This leaf is applicable only in case of upload requests. For Download requests, the value of this leaf shall be empty.
failure-reason	string	When: (derived-from-or-self (../transfer-status, 'file-transfer-failure'))  Additional information in case of failures.
md5-checksum	string	When: (derived-from-or-self (../transfer-status, 'file-transfer-success'))  MD5 Checksum Value of the compressed file in case of upload or the downloaded file in case of download.
timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	When: (derived-from-or-self (../transfer-status, 'file-transfer-success'))  The time and date when the file was uploaded/downloaded.

## 3.9 forwarding-state commands

### 3.9.1 Command Tree

```

|-- show forwarding-state
  |-- forwarders
    |-- forwarder <A>
      |-- name
      |-- forwarding-databases
        |-- forwarding-database
      |-- ports
        |-- port <B>
          |-- name
          |-- sub-interface
      |-- forwarding-databases
        |-- forwarding-database <A>
          |-- name
          |-- mac-addresses
            |-- mac-address <B>
              |-- mac-address
              |-- forwarder
              |-- port
              |-- sub-interface

```

### 3.9.2 Commands

show forwarding-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">forwarders</a>	Not applicable	Reference to subtree parameters
<a href="#">forwarding-databases</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarders

#### Output Parameters:

Parameter	Type	Description
<a href="#">forwarder</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarders forwarder <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name of the forwarder.

**Output Parameters:**

Parameter	Type	Description
name	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name of the forwarder.
<a href="#">forwarding-databases</a>	Not applicable	Reference to subtree parameters
<a href="#">ports</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarders forwarder <A> forwarding-databases

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name of the forwarder.

**Output Parameters:**

Parameter	Type	Description
forwarding-database	leafref : /bbf-l2-fwd:forwarding-state/bbf-l2-fwd:forwarding-databases/bbf-l2-fwd:forwarding-database/bbf-l2-fwd:name	A reference to a forwarding database associated with a forwarder.

show forwarding-state forwarders forwarder <A> ports

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarder.

**Output Parameters:**

Parameter	Type	Description
<a href="#">port</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarders forwarder <A> ports port <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarder.
B	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarder port.

**Output Parameters:**

Parameter	Type	Description
name	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarder port.
sub-interface	leafref : /if:interfaces-state/if:interface/if:name	The VLAN sub-interface associated with this port.

show forwarding-state forwarding-databases

**Output Parameters:**

Parameter	Type	Description
<a href="#">forwarding-database</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarding-databases forwarding-database <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarding database.

**Output Parameters:**

Parameter	Type	Description
name	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarding database.
<a href="#">mac-addresses</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarding-databases forwarding-database <A> mac-addresses

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarding database.

**Output Parameters:**

Parameter	Type	Description
<a href="#">mac-address</a>	Not applicable	Reference to subtree parameters

show forwarding-state forwarding-databases forwarding-database <A> mac-addresses mac-address <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_~]*}	The name of the forwarding database.
B	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}	A specific MAC address that is stored in the forwarding database.

**Output Parameters:**

Parameter	Type	Description
mac-address	string {pattern = [0-9a-fA-F]{2}(:[0-9a-fA-F]{2}){5}}	A specific MAC address that is stored in the forwarding database.
forwarder	leafref : /bbf-l2-fwd:forwarding-state/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder/bbf-l2-fwd:name	This leaf references a forwarder.
port	leafref : /bbf-l2-fwd:forwarding-state/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder[bbf-l2-fwd:name = current()/../forwarder]/bbf-l2-fwd:ports/bbf-l2-fwd:port/bbf-l2-fwd:name	This leaf references a port within the forwarder identified by the leaf 'forwarder'.
sub-interface	leafref : /if:interfaces-state/if:interface/if:name	The VLAN sub-interface associated with this port.

## 3.10 hardware-state commands

### 3.10.1 Command Tree

```
|-- show hardware-state
|-- component <A>
|   |-- name
|   |-- class
|   |-- alias
|   |-- asset-id
|   |-- clei-code
|   |-- component-last-reset-info
|       |-- hardware-ready-time
|       |-- reset-info
|       |-- reset-reason
|       |-- reset-triggered-time
|       |-- reset-type
|   |-- contains-child
|   |-- cpu-processor-data
|       |-- memory-usage
|           |-- available-mem
|           |-- buffer-memory
|           |-- free-memory
|           |-- free-swap
|           |-- total-memory
|           |-- total-swap-memory
|           |-- used-mem
|           |-- used-swap
|       |-- number-of-active-sessions
|       |-- percent-cpu-usage
|           |-- percent-cpu-core-processes
|           |-- percent-cpu-hwio
|           |-- percent-cpu-idle
|           |-- percent-cpu-io
|           |-- percent-cpu-nice
|           |-- percent-cpu-swint
|           |-- percent-cpu-user
|       |-- percent-historical-cpu-usage
|           |-- percent-cpu-last-15min
|           |-- percent-cpu-last-1min
|           |-- percent-cpu-last-5min
|       |-- system-load
|           |-- average-system-load-15-min
|           |-- average-system-load-1-min
|           |-- average-system-load-5-min
|       |-- task-counts
|           |-- running-tasks
|           |-- sleeping-tasks
|           |-- stopped-tasks
|           |-- total-tasks
|           |-- zombie-tasks
|-- description
|-- hardware-rev
```

```
|-- is-fru
|-- last-self-test-error
|-- local-network-address
|-- mfg-date
|-- mfg-name
|-- model-name
|-- nand-resource-data
    |-- bad-sectors
    |-- max-erase-cycles
|-- parent
|-- parent-rel-pos
|-- rx-power-high-alarm
|-- rx-power-high-warning
|-- rx-power-low-alarm
|-- rx-power-low-warning
|-- sensor-data
    |-- oper-status
    |-- units-display
    |-- value
    |-- value-precision
    |-- value-scale
    |-- value-timestamp
    |-- value-type
    |-- value-update-rate
|-- serial-num
|-- software
    |-- software <B>
        |-- name
        |-- config-download
            |-- current-state
                |-- software-name
                |-- state
            |-- last-download-state
                |-- failure
                    |-- failure-reason
                    |-- failure-string
                |-- software-name
                |-- state
        |-- download
            |-- current-state
                |-- download-progress
                |-- software-name
                |-- state
                |-- timestamp
            |-- last-download-state
                |-- failure
                    |-- failure-reason
                    |-- failure-string
                |-- software-name
                |-- state
                |-- timestamp
    |-- revisions
```

```
|-- revision <C>
    |-- name
    |-- download-timestamp
    |-- is-active
    |-- is-committed
    |-- is-valid
    |-- product-code
    |-- source
    |-- version
    |-- revisions-updated
|-- software-details <B>
    |-- name
    |-- revision <C>
        |-- name
        |-- activation-prediction
            |-- impacted-application <D>
                |-- name
            |-- summary
        |-- history-of-activation
            |-- impacted-application <D>
                |-- name
            |-- summary
        |-- sw-entity-details
            |-- sw-entity <D>
                |-- name
                |-- application <E>
                    |-- name
                |-- issu-enabled
                |-- type
                |-- version
|-- verify-software <B>
    |-- name
    |-- verify-revision <C>
        |-- name
        |-- board-verify-status <D>
            |-- board-type
            |-- sw-files-verify-status <E>
                |-- sw-file-name
                |-- verify-failed-reason
                |-- verify-status
        |-- verify-status
            |-- root-cert-content
            |-- verify-failed-reason
            |-- verify-status
            |-- verify-timestamp
|-- state
    |-- admin-state
    |-- alarm-state
    |-- oper-state
    |-- standby-state
    |-- state-last-changed
|-- temperature-high-alarm
```

```
-- temperature-high-warning
-- temperature-low-alarm
-- temperature-low-warning
-- temperature-sensor-thresholds
  -- threshold-high
  -- threshold-high-clear
  -- threshold-high-warning
  -- threshold-high-warning-clear
  -- threshold-low
  -- threshold-low-clear
  -- threshold-low-warning
  -- threshold-low-warning-clear
-- transceiver
  -- diagnostics
    -- status
    -- supply-voltage
    -- temperature
  -- identifiers-and-codes
    -- compliance-codes
      -- escon
      -- ethernet
      -- fiber-channel-technology
      -- fibre-channel-link-length
      -- fibre-channel-speed
      -- fibre-channel-transmission-media
      -- infiniband
      -- sfp-plus-cable-technology
      -- sonet
      -- ten-gigabit-ethernet
    -- physical-device
  -- inventory-status
-- thresholds
  -- rx-power-high-alarm
  -- rx-power-high-warning
  -- rx-power-low-alarm
  -- rx-power-low-warning
  -- supply-voltage-high-alarm
  -- supply-voltage-high-warning
  -- supply-voltage-low-alarm
  -- supply-voltage-low-warning
  -- temperature-high-alarm
  -- temperature-high-warning
  -- temperature-low-alarm
  -- temperature-low-warning
  -- tx-bias-high-alarm
  -- tx-bias-high-warning
  -- tx-bias-low-alarm
  -- tx-bias-low-warning
  -- tx-power-high-alarm
  -- tx-power-high-warning
  -- tx-power-low-alarm
  -- tx-power-low-warning
```

```

|-- transceiver-link
|  |-- diagnostics
|     |-- rx-power-dbm
|     |-- status
|     |-- tx-bias
|     |-- tx-power-dbm
|  |-- wavelength
|-- tx-bias-high-alarm
|-- tx-bias-high-warning
|-- tx-bias-low-alarm
|-- tx-bias-low-warning
|-- tx-power-high-alarm
|-- tx-power-high-warning
|-- tx-power-low-alarm
|-- tx-power-low-warning
|-- uri
|-- voltage-high-alarm
|-- voltage-high-warning
|-- voltage-low-alarm
|-- voltage-low-warning
|-- volume-resource-data
|  |-- volume-resource-list <B>
|     |-- name
|     |-- free
|     |-- size
|-- last-change

```

### 3.10.2 Commands

show hardware-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">component</a>	Not applicable	Reference to subtree parameters
last-change	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time the '/hardware-state/component' list changed.

show hardware-state component <A>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

A	string	<p>The name assigned to this component.</p> <p>This name is not required to be the same as entPhysicalName.</p>
---	--------	---

**Output Parameters:**

Parameter	Type	Description
name	string	<p>The name assigned to this component.</p> <p>This name is not required to be the same as entPhysicalName.</p>
class	identityref One of: acu   alarm-port-input-scan-point   alarm-port-output-scan-point   backplane   backplane-port   battery   bits-port   board   cage   cage-uni   chassis   container   cpu   dac-port   energy-object   external-alarm-port   fan   fan-pack   fastdsl-coax   fastdsl-tp   gnss-port   lt   moca   module   nt   ntio   port   power-supply   psu   rf-video   rj11   rj45   rj45-10-100M   rj45-100M   rj45-10G   rj45-10M   rj45-1G   rj45-2.5G   rj45-25G   rj45-40G   rj45-5G   sensor   slot   slot-acu   slot-fan   slot-lt   slot-lt-ntio   slot-nt   slot-ntio   slot-psu   stack   storage-drive   transceiver   transceiver-link   transceiver-link-gpon   transceiver-link-hspon   transceiver-link-ngpon   transceiver-link-twentyfivegspon   transceiver-link-xgpon   unknown   virtual-port	<p>An indication of the general hardware type of the component.</p>
alias	string	<p>An 'alias' name for the component, as specified by a network manager, and provides a non-volatile 'handle' for the component.</p> <p>If an alias has been configured for this component in /hardware/component/alias, this node contains the configured value. If no such alias has been configured, the server may set the value of this node to a locally unique value.</p>
asset-id	string	<p>This node is a user-assigned asset tracking identifier for the component.</p> <p>If an asset tracking identifier has been configured for this component in /hardware/</p>

		component/asset-id, this node contains the configured value.
clei-code	string	Common Language Equipment Identifier code.
<a href="#">component-last-reset-info</a>	Not applicable	Reference to subtree parameters
contains-child	leafref : ../../component/name	The name of the contained component.
<a href="#">cpu-processor-data</a>	Not applicable	Reference to subtree parameters
description	string	A textual description of component. This node should contain a string that identifies the manufacturer's name for the component and should be set to a distinct value for each version or model of the component.
hardware-rev	string	The vendor-specific hardware revision string for the component. The preferred value is the hardware revision identifier actually printed on the component itself (if present).
is-fru	boolean	This node indicates whether or not this component is considered a 'field replaceable unit' by the vendor. If this node contains the value 'true', then this component identifies a field replaceable unit. For all components that are permanently contained within a field replaceable unit, the value 'false' should be returned for this node.
last-self-test-error	string	Indicates last self test error. As long as there has been no failing selftest, the value of this Leaf would be 00:00:00:00 Any other value indicates the last failed test information which needs to be further checked and correlated with OFLT(offline test) document.
local-network-address	string	Address assigned to chassis or board when connected to a local network, address assigned to chassis indicates system mac.
mfg-date	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	The date of manufacturing of the managed component.
mfg-name	string	The name of the manufacturer of this physical component. The preferred value is the manufacturer name string actually printed on the component itself (if present).  Note that comparisons between instances of the model-name, firmware-rev, software-

		<p>rev, and the serial-num nodes are only meaningful amongst component with the same value of mfg-name.</p> <p>If the manufacturer name string associated with the physical component is unknown to the server, then this node is not instantiated.</p>
model-name	string	<p>The vendor-specific model name identifier string associated with this physical component. The preferred value is the customer-visible part number, which may be printed on the component itself.</p> <p>If the model name string associated with the physical component is unknown to the server, then this node is not instantiated.</p>
<a href="#">nand-resource-data</a>	Not applicable	Reference to subtree parameters
parent	leafref : ../../component/name	<p>The name of the component that physically contains this component.</p> <p>If this leaf is not instantiated, it indicates that this component is not contained in any other component.</p> <p>In the event that a physical component is contained by more than one physical component (e.g., double-wide modules), this node contains the name of one of these components. An implementation <b>MUST</b> use the same name every time this node is instantiated.</p>
parent-rel-pos	int32 [0 .. 2147483647]	An indication of the relative position of this child component among all its sibling components. Sibling components are defined as components that share the same instance values of each of the 'parent' and 'class' nodes.
rx-power-high-alarm	int16	Unit: 0.1 dBm  Indicates the high alarm threshold value that is considered for raising rx-power alarms.
rx-power-high-warning	int16	Unit: 0.1 dBm  Indicates the high warning threshold value that is considered for raising rx-power alarms.
rx-power-low-alarm	int16	Unit: 0.1 dBm

		Indicates the low alarm threshold value that is considered for raising rx-power alarms.
rx-power-low-warning	int16	Unit: 0.1 dBm  Indicates the low warning threshold value that is considered for raising rx-power alarms.
<a href="#">sensor-data</a>	Not applicable	Reference to subtree parameters
serial-num	string	The vendor-specific serial number string for the component. The preferred value is the serial number string actually printed on the component itself (if present).  If a serial number has been configured for this component in /hardware/component/serial-num, this node contains the configured value.
<a href="#">software</a>	Not applicable	Reference to subtree parameters
<a href="#">state</a>	Not applicable	Reference to subtree parameters
temperature-high-alarm	int32	Unit: 0.001 degrees Celsius  Indicates the high alarm threshold value that is considered for raising tca alarms.
temperature-high-warning	int32	Unit: 0.001 degrees Celsius  Indicates the high warning threshold value that is considered for raising tca alarms.
temperature-low-alarm	int32	Unit: 0.001 degrees Celsius  Indicates the low alarm threshold value that is considered for raising tca alarms.
temperature-low-warning	int32	Unit: 0.001 degrees Celsius  Indicates the low warning threshold value that is considered for raising tca alarms.
<a href="#">temperature-sensor-thresholds</a>	Not applicable	Reference to subtree parameters
<a href="#">transceiver</a>	Not applicable	Reference to subtree parameters
<a href="#">transceiver-link</a>	Not applicable	Reference to subtree parameters
tx-bias-high-alarm	uint32	Unit: 1 uA  Indicates the high alarm threshold value that is considered for raising tca alarms.
tx-bias-high-warning	uint32	Unit: 1 uA

		Indicates the high warning threshold value that is considered for raising tca alarms.
tx-bias-low-alarm	uint32	Unit: 1 uA  Indicates the low alarm threshold value that is considered for raising tca alarms.
tx-bias-low-warning	uint32	Unit: 1 uA  Indicates the low warning threshold value that is considered for raising tca alarms.
tx-power-high-alarm	int16	Unit: 0.1 dBm  Indicates the high alarm threshold value that is considered for raising tca alarms.
tx-power-high-warning	int16	Unit: 0.1 dBm  Indicates the high warning threshold value that is considered for raising tca alarms.
tx-power-low-alarm	int16	Unit: 0.1 dBm  Indicates the low alarm threshold value that is considered for raising tca alarms.
tx-power-low-warning	int16	Unit: 0.1 dBm  Indicates the low warning threshold value that is considered for raising tca alarms.
uri	string	This node contains identification information about the component.  If uris have been configured for this component in /hardware/component/uri, this node contains the configured values.
voltage-high-alarm	uint16	Unit: 100 uV  Indicates the high alarm threshold value that is considered for raising tca alarms.
voltage-high-warning	uint16	Unit: 100 uV  Indicates the high warning threshold value that is considered for raising tca alarms.
voltage-low-alarm	uint16	Unit: 100 uV  Indicates the low alarm threshold value that is considered for raising tca alarms.
voltage-low-warning	uint16	Unit: 100 uV

		Indicates the low warning threshold value that is considered for raising tca alarms.
<a href="#">volume-resource-data</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> component-last-reset-info

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

#### Output Parameters:

Parameter	Type	Description
hardware-ready-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Indicates the time when hardware component is ready and operational.
reset-info	string	Provides additional information on the reset.
reset-reason	identityref One of: autonomous-sw-triggered-reset   hw-triggered-reset   operator-triggered-board-reset   operator-triggered-chassis-reset   power-button-reset   reset-button-reset   unknown-reset-reason	Indicates reason for hardware component reset.
reset-triggered-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Indicates the time the reset was triggered.
reset-type	identityref One of: hardware-reset   hardware-reset-to-default-configuration   hardware-reset-to-factory-datastore   hardware-reset-watchdog-expiry   hardware-reset-with-selftest   power-on-reset   unknown-reset	Indicates reset type of hardware component.

show hardware-state component <A> cpu-processor-data

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
<a href="#">memory-usage</a>	Not applicable	Reference to subtree parameters
number-of-active-sessions	uint32	The number of active user sessions
<a href="#">percent-cpu-usage</a>	Not applicable	Reference to subtree parameters
<a href="#">percent-historical-cpu-usage</a>	Not applicable	Reference to subtree parameters
<a href="#">system-load</a>	Not applicable	Reference to subtree parameters
<a href="#">task-counts</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> cpu-processor-data memory-usage

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
available-mem	uint64	Unit: KiB  Total available memory in kibibytes.
buffer-memory	uint64	Unit: KiB  Total buffer memory in kibibytes.

free-memory	uint64	Unit: KiB Total free memory in kibibytes.
free-swap	uint64	Unit: KiB Total free swap memory in kibibytes.
total-memory	uint64	Unit: KiB The total amount of memory in kibibytes.
total-swap-memory	uint64	Unit: KiB Total swap memory in kibibytes.
used-mem	uint64	Unit: KiB The amount of memory, in kibibytes, currently in use.
used-swap	uint64	Unit: KiB The amount of swap memory, in kibibytes, currently in use.

show hardware-state component <A> cpu-processor-data percent-cpu-usage

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
percent-cpu-core-processes	uint8 [0..100]	The percentage of time that the CPU was used for processes.
percent-cpu-hwio	uint8 [0..100]	The percentage of time that CPU was serving hardware interrupts.
percent-cpu-idle	uint8 [0..100]	The percentage of time that CPU was idle.
percent-cpu-io	uint8 [0..100]	The percentage of time that CPU core was waiting for I/O operations.

percent-cpu-nice	uint8 [0..100]	The percentage of time that CPU core was used for priority upgrade nice.
percent-cpu-swint	uint8 [0..100]	The percentage of time that CPU core was serving software interrupts.
percent-cpu-user	uint8 [0..100]	The percentage of time that CPU was used for user processes.

show hardware-state component <A> cpu-processor-data percent-historical-cpu-usage

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
percent-cpu-last-15 min	uint8 [0..100]	Average percentage of time that the CPU was used for processes during the last 15 minutes.
percent-cpu-last-1m in	uint8 [0..100]	Average percentage of time that the CPU was used for processes during the last 1 minute.
percent-cpu-last-5m in	uint8 [0..100]	Average percentage of time that the CPU was used for processes during the last 5 minutes.

show hardware-state component <A> cpu-processor-data system-load

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
average-system-load-15-min	decimal64	<p>Unit: decimal</p> <p>The average calculated system load over the last fifteen minutes. System load is a measurement of CPU over or under utilization, i.e., the number of processes in the running or waiting state. Some systems (like Linux) includes processes in the uninterruptible sleep state (e.g., those waiting for other system resources like disk I/O).</p>
average-system-load-1-min	decimal64	<p>Unit: decimal</p> <p>The average calculated system load over the last minute. System load is a measurement of CPU over or under utilization, i.e., the number of processes in the running or waiting state. Some systems (like Linux) includes processes in the uninterruptible sleep state (e.g., those waiting for other system resources like disk I/O).</p>
average-system-load-5-min	decimal64	<p>Unit: decimal</p> <p>The average calculated system load over the last five minutes. System load is a measurement of CPU over or under utilization, i.e., the number of processes in the running or waiting state. Some systems (like Linux) includes processes in the uninterruptible sleep state (e.g., those waiting for other system resources like disk I/O).</p>

show hardware-state component <A> cpu-processor-data task-counts

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name assigned to this component.</p> <p>This name is not required to be the same as entPhysicalName.</p>

**Output Parameters:**

Parameter	Type	Description
running-tasks	uint32	Number of running tasks.
sleeping-tasks	uint32	Number of sleeping tasks.
stopped-tasks	uint32	Number of stopped tasks.
total-tasks	uint32	The number of total tasks.
zombie-tasks	uint32	Number of tasks in zombie state.

show hardware-state component <A> nand-resource-data

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
bad-sectors	uint64	The number of bad, or unusable, sectors. This number can increase slowly over time, a high increasing number might lead to damage on the NAND storage.
max-erase-cycles	uint64	The maximum number times one sector has been erased. This number can increase slowly over time, a high increasing number might lead to damage on the NAND storage.

show hardware-state component <A> sensor-data

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
oper-status	enumeration One of: ok   unavailable   nonoperational	The operational status of the sensor.
units-display	string	A textual description of the data units that should be used in the display of the sensor value.
value	int32 [-10000000000 .. 10000000000]	The most recent measurement obtained by the server for this sensor.  A client that periodically fetches this node should also fetch the nodes 'value-type', 'value-scale', and 'value-precision', since they may change when the value is changed.
value-precision	int32 [-8 .. 9]	The number of decimal places of precision associated with the sensor value
value-scale	enumeration One of: yocto   zepto   atto   femto   pico   nano   micro   milli   units   kilo   mega   giga   tera   exa   peta   zetta   yotta	The (power of 10) scaling factor associated with the sensor value
value-timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	The time the status and/or value of this sensor was last obtained by the server.
value-type	enumeration One of: other   unknown   volts-AC   volts-DC   amperes   watts   hertz   celsius   percent-RH   rpm   cmm   truth-value	The type of data units associated with the sensor value
value-update-rate	uint32	Unit: milliseconds  An indication of the frequency that the server updates the associated 'value' node, representing in milliseconds. The value zero indicates: - the sensor value is updated on demand (e.g., when polled by the server for a get-request), - the sensor value is updated when the sensor value changes (event-driven), - the server does not know the update rate.

show hardware-state component <A> software

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
<a href="#">software</a>	Not applicable	Reference to subtree parameters
<a href="#">software-details</a>	Not applicable	Reference to subtree parameters
<a href="#">verify-software</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
name	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

<a href="#">config-download</a>	Not applicable	Reference to subtree parameters
<a href="#">download</a>	Not applicable	Reference to subtree parameters
<a href="#">revisions</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software <B> config-download

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
<a href="#">current-state</a>	Not applicable	Reference to subtree parameters
<a href="#">last-download-state</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software <B> config-download current-state

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA

		firmware. The name should represent this association, e.g. 'firmware'.
--	--	--

**Output Parameters:**

Parameter	Type	Description
software-name	string {length = 1..64} {pattern = [ ~-]*}	When: ../state != 'idle'  The name of the software revision currently being downloaded.
state	enumeration One of: idle   config-downloading   config-preparing	The current state of config-download.

show hardware-state component <A> software software <B> config-download last-download-state

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
<a href="#">failure</a>	Not applicable	Reference to subtree parameters
software-name	string {length = 1..64} {pattern = [ ~-]*}	When: ../state != 'none-attempted'  The name of the software revision associated with the last download attempt.
state	enumeration One of:	The result of the last config download.

	none-attempted   successful   failed   aborted	
--	--	--

show hardware-state component <A> software software <B> config-download last-download-state failure

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
failure-reason	identityref One of: general-error   no-failure	The reason the failure occurred.
failure-string	string	When: ../failure-reason != 'bbf-sim:no-failure'  A text string indicating the reason for the failure when either no defined reason exists or additional information is available beyond the definition of the reason.

show hardware-state component <A> software software <B> download

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.

		This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
<a href="#">current-state</a>	Not applicable	Reference to subtree parameters
<a href="#">last-download-state</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software <B> download current-state

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
download-progress	uint32	When: current()/../bbf-sim:state = 'in-progress'  The percentage of the cpe software revision currently being downloaded.
software-name	string {length = 1..64} {pattern = [ --]*}	When: ../state = 'in-progress'  The name of the software revision currently being downloaded.

state	enumeration One of: idle   in-progress	The current state of a software download.
timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time at which the download state machine entered its current state.

show hardware-state component <A> software software <B> download last-download-state

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

#### Output Parameters:

Parameter	Type	Description
<a href="#">failure</a>	Not applicable	Reference to subtree parameters
software-name	string {length = 1..64} {pattern = [ ~-]*}	When: ../state != 'none-attempted'  The name of the software revision associated with the last download attempt.
state	enumeration One of: none-attempted   successful   failed   aborted	The result of the last software download.
timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time at which the download state machine entered its current state.

show hardware-state component <A> software software <B> download last-download-state failure

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

**Output Parameters:**

Parameter	Type	Description
failure-reason	identityref One of: general-error   no-failure	The reason the failure occurred.
failure-string	string	When: ../failure-reason != 'bbf-sim:no-failure'  A text string indicating the reason for the failure when either no defined reason exists or additional information is available beyond the definition of the reason.

show hardware-state component <A> software software <B> revisions

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA

		firmware. The name should represent this association, e.g. 'firmware'.
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**Output Parameters:**

Parameter	Type	Description
<a href="#">revision</a>	Not applicable	Reference to subtree parameters
revisions-updated	boolean	Indicates that the revisions data has successfully updated by target physical entity

show hardware-state component <A> software software <B> revisions revision <C>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.

**Output Parameters:**

Parameter	Type	Description
name	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.
download-timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time and date when the software was downloaded.
is-active	boolean	Reports whether the associated software revision is active ('true') or inactive ('false').

is-committed	boolean	Reports whether the associated software revision is committed ('true') or uncommitted ('false').
is-valid	boolean	Reports whether the stored software revision is valid ('true') or invalid ('false').
product-code	string	Reports the product code information (software descriptor name) of the software revision, if applicable. Note that this leaf will have empty value if no valid product code for the revision is applicable.
source	string	source url path of descriptor file used in download of the particular revision
version	string	Reports the version of the software revision.

show hardware-state component <A> software software-details <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()/../../ hw:name]/bbf-sim:software/bbf- sim:software/bbf-sim:name	The name of the list software (example: application_software)

**Output Parameters:**

Parameter	Type	Description
name	leafref : /hw:hardware-state/ hw:component[hw:name=current()/../../ hw:name]/bbf-sim:software/bbf- sim:software/bbf-sim:name	The name of the list software (example: application_software)
<a href="#">revision</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software-details <B> revision <C>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software[bbf-sim:name=current()]/../.. bbf-sim:software/bbf-sim:name]/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.

**Output Parameters:**

Parameter	Type	Description
name	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software[bbf-sim:name=current()]/../.. bbf-sim:software/bbf-sim:name]/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.
<a href="#">activation-prediction</a>	Not applicable	Reference to subtree parameters
<a href="#">history-of-activation</a>	Not applicable	Reference to subtree parameters
<a href="#">sw-entity-details</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software-details <B> revision <C> activation-prediction

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.

		This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()/..././. hw:name]/bbf-sim:software/bbf- sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()/..././. hw:name]/bbf-sim:software/bbf- sim:software[bbf-sim:name=current()/..././. bbf-sim:software/bbf-sim:name]/bbf- sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.

**Output Parameters:**

Parameter	Type	Description
name	string	list of applications that will change version in the predicted in-service activation
summary	enumeration One of: issu   non-issu	summary

show hardware-state component <A> software software-details <B> revision <C> activation-prediction impacted-application <D>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()/..././. hw:name]/bbf-sim:software/bbf- sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()/.../././	The name of the software revision.

	hw:name]/bbf-sim:software/bbf-sim:software[bbf-sim:name=current()../../..../bbf-sim:software/bbf-sim:name]/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	
D	string	list of applications that will change version in the predicted in-service activation

**Output Parameters:**

Parameter	Type	Description
name	string	list of applications that will change version in the predicted in-service activation

show hardware-state component <A> software software-details <B> revision <C> history-of-activation

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()../../..../hw:name]/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()../../..../hw:name]/bbf-sim:software/bbf-sim:software[bbf-sim:name=current()../../..../bbf-sim:software/bbf-sim:name]/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.

**Output Parameters:**

Parameter	Type	Description
name	string	application names that have swapped version in the in-service activation
summary	enumeration	summary

	One of: issu   non-issu	
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show hardware-state component <A> software software-details <B> revision <C> history-of-activation impacted-application <D>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()/../../.. hw:name]/bbf-sim:software/bbf- sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()/../../.. hw:name]/bbf-sim:software/bbf- sim:software[bbf-sim:name=current()/../../.. bbf-sim:software/bbf-sim:name]/bbf- sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.
D	string	application names that have swapped version in the in-service activation

#### Output Parameters:

Parameter	Type	Description
name	string	application names that have swapped version in the in-service activation

show hardware-state component <A> software software-details <B> revision <C> sw-entity-details

#### Input Parameters:

Parameter	Type	Description
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A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software[bbf-sim:name=current()]/../.. bbf-sim:software/bbf-sim:name]/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.

**Output Parameters:**

Parameter	Type	Description
<a href="#">sw-entity</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software software-details <B> revision <C> sw-entity-details sw-entity <D>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()]/../.. hw:name]/bbf-sim:software/bbf-sim:software[bbf-sim:name=current()]/../.. bbf-sim:software/bbf-sim:name]/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.

D	string	Name of the software entity
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**Output Parameters:**

Parameter	Type	Description
name	string	Name of the software entity
name	string	Name of the applications contained in the software entity
issu-enabled	boolean	whether the software entity could be upgraded in-service or not
type	string	Type of the software entity (OS, APP, APP-DATA, SYSTEM-APP,...)
version	string	software version of the software entity

show hardware-state component <A> software software-details <B> revision <C> sw-entity-  
details sw-entity <D> application <E>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/ hw:component[hw:name=current()/../../.. hw:name]/bbf-sim:software/bbf- sim:software/bbf-sim:name	The name of the list software (example: application_software)
C	leafref : /hw:hardware-state/ hw:component[hw:name=current()/../../.. hw:name]/bbf-sim:software/bbf- sim:software[bbf-sim:name=current()/../../.. bbf-sim:software/bbf-sim:name]/bbf- sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision.
D	string	Name of the software entity
E	string	Name of the applications contained in the software entity

**Output Parameters:**

Parameter	Type	Description
name	string	Name of the applications contained in the software entity

show hardware-state component <A> software verify-software <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.

**Output Parameters:**

Parameter	Type	Description
name	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
<a href="#">verify-revision</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software verify-software <B> verify-revision <C>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
C	leafref	The name of the software revision present.

	: /hw:hardware-state/hw:component/ bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	
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**Output Parameters:**

Parameter	Type	Description
name	leafref : /hw:hardware-state/hw:component/ bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision present.
<a href="#">board-verify-status</a>	Not applicable	Reference to subtree parameters
<a href="#">verify-status</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software verify-software <B> verify-revision <C> board-verify-status <D>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
C	leafref : /hw:hardware-state/hw:component/ bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision present.
D	string	Software file is belonging to which hw entity.

**Output Parameters:**

Parameter	Type	Description
board-type	string	Software file is belonging to which hw entity.
<a href="#">sw-files-verify-status</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> software verify-software <B> verify-revision <C> board-verify-status <D> sw-files-verify-status <E>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
C	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision present.
D	string	Software file is belonging to which hw entity.
E	string {length = 1..64} {pattern = [ --]*}	Software file name which is belong to current software revision.

**Output Parameters:**

Parameter	Type	Description
sw-file-name	string {length = 1..64} {pattern = [ --]*}	Software file name which is belong to current software revision.
verify-failed-reason	string	When: ../verify-status = 'failed'  Software file digital verification failed reason.
verify-status	enumeration One of: successful   failed	Digital verification status of the file.

show hardware-state component <A> software verify-software <B> verify-revision <C> verify-status

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
C	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision present.

**Output Parameters:**

Parameter	Type	Description
root-cert-content	binary	Display the software revision's root certificate content in base64 encoded yangBinary format
verify-failed-reason	string	When: ../verify-status = 'verify-failed'  Software revision digital verification failed reason.
verify-status	enumeration One of: not-verified   in-progress   verify-success   verify-failed   verify-aborted	Display the software revision digital verification status.
verify-timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Display the time and date of software revision was digitally verified.

show hardware-state component <A> state

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
admin-state	enumeration One of: unknown   locked   shutting-down   unlocked	<p>The administrative state for this component.</p> <p>This node refers to a component's administrative permission to service both other components within its containment hierarchy as well other users of its services defined by means outside the scope of this module. Some components exhibit only a subset of the remaining administrative state values. Some components cannot be locked, and hence this node exhibits only the 'unlocked' state. Other components cannot be shutdown gracefully, and hence this node does not exhibit the 'shutting-down' state.</p>
alarm-state	bits	<p>The alarm state for this component. It does not include the alarms raised on child components within its containment hierarchy.</p>
oper-state	enumeration One of: unknown   disabled   enabled   testing	<p>The operational state for this component.</p> <p>Note that this node does not follow the administrative state. An administrative state of down does not predict an operational state of disabled.</p> <p>Note that some implementations may not be able to accurately report oper-state while the admin-state node has a value other than 'unlocked'. In these cases, this node MUST have a value of 'unknown'.</p>
standby-state	enumeration One of: unknown   hot-standby   cold-standby   providing-service	<p>The standby state for this component.</p> <p>Some components will exhibit only a subset of the remaining standby state values. If this component cannot operate in a standby role, the value of this node will always be 'providing-service'.</p>
state-last-changed	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	<p>The date and time when the value of any of the admin-state, oper-state, usage-state, alarm-state, or standby-state changed for this component.</p> <p>If there has been no change since the last re-initialization of the local system, this node contains the date and time of local system initialization. If there has been no change since the component was added to the local</p>

		system, this node contains the date and time of the insertion.
--	--	--

show hardware-state component <A> temperature-sensor-thresholds

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name assigned to this component.</p> <p>This name is not required to be the same as entPhysicalName.</p>

**Output Parameters:**

Parameter	Type	Description
threshold-high	int32	<p>Unit: degrees Celsius</p> <p>The threshold is involved in protecting the system against overheating. The threshold-high is the threshold to raise the overheat alarm.</p>
threshold-high-clear	int32	<p>Unit: degrees Celsius</p> <p>The threshold is involved in indicating the overheating is eliminated. The threshold-high-clear is the threshold to clear the overheat alarm.</p>
threshold-high-warning	int32	<p>Unit: degrees Celsius</p> <p>The threshold is involved in monitoring the system against overheating.</p>
threshold-high-warning-clear	int32	<p>Unit: degrees Celsius</p> <p>The threshold indicates monitoring the system against overheating is eliminated.</p>
threshold-low	int32	<p>Unit: degrees Celsius</p> <p>The threshold is involved in protecting the system against overcooling. The threshold-low is the threshold to raise the overcool alarm.</p>
threshold-low-clear	int32	<p>Unit: degrees Celsius</p>

		The threshold is involved in indicating the overcooling is eliminated. The threshold-low-clear is the threshold to clear the overcool alarm.
threshold-low-warning	int32	Unit: degrees Celsius  The threshold is involved in monitoring the system against overcooling.
threshold-low-warning-clear	int32	Unit: degrees Celsius  The threshold indicates monitoring the system against overcooling is eliminated.

show hardware-state component <A> transceiver

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
<a href="#">diagnostics</a>	Not applicable	Reference to subtree parameters
<a href="#">identifiers-and-codes</a>	Not applicable	Reference to subtree parameters
inventory-status	identityref One of: a0-checksum-failed   a0-read-failed   a2-checksum-failed   a2-not-supported   a2-read-failed   no-error   sw-error	Indicates status of reading transceiver inventory data from A0 bank of EEPROM
<a href="#">thresholds</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> transceiver diagnostics

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string	<p>The name assigned to this component.</p> <p>This name is not required to be the same as entPhysicalName.</p>
---	--------	---

**Output Parameters:**

Parameter	Type	Description
status	identityref One of: a0-checksum-failed   a0-read-failed   a2-checksum-failed   a2-not-supported   a2-read-failed   no-error   sw-error	Indicates status of reading transceiver diagnostics monitoring data from A2 bank of EEPROM.
supply-voltage	uint16	<p>Unit: 100 uV</p> <p>Internally measured transceiver supply voltage. Practical considerations to be defined by transceiver manufacturer will tend to limit the actual bounds of the supply voltage measurement. Accuracy is vendor specific but must be better than +/- 3% of the manufacturer's nominal value over specified operating temperature and voltage. Note that in some transceivers, transmitter supply voltage and receiver supply voltage are isolated. In that case, only one supply is monitored. Refer to the device specification for more detail.</p>
temperature	int16	<p>Unit: 1/256 degrees Celsius</p> <p>Internally measured transceiver temperature Temperature accuracy is vendor specific but must be better than +/- 3 degrees Celsius over specified operating temperature and voltage.</p>

show hardware-state component <A> transceiver identifiers-and-codes

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name assigned to this component.</p> <p>This name is not required to be the same as entPhysicalName.</p>

**Output Parameters:**

Parameter	Type	Description
<a href="#">compliance-codes</a>	Not applicable	Reference to subtree parameters
physical-device	identityref One of: cdfp-style1-style2   cdfp-style3   cxp-or-later   cxp2-or-later   dwdm-sfp   gbic   micro-qsfp   qsfp   qsfp-dd   qsfp-plus-or-later   qsfp28- or-later   sff   sfp   shielded-mini-multilane- hd-4x   shielded-mini-multilane-hd-4x- fanout-cable   shielded-mini-multilane-hd-8x   shielded-mini-multilane-hd-8x-fanout-cable   unknown-physical-device   vendor-specific   x2   xbi-300-pin   xepak   xff   xfp   xfp-e   xpak	The identifier value specifies the physical device described by two-wire interface information.

show hardware-state component <A> transceiver identifiers-and-codes compliance-codes

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
escon	enumeration One of: not-applicable   escon-mmfr   escon-smfr  default 'not-applicable'	ESCON Compliance Codes.
ethernet	enumeration One of: not-applicable   base-px   base-bx10   100base-fx   100base-lx-or-lx-10   1000base-t   1000base-cx   1000base-lx   1000base-sx  default 'not-applicable'	Ethernet Compliance Codes.

fiber-channel-technology	<p>enumeration One of: not-applicable   shortwave-laser-linear   longwave-laser-lc   electrical-inter-enclosure   electrical-intra-enclosure   shortwave-laser-without-ofc   shortwave-laser-with-ofc   longwave-laser-ll</p> <p>default 'not-applicable'</p>	Fibre channel technology.
fibre-channel-link-length	<p>enumeration One of: not-applicable   very-long-distance   short-distance   intermediate-distance   long-distance   medium-distance</p> <p>default 'not-applicable'</p>	Fibre channel link length.
fibre-channel-speed	<p>enumeration One of: not-applicable   1200-mbytes-sec   800-mbytes-sec   1000-mbytes-sec   400-mbytes-sec   3200-mbytes-sec   200-mbytes-sec   100-mbytes-sec</p> <p>default 'not-applicable'</p>	Fibre channel speed.
fibre-channel-transmission-media	<p>enumeration One of: not-applicable   twin-axial-pair   twin-twisted-pair   miniature-coax   video-coax   multimode-62.5um   multimode-50um   single-mode</p> <p>default 'not-applicable'</p>	Fibre channel transmission media.
infiniband	<p>enumeration One of: not-applicable   1x-sx   1x-lx   1x-copper-active   1x-copper-passive</p> <p>default 'not-applicable'</p>	Infiniband Compliance Codes.
sfp-plus-cable-technology	<p>enumeration One of: not-applicable   active-cable   passive-cable</p> <p>default 'not-applicable'</p>	SFP+ cable technology.

sonet	enumeration One of: not-applicable   oc-192-short-reach   sonet-reach-specifier-bit1   sonet-reach-specifier-bit2   oc-48-long-reach   oc-48-intermediate-reach   oc-48-short-reach   oc-12-single-mode-long-reach   oc-12-single-mode-intermediate-reach   oc-12-short-reach   oc-3-single-mode-long-reach   oc-3-single-mode-intermediate-reach   oc-3-short-reach  default 'not-applicable'	SONET Compliance Codes.
ten-gigabit-ethernet	enumeration One of: not-applicable   10g-base-er   10g-base-lrm   10g-base-lr   10g-base-sr  default 'not-applicable'	10G Ethernet Compliance Codes.

show hardware-state component <A> transceiver thresholds

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
rx-power-high-alarm	uint16	Unit: 0.1 uW  The power above which will trigger a high receive power alarm.
rx-power-high-warning	uint16	Unit: 0.1 uW  The power above which will trigger a high receive power warning.
rx-power-low-alarm	uint16	Unit: 0.1 uW

		The power below which will trigger a low receive power alarm.
rx-power-low-warning	uint16	Unit: 0.1 uW  The power below which will trigger a low receive power warning.
supply-voltage-high-alarm	uint16	Unit: 100 uV  The voltage above which will trigger a high supply voltage alarm.
supply-voltage-high-warning	uint16	Unit: 100 uV  The voltage above which will trigger a high supply voltage warning.
supply-voltage-low-alarm	uint16	Unit: 100 uV  The voltage below which will trigger a low supply voltage alarm.
supply-voltage-low-warning	uint16	Unit: 100 uV  The voltage below which will trigger a low supply voltage warning.
temperature-high-alarm	int16	Unit: 1/256 degrees Celsius  The temperature above which will trigger a high temperature alarm.
temperature-high-warning	int16	Unit: 1/256 degrees Celsius  The temperature above which will trigger a high temperature warning.
temperature-low-alarm	int16	Unit: 1/256 degrees Celsius  The temperature below which will trigger a low temperature alarm.
temperature-low-warning	int16	Unit: 1/256 degrees Celsius  The temperature below which will trigger a low temperature warning.
tx-bias-high-alarm	uint16	Unit: 2 uA  The bias current above which will trigger a high transmit bias alarm.
tx-bias-high-warning	uint16	Unit: 2 uA

		The bias current above which will trigger a high transmit bias warning.
tx-bias-low-alarm	uint16	Unit: 2 uA  The bias current below which will trigger a low transmit bias alarm.
tx-bias-low-warning	uint16	Unit: 2 uA  The bias current below which will trigger a low transmit bias warning.
tx-power-high-alarm	uint16	Unit: 0.1 uW  The power above which will trigger a high transmit power alarm.
tx-power-high-warning	uint16	Unit: 0.1 uW  The power above which will trigger a high transmit power warning.
tx-power-low-alarm	uint16	Unit: 0.1 uW  The power below which will trigger a low transmit power alarm.
tx-power-low-warning	uint16	Unit: 0.1 uW  The power below which will trigger a low transmit power warning.

show hardware-state component <A> transceiver-link

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
<a href="#">diagnostics</a>	Not applicable	Reference to subtree parameters
wavelength	uint32	Unit: nm

		For optical variants, this denotes the nominal transmitter output wavelength at room temperature.
--	--	---

show hardware-state component <A> transceiver-link diagnostics

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
rx-power-dbm	int16	Unit: 0.1 dBm  Measured received (RX) optical power in dBm. Absolute accuracy is dependent upon the exact optical wavelength. For the vendor specified wavelength, accuracy shall be better than +/- 3dB over specified temperature and voltage. This accuracy shall be maintained for input power levels up to the lesser of maximum transmitted or maximum received optical power per the appropriate standard. It shall be maintained down to the minimum transmitted power minus cable plant loss (insertion loss or passive loss) per the appropriate standard. Absolute accuracy beyond this minimum required received input optical power range is vendor specific.
status	identityref One of: a0-checksum-failed   a0-read-failed   a2-checksum-failed   a2-not-supported   a2-read-failed   no-error   sw-error	Indicates status of reading transceiver-link diagnostics monitoring data from A2 bank of EEPROM.
tx-bias	uint16	Unit: 2 uA  Measured TX bias current in mA. Accuracy is vendor specific but must be better than +/- 10% of the manufacturer's nominal value

		over specified operating temperature and voltage.
tx-power-dbm	int16	Unit: 0.1 dBm  Measured TX output power in dBm. Data is assumed to be based on measurement of laser monitor photodiode current. It is factory calibrated to absolute units using the most representative fiber output type. Accuracy is vendor specific but must be better than +/- 3dB over specified temperature and voltage.

show hardware-state component <A> volume-resource-data

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

**Output Parameters:**

Parameter	Type	Description
<a href="#">volume-resource-list</a>	Not applicable	Reference to subtree parameters

show hardware-state component <A> volume-resource-data volume-resource-list <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string	The name of the volume or partition.

**Output Parameters:**

---

Parameter	Type	Description
name	string	The name of the volume or partition.
free	uint64	Unit: Kilobytes The amount of free size of volume or partition.
size	uint64	Unit: Kilobytes The total size of this volume or partition.

## 3.11 interfaces-state commands

### 3.11.1 Command Tree

```
|-- show interfaces-state
|-- interface <A>
|   |-- name
|   |-- admin-status
|   |-- if-index
|   |-- oper-status
|   |-- type
|   |-- aggregation-port
|       |-- aggregate-or-individual
|       |-- aggregation-port-lacp
|           |-- actor-oper-key
|           |-- actor-oper-state
|           |-- actor-port
|           |-- actor-system-id
|           |-- aggregation-port-stats
|               |-- illegal-rx
|               |-- lacp-pdu-rx
|               |-- lacp-pdu-tx
|               |-- marker-pdu-rx
|               |-- marker-pdu-tx
|               |-- marker-response-pdu-rx
|               |-- marker-response-pdu-tx
|               |-- stats-id
|               |-- unknown-rx
|           |-- attached-agg-id
|           |-- partner-oper-key
|           |-- partner-oper-port
|           |-- partner-oper-port-priority
|           |-- partner-oper-state
|           |-- partner-oper-system-id
|           |-- partner-oper-system-priority
|           |-- selected-agg-id
|       |-- id
|   |-- aggregator
|       |-- aggregate-or-individual
|       |-- aggregator-lacp
|           |-- actor-oper-key
|           |-- agg-mac-address
|           |-- agg-mac-port
|           |-- partner-oper-key
|           |-- partner-system-id
|           |-- partner-system-priority
|       |-- collector-max-delay
|       |-- data-rate
|       |-- description
|       |-- id
|       |-- oper-state
|       |-- statistics
|           |-- broadcast-frames-rx
```

---

```
|-- broadcast-frames-tx
|-- frames-discarded-on-rx
|-- frames-discarded-on-tx
|-- frames-rx
|-- frames-tx
|-- frames-with-rx-errors
|-- frames-with-tx-errors
|-- multicast-frames-rx
|-- multicast-frames-tx
|-- octets-rx
|-- octets-tx
|-- unknown-protocol-frames
|-- time-of-last-oper-change
|-- cfm-stack
|-- cfm-stack <B><C>
    |-- md-level
    |-- direction
    |-- mac-address
    |-- mep
    |-- maintenance-group-id
    |-- mep-id
    |-- mhf
    |-- ma-id
    |-- md-id
|-- control-protocol
    |-- name
|-- dormant-state-reason
|-- Ethernet
    |-- auto-negotiation
    |-- status
    |-- duplex
    |-- macc-pause-control
    |-- speed
    |-- tca
    |-- intervals-15min
|-- higher-layer-if
|-- ipv4
    |-- address <B>
    |-- ip
    |-- netmask
    |-- origin
    |-- prefix-length
|-- ipv6
    |-- address <B>
    |-- ip
    |-- prefix-length
    |-- origin
    |-- status
|-- last-change
|-- lower-layer-if
|-- performance
    |-- intervals-15min
```

```
|-- current
|   |-- ethernet
|       |-- in-pkts-errors-fcs
|       |-- in-1024-to-1518-octets-pkts
|       |-- in-128-to-255-octets-pkts
|       |-- in-256-to-511-octets-pkts
|       |-- in-512-to-1023-octets-pkts
|       |-- in-64-octets-pkts
|       |-- in-65-to-127-octets-pkts
|       |-- in-broadcast-pkts
|       |-- in-crc-errored-pkts
|       |-- in-discards
|       |-- in-drop-events
|       |-- in-dropped-bytes
|       |-- in-errors
|       |-- in-multicast-pkts
|       |-- in-octets
|       |-- in-oversize-pkts
|       |-- in-pkts
|       |-- in-total-pkts
|       |-- in-undersize-pkts
|       |-- in-unicast-pkts
|       |-- in-unknown-protos
|       |-- out-1024-to-1518-octets-pkts
|       |-- out-128-to-255-octets-pkts
|       |-- out-256-to-511-octets-pkts
|       |-- out-512-to-1023-octets-pkts
|       |-- out-64-octets-pkts
|       |-- out-65-to-127-octets-pkts
|       |-- out-broadcast-pkts
|       |-- out-crc-errored-pkts
|       |-- out-discards
|       |-- out-drop-events
|       |-- out-dropped-bytes
|       |-- out-errors
|       |-- out-multicast-pkts
|       |-- out-octets
|       |-- out-oversize-pkts
|       |-- out-pkts
|       |-- out-total-pkts
|       |-- out-undersize-pkts
|       |-- out-unicast-pkts
|-- history <B>
|   |-- interval-number
|   |-- ethernet
|       |-- in-errors-mac-internal
|       |-- in-giant-pkts
|       |-- in-pkts-errors-fcs
|       |-- out-errors-mac-internal
|-- in-1024-to-1518-octets-pkts
|-- in-128-to-255-octets-pkts
|-- in-256-to-511-octets-pkts
```

```
|-- in-512-to-1023-octets-pkts
|-- in-64-octets-pkts
|-- in-65-to-127-octets-pkts
|-- in-broadcast-pkts
|-- in-crc-errored-pkts
|-- in-discards
|-- in-drop-events
|-- in-dropped-bytes
|-- in-errors
|-- in-multicast-pkts
|-- in-octets
|-- in-oversize-pkts
|-- in-pkts
|-- in-total-pkts
|-- in-undersize-pkts
|-- in-unicast-pkts
|-- in-unknown-protos
|-- invalid-data-flag
|-- measured-time
|-- out-1024-to-1518-octets-pkts
|-- out-128-to-255-octets-pkts
|-- out-256-to-511-octets-pkts
|-- out-512-to-1023-octets-pkts
|-- out-64-octets-pkts
|-- out-65-to-127-octets-pkts
|-- out-broadcast-pkts
|-- out-crc-errored-pkts
|-- out-discards
|-- out-drop-events
|-- out-dropped-bytes
|-- out-errors
|-- out-multicast-pkts
|-- out-octets
|-- out-oversize-pkts
|-- out-pkts
|-- out-total-pkts
|-- out-undersize-pkts
|-- out-unicast-pkts
|-- time-stamp
|-- non-valid-intervals
|-- number-of-intervals
|-- phys-address
|-- port-layer-if
|-- rmon-statistics
|-- etherStatsBroadcastPkts
|-- etherStatsCollisions
|-- etherStatsCRCAlignErrors
|-- etherStatsFragments
|-- etherStatsJabbers
|-- etherStatsMulticastPkts
|-- etherStatsOctets
|-- etherStatsOversizePkts
```

```
|-- etherStatsPkts
|-- etherStatsPkts1024to1518Octets
|-- etherStatsPkts128to255Octets
|-- etherStatsPkts256to511Octets
|-- etherStatsPkts512to1023Octets
|-- etherStatsPkts64Octets
|-- etherStatsPkts65to127Octets
|-- etherStatsUndersizePkts
|-- speed
|-- speed-monitoring
|-- data <B>
|   |-- monitoring-period-length
|   |-- current
|     |-- receive-datarate
|     |-- transmit-datarate
|   |-- history <C>
|     |-- interval-number
|     |-- invalid-data-flag
|     |-- measured-time
|     |-- receive-datarate
|     |-- time-stamp
|     |-- top-utilized-child-interfaces
|       |-- in <D>
|         |-- top
|         |-- child-interface-name
|         |-- in-data-rate
|       |-- out <D>
|         |-- top
|         |-- child-interface-name
|         |-- out-data-rate
|     |-- transmit-broadcast-datarate
|     |-- transmit-datarate
|     |-- transmit-multicast-datarate
|     |-- transmit-unicast-datarate
|   |-- non-valid-intervals
|   |-- number-of-intervals
|-- statistics
|-- discontinuity-time
|-- ethernet
|   |-- in-errors-mac-internal
|   |-- in-giant-pkts
|   |-- in-pkts-errors-fcs
|   |-- out-errors-mac-internal
|-- in-broadcast-pkts
|-- in-discards
|-- in-dropped-bytes
|-- in-errors
|-- in-multicast-pkts
|-- in-octets
|-- in-pkts
|-- in-unicast-pkts
|-- in-unknown-protos
```

```
|-- out-broadcast-pkts
|-- out-discards
|-- out-dropped-bytes
|-- out-errors
|-- out-multicast-pkts
|-- out-octets
|-- out-pkts
|-- out-unicast-pkts
|-- tm-root
|-- queue <B>
|   |-- local-queue-id
|   |-- performance
|       |-- intervals-15min
|           |-- current
|               |-- color
|                   |-- green
|                       |-- drop-octets
|                       |-- drop-pkts
|                       |-- out-octets
|                       |-- out-pkts
|                   |-- red
|                       |-- drop-octets
|                       |-- drop-pkts
|                       |-- out-octets
|                       |-- out-pkts
|                   |-- yellow
|                       |-- drop-octets
|                       |-- drop-pkts
|                       |-- out-octets
|                       |-- out-pkts
|               |-- drop-octets
|               |-- drop-pkts
|               |-- out-octets
|               |-- out-pkts
|-- history <C>
|   |-- interval-number
|   |-- color
|       |-- green
|           |-- drop-octets
|           |-- drop-pkts
|           |-- out-octets
|           |-- out-pkts
|       |-- red
|           |-- drop-octets
|           |-- drop-pkts
|           |-- out-octets
|           |-- out-pkts
|       |-- yellow
|           |-- drop-octets
|           |-- drop-pkts
|           |-- out-octets
|           |-- out-pkts
```

```

|-- drop-octets
|-- drop-pkts
|-- invalid-data-flag
|-- measured-time
|-- out-octets
|-- out-pkts
|-- time-stamp
|-- non-valid-intervals
|-- number-of-intervals
|-- statistics
|-- color
|-- green
|-- drop-octets
|-- drop-pkts
|-- out-octets
|-- out-pkts
|-- red
|-- drop-octets
|-- drop-pkts
|-- out-octets
|-- out-pkts
|-- yellow
|-- drop-octets
|-- drop-pkts
|-- out-octets
|-- out-pkts
|-- drop-octets
|-- drop-pkts
|-- out-octets
|-- out-pkts

```

### 3.11.2 Commands

show interfaces-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">interface</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A>

#### Input Parameters:

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
name	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>
admin-status	enumeration One of: up   down   testing	<p>The desired state of the interface.</p> <p>This leaf has the same read semantics as ifAdminStatus.</p>
if-index	int32 [1..2147483647]	The ifIndex value for the ifEntry represented by this interface.
oper-status	enumeration One of: up   down   testing   unknown   dormant   not-present   lower-layer-down	<p>The current operational state of the interface.</p> <p>This leaf has the same semantics as ifOperStatus.</p>
type	identityref One of: channel-v-enet   channelized-ethernetCsmacd   ethernetCsmacd   ieee8023adLag   ipForward   I2-termination   vlan-sub-interface	The type of the interface.
<a href="#">aggregation-port</a>	Not applicable	Reference to subtree parameters
<a href="#">aggregator</a>	Not applicable	Reference to subtree parameters
<a href="#">cfm-stack</a>	Not applicable	Reference to subtree parameters

<a href="#">control-protocol</a>	Not applicable	Reference to subtree parameters
dormant-state-reason	enumeration One of: turn-off-laser-by-cfm-ais   turn-off-laser-by-eld   turn-off-laser-by-lag-sub-group   turn-off-laser-by-cross-lag-dac-failure	A list of dormant state reason's.
<a href="#">Ethernet</a>	Not applicable	Reference to subtree parameters
higher-layer-if	leafref : /if:interfaces-state/if:interface/if:name	A list of references to interfaces layered on top of this interface.
<a href="#">ipv4</a>	Not applicable	Reference to subtree parameters
<a href="#">ipv6</a>	Not applicable	Reference to subtree parameters
last-change	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time the interface entered its current operational state. If the current state was entered prior to the last re-initialization of the local network management subsystem, then this node is not present.
lower-layer-if	leafref : /if:interfaces-state/if:interface/if:name	A list of references to interfaces layered underneath this interface.
<a href="#">performance</a>	Not applicable	Reference to subtree parameters
phys-address	string {pattern = ([0-9a-fA-F]{2}):([0-9a-fA-F]{2})*)?}	The interface's address at its protocol sub-layer. For example, for an 802.x interface, this object normally contains a Media Access Control (MAC) address. The interface's media-specific modules must define the bit  and byte ordering and the format of the value of this object. For interfaces that do not have such an address (e.g., a serial line), this node is not present.
port-layer-if	leafref : /hw:hardware/hw:component/hw:name	A list of references to the physical port component used to support this interface.
<a href="#">rmon-statistics</a>	Not applicable	Reference to subtree parameters
speed	uint64	Unit: bits/second  An estimate of the interface's current bandwidth in bits per second. For interfaces that do not vary in bandwidth or for those where no accurate estimation can be made, this node should contain the nominal bandwidth. For interfaces that have no concept of bandwidth, this node is not present.

<a href="#">speed-monitoring</a>	Not applicable	Reference to subtree parameters
<a href="#">statistics</a>	Not applicable	Reference to subtree parameters
<a href="#">tm-root</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> aggregation-port

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
aggregate-or-individual	boolean	Indicates whether the Aggregation Port is able to Aggregate (TRUE) or is only able to operate as an Individual link (FALSE).
<a href="#">aggregation-port-lacp</a>	Not applicable	Reference to subtree parameters
id	int32	The unique identifier allocated to this Aggregation Port by the local System. This attribute identifies an Aggregation Port instance among the subordinate managed objects of the containing object.

show interfaces-state interface <A> aggregation-port aggregation-port-lacp

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

		A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
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**Output Parameters:**

Parameter	Type	Description
actor-oper-key	uint16	The current operational value of the Key for the Aggregation Port. The meaning of particular Key values is of local significance.
actor-oper-state	bits	Corresponding to the operational values of Actor_State (5.4.2) as transmitted by the Actor in LACPDUs. The first bit corresponds to bit 0 of Actor_State (LACP_Activity), the second bit corresponds to bit 1 (LACP_Timeout), the third bit corresponds to bit 2 (Aggregation), the fourth bit corresponds to bit 3 (Synchronization), the fifth bit corresponds to bit 4 (Collecting), the sixth bit corresponds to bit 5 (Distributing), the seventh bit corresponds to bit 6 (Defaulted), and the eighth bit corresponds to bit 7 (Expired).
actor-port	int16	The port number locally assigned to the Aggregation Port. The port number is communicated in LACPDUs as the Actor_Port.
actor-system-id	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	Defines the value of the System ID for the System that contains this Aggregation Port.
<a href="#">aggregation-port-params</a>	Not applicable	Reference to subtree parameters
attached-agg-id	int16	The identifier value of the Aggregator to which this Aggregation Port is currently attached. Zero indicates that the Aggregation Port is not currently attached to an Aggregator.
partner-oper-key	uint16	The current operational value of the Key for the protocol Partner. The value of this attribute may contain the manually configured value carried in partner-admin-key if there is no protocol Partner.

partner-oper-port	uint16 [0..65535]	The operational port number assigned to this Aggregation Port by the Aggregation Ports protocol Partner. The value of this attribute may contain the manually configured value carried in partner-admin-port if there is no protocol Partner.
partner-oper-port-priority	uint16 [0..65535]	The priority value assigned to this Aggregation Port by the Partner. The value of this attribute may contain the manually configured value carried in partner-admin-port-priority if there is no protocol Partner.
partner-oper-state	bits	Corresponding to the current values of Actor_State (5.4.2) in the most recently received LACPDU transmitted by the protocol Partner. The first bit corresponds to bit 0 of Actor_State (LACP_Activity), the second bit corresponds to bit 1 (LACP_Timeout), the third bit corresponds to bit 2 (Aggregation), the fourth bit corresponds to bit 3 (Synchronization), the fifth bit corresponds to bit 4 (Collecting), the sixth bit corresponds to bit 5 (Distributing), the seventh bit corresponds to bit 6 (Defaulted), and the eighth bit corresponds to bit 7 (Expired).
partner-oper-system-id	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	Represents the current value of the Aggregation Ports protocol Partners System ID. A value of zero indicates that there is no known protocol Partner. The value of this attribute may contain the manually configured value carried in partner-admin-system-id if there is no protocol Partner.
partner-oper-system-priority	uint16 [0..65535]	Indicates the operational value of priority associated with the Partners System ID. The value of this attribute may contain the manually configured value carried in partner-admin-system-priority if there is no protocol Partner.
selected-agg-id	int16	The identifier value of the Aggregator that this Aggregation Port has currently selected. Zero indicates that the Aggregation Port has not selected an Aggregator, either because it is in the process of detaching from an Aggregator or because there is no suitable Aggregator available for it to select.

show interfaces-state interface <A> aggregation-port aggregation-port-lacp aggregation-port-stats

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
illegal-rx	uint64	The number of frames received that carry the Slow Protocols Ethernet Type value (IEEE Std 802.3 Annex 57A.4), but contain a badly formed PDU or an illegal value of Protocol Subtype (IEEE Std 802.3 Annex 57A.3).
lacp-pdu-rx	uint64	The number of valid LACPDUs received on this Aggregation Port.
lacp-pdu-tx	uint64	The number of LACPDUs transmitted on this Aggregation Port.
marker-pdu-rx	uint64	The number of valid Marker PDUs received on this Aggregation Port.
marker-pdu-tx	uint64	The number of Marker PDUs transmitted on this Aggregation Port.
marker-response-pdu-rx	uint64	The number of valid Marker Response PDUs received on this Aggregation Port.
marker-response-pdu-tx	uint64	The number of Marker Response PDUs transmitted on this Aggregation Port.
stats-id	int16	Identifies an Aggregation Port Statistics object instance among the subordinate managed objects of the containing object. The value allocated to this attribute shall be the same as the containing aggregation-port managed object.

unknown-rx	uint64	The number of frames received that either: a) Carry the Slow Protocols Ethernet Type value (IEEE Std 802.3 Annex 57A.4), but contain an unknown PDU, or b) Are addressed to the Slow Protocols group MAC Address (IEEE Std 802.3 Annex 57A.3), but do not carry the Slow Protocols Ethernet Type.
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show interfaces-state interface <A> aggregator

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.

**Output Parameters:**

Parameter	Type	Description
aggregate-or-individual	boolean	Indicates whether the Aggregator represents an Aggregate (TRUE) or an Individual link (FALSE).
<a href="#">aggregator-lacp</a>	Not applicable	Reference to subtree parameters
collector-max-delay	int16	Defines the maximum delay, in tens of microseconds, that may be imposed by the Frame Collector between receiving a frame from an Aggregator Parser, and either delivering the frame to its MAC Client or discarding the frame (see 5.2.3.1.1).
data-rate	uint64	The current data rate, in bits per second, of the aggregate link. The value is calculated as N times the data rate of a single link in the aggregation, where N is the number of active links.
description	string {length = 0..255}	A human-readable text string containing information about the Aggregator. This

		string could include information about the distribution algorithm in use on this Aggregator; for example, (Aggregator 1, Dist Alg equals Dest MAC address). The contents are vendor specific.
id	uint32	The unique identifier allocated to this Aggregator by the local System. This attribute identifies an Aggregator instance.
oper-state	enumeration One of: up   down	Defines the operational state of the Aggregator. An operational state of UP indicates that the Aggregator is available for use by the MAC Client; a value of DOWN indicates that the Aggregator is not available for use by the MAC Client.
<a href="#">statistics</a>	Not applicable	Reference to subtree parameters
time-of-last-oper-change	uint32	The value of aTimeSinceSystemReset (See IEEE Std 802.3 Annex F.2.1) at the time the interface entered its current operational state. If the current state was entered prior to the last re-initialization of the local network management subsystem, then this object contains a value of zero.

show interfaces-state interface <A> aggregator aggregator-lacp

#### Input Parameters:

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

#### Output Parameters:

Parameter	Type	Description
actor-oper-key	uint16	The current operational value of the Key for the Aggregator. The administrative Key value may differ from the operational Key

		value for the reasons discussed in 5.6.2. The meaning of particular Key values is of local significance.
agg-mac-address	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	The MAC address assigned to the Aggregator.
agg-mac-port	string {length = 1..100} {pattern = [!#&-Z\^_~*]}	Logical port name associated with the aggregator MAC address.
partner-oper-key	uint16	The current operational value of the Key for the Aggregators current protocol Partner. If the aggregation is manually configured, this Key value will be a value assigned by the local System.
partner-system-id	string {pattern = [0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}}	Consisting of the unique identifier for the current protocol Partner of this Aggregator. A value of zero indicates that there is no known Partner. If the aggregation is manually configured, this System ID value will be a value assigned by the local System.
partner-system-priority	uint16	Indicates the priority value associated with the Partners System ID. If the aggregation is manually configured, this System Priority value will be a value assigned by the local System.

show interfaces-state interface <A> aggregator statistics

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.

**Output Parameters:**

Parameter	Type	Description
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broadcast-frames-rx	uint64	A count of the broadcast data frames received by this Aggregator, from the Aggregation Ports that are (or have been) members of the aggregation. The count does not include frames that carry LACP or Marker PDUs (6.3.3.1.2, 6.3.3.1.3, 6.3.3.1.4), illegal or unknown protocol frames (6.3.3.1.5, 6.3.3.1.6), or frames discarded by the Collection function of the Aggregator (6.3.1.1.26).
broadcast-frames-tx	uint64	A count of the broadcast data frames transmitted by this Aggregator on all Aggregation Ports that are (or have been) members of the aggregation. The count does not include frames transmitted by the Aggregator that carry LACP or Marker PDUs (6.3.3.1.7, 6.3.3.1.8, 6.3.3.1.9). However, it includes frames discarded by the Distribution function of the Aggregator (6.3.1.1.25).
frames-discarded-on-rx	uint64	A count of data frames, received on all ports that are (or have been) members of the aggregation, that were discarded by the Collection function of the Aggregator as they were received on ports whose Collection function was disabled.
frames-discarded-on-tx	uint64	A count of data frames requested to be transmitted by this Aggregator that were discarded by the Distribution function of the Aggregator when conversations are re-allocated to different ports, due to the requirement to ensure that the conversations are flushed on the old ports in order to maintain proper frame ordering (43A.3), or discarded as a result of excessive collisions by ports that are (or have been) members of the aggregation.
frames-rx	uint64	A count of the data frames received by this Aggregator, from the Aggregation Ports that are (or have been) members of the aggregation. The count does not include frames that carry LACP or Marker PDUs (6.3.3.1.2, 6.3.3.1.3, 6.3.3.1.4), or frames discarded by the Collection function of the Aggregator (6.3.1.1.26).
frames-tx	uint64	A count of the data frames transmitted by this Aggregator on all Aggregation Ports that are (or have been) members of the aggregation. The count does not include

		frames transmitted by the Aggregator that carry LACP or Marker PDUs (6.3.3.1.7, 6.3.3.1.8, 6.3.3.1.9). However, it includes frames discarded by the Distribution function of the Aggregator (6.3.1.1.25).
frames-with-rx-errors	uint64	A count of data frames discarded on reception by all ports that are (or have been) members of the aggregation, or that were discarded by the Collection function of the Aggregator, or that were discarded by the Aggregator due to the detection of an illegal Slow Protocols PDU (6.3.3.1.6).
frames-with-tx-errors	uint64	A count of data frames requested to be transmitted by this Aggregator that experienced transmission errors on ports that are (or have been) members of the aggregation. This count does not include frames discarded due to excess collisions.
multicast-frames-rx	uint64	A count of the data frames received by this Aggregator, from the Aggregation Ports that are (or have been) members of the aggregation, that were addressed to an active group address other than the broadcast address. The count does not include frames that carry LACP or Marker PDUs (6.3.3.1.2, 6.3.3.1.3, 6.3.3.1.4), or frames discarded by the Collection function of the Aggregator (6.3.1.1.26).
multicast-frames-tx	uint64	A count of the data frames transmitted by this Aggregator on all Aggregation Ports that are (or have been) members of the aggregation, to a group destination address other than the broadcast address. The count does not include frames transmitted by the Aggregator that carry LACP or Marker PDUs (6.3.3.1.7, 6.3.3.1.8, 6.3.3.1.9). However, it includes frames discarded by the Distribution function of the Aggregator (6.3.1.1.25).
octets-rx	uint64	A count of the data and padding octets received by this Aggregator, from the Aggregation Ports that are (or have been) members of the aggregation. The count does not include octets received in frames that carry LACP or Marker PDUs (6.3.3.1.2, 6.3.3.1.3, 6.3.3.1.4), or frames discarded by the Collection function of the Aggregator (6.3.1.1.26).

octets-tx	uint64	A count of the data and padding octets transmitted by this Aggregator on all Aggregation Ports that are (or have been) members of the aggregation. The count does not include octets transmitted by the Aggregator in frames that carry LACPDUs or Marker PDUs (6.3.3.1.7, 6.3.3.1.8, 6.3.3.1.9). However, it includes frames discarded by the Distribution function of the Aggregator (6.3.1.1.25).
unknown-protocol-frames	uint64	A count of data frames discarded on reception by all ports that are (or have been) members of the aggregation, due to the detection of an unknown Slow Protocols PDU (6.3.3.1.5)

show interfaces-state interface <A> cfm-stack

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
<a href="#">cfm-stack</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> cfm-stack cfm-stack <B><C>

**Input Parameters:**

Parameter	Type	Description
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A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>
B	uint8 [0..7]	The MD level of the maintenance point
C	enumeration One of: down   up	The direction in which the Maintenance Point faces on the interface. Example, up or down.

**Output Parameters:**

Parameter	Type	Description
md-level	uint8 [0..7]	The MD level of the maintenance point
direction	enumeration One of: down   up	The direction in which the Maintenance Point faces on the interface. Example, up or down.
mac-address	string {pattern = [0-9a-fA-F][02468aAcCeE](-[0-9a-fA-F]{2}){5}}	The MAC address of the Maintenance Point.
<a href="#">mep</a>	Not applicable	Reference to subtree parameters
<a href="#">mhf</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> cfm-stack cfm-stack <B><C> mep

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a</p>

		mechanism is outside the scope of this document.
B	uint8 [0..7]	The MD level of the maintenance point
C	enumeration One of: down   up	The direction in which the Maintenance Point faces on the interface. Example, up or down.

**Output Parameters:**

Parameter	Type	Description
maintenance-group-id	leafref : /dot1q-cfm:cfm/dot1q-cfm:maintenance-group/dot1q-cfm:maintenance-group-id	The maintenance group that the MEP is associated with.
mep-id	leafref : /dot1q-cfm:cfm/dot1q-cfm:maintenance-group[dot1q-cfm:maintenance-group-id = current()]/../maintenance-group-id]/dot1q-cfm:mep/dot1q-cfm:mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.

show interfaces-state interface <A> cfm-stack cfm-stack <B><C> mhf

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint8 [0..7]	The MD level of the maintenance point
C	enumeration One of: down   up	The direction in which the Maintenance Point faces on the interface. Example, up or down.

**Output Parameters:**

Parameter	Type	Description
ma-id	leafref : /dot1q-cfm:cfm/dot1q-cfm:maintenance-domain[dot1q-cfm:md-id = current()]/../md-id/dot1q-cfm:maintenance-association/dot1q-cfm:ma-id	The maintenance association that the MHF is associated with.
md-id	leafref : /dot1q-cfm:cfm/dot1q-cfm:maintenance-domain/dot1q-cfm:md-id	The maintenance domain that the MHF is associated with.

show interfaces-state interface <A> control-protocol

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.

**Output Parameters:**

Parameter	Type	Description
name	string	References the control protocol name

show interfaces-state interface <A> Ethernet

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in

		size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
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**Output Parameters:**

Parameter	Type	Description
<a href="#">auto-negotiation</a>	Not applicable	Reference to subtree parameters
duplex	enumeration One of: unknown   half   full	The current mode of operation of the IEEE Std 802.3 Ethernet interface. The value of 'unknown' indicates that the current duplex mode could not be determined. The value of 'full' indicates that the IEEE Std 802.3 Ethernet interface operates in full duplex mode. The value of 'half' indicates that the IEEE Std 802.3 Ethernet interface operates in half duplex mode.
macc-pause-control	enumeration One of: disabled   enabled-Tx   enabled-Rx   enabled-bidirectional	A value that identifies the current (when read) or target (when set) operational state of the PAUSE MAC Control function (when read). This object is used to configure the default administrative PAUSE mode for this IEEE Std 802.3 Ethernet interface. When set, this value of this object represents the administratively-configured PAUSE mode for this IEEE Std 802.3 Ethernet interface. If Auto-Negotiation is not enabled or is not implemented for the active MAU attached to this IEEE Std 802.3 Ethernet interface, the value of this object determines the operational PAUSE mode of the IEEE Std 802.3 Ethernet interface whenever it is operating in full-duplex mode. In this case, a set to this object will force the IEEE Std 802.3 Ethernet interface into the specified mode. If Auto-Negotiation is implemented and enabled for the MAU attached to this IEEE Std 802.3 Ethernet interface, the PAUSE mode for this IEEE Std 802.3 Ethernet interface is determined by Auto-Negotiation, and the value of this object denotes the mode to which the IEEE Std 802.3 Ethernet interface will automatically revert if/when Auto-Negotiation is later disabled. Note that the value of this object is ignored when the IEEE Std 802.3 Ethernet interface is not operating in full-duplex mode. An attempt to set this object to 'enabled-Tx' or 'enabled-Rx' will fail on IEEE

		Std 802.3 Ethernet interfaces that do not support operation at greater than 100 Mb/s." When read, the value of this object reflects the current operational PAUSE Control function of the IEEE Std 802.3 Ethernet interface.
speed	uint64	Unit: Mb/s Operational speed setting of the interface
<a href="#">tca</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> Ethernet auto-negotiation

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.

**Output Parameters:**

Parameter	Type	Description
status	enumeration One of: successful   failed   unknown	The status of the auto-negotiation protocol

show interfaces-state interface <A> Ethernet tca

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

		A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
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**Output Parameters:**

Parameter	Type	Description
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show interfaces-state interface <A> Ethernet tca intervals-15min

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
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show interfaces-state interface <A> ipv4

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some</p>

		mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
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**Output Parameters:**

Parameter	Type	Description
<a href="#">address</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> ipv4 address <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	string {pattern = [0-9\..]*}	The IPv4 address on the interface.

**Output Parameters:**

Parameter	Type	Description
ip	string {pattern = [0-9\..]*}	The IPv4 address on the interface.
netmask	string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])}	The subnet specified as a netmask.
origin	enumeration One of: other   static   dhcp   link-layer   random	The origin of this address.
prefix-length	uint8 [0..32]	The length of the subnet prefix.

show interfaces-state interface <A> ipv6

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.

**Output Parameters:**

Parameter	Type	Description
<a href="#">address</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> ipv6 address <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	string {pattern = [0-9a-fA-F:\.]*}	The IPv6 address on the interface.

**Output Parameters:**

Parameter	Type	Description
ip	string {pattern = [0-9a-fA-F:\.]*}	The IPv6 address on the interface.

prefix-length	uint8 [0..128]	The length of the subnet prefix.
origin	enumeration One of: other   static   dhcp   link-layer   random	The origin of this address.
status	enumeration One of: preferred   deprecated   invalid   inaccessible   unknown   tentative   duplicate   optimistic	The status of an address. Most of the states correspond to states from the IPv6 Stateless Address Autoconfiguration protocol.

show interfaces-state interface <A> performance

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
<a href="#">intervals-15min</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> performance intervals-15min

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some</p>

		mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
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**Output Parameters:**

Parameter	Type	Description
<a href="#">current</a>	Not applicable	Reference to subtree parameters
<a href="#">history</a>	Not applicable	Reference to subtree parameters
non-valid-intervals	uint8 [0..96]	The number of 15-minute PM intervals for which the data is considered to be invalid or incomplete.
number-of-intervals	uint8 [0..96]	The total number of 15-minute PM intervals for which data was collected.

show interfaces-state interface <A> performance intervals-15min current

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
<a href="#">ethernet</a>	Not applicable	Reference to subtree parameters
in-1024-to-1518-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 1024..1518 octets long, excluding framing bits but including FCS
in-128-to-255-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were

		128..255 octets long, excluding framing bits but including FCS
in-256-to-511-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 256..511 octets long, excluding framing bits but including FCS
in-512-to-1023-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 512..1023 octets long, excluding framing bits but including FCS
in-64-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 64 octets long, excluding framing bits but including FCS.
in-65-to-127-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 65..127 octets long, excluding framing bits but including FCS
in-broadcast-pkts	uint64	The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were addressed to a broadcast address at this sub-layer.
in-crc-errored-pkts	uint64	The total number of inbound packets received that had a length (excluding framing bits, but including FCS octets) of between 64 octets and 1518 octets, inclusive, but had either a bad FCS with an integral number of octets (FCS error) or a bad FCS with a non-integral number of octets (alignment error)
in-discards	uint32	The number of inbound packets that were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.
in-drop-events	uint64	The total number of events in which inbound packets were dropped due to a lack of resources
in-dropped-bytes	uint64	The number of inbound bytes that were dropped on the interface, e.g. due to errors or lack of buffer space.
in-errors	uint32	For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. For character-

		oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.
in-multicast-pkts	uint64	The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were addressed to a multicast address at this sub-layer. For a MAC-layer protocol, this includes both Group and Functional addresses.
in-octets	uint64	The total number of octets received on the interface, including framing characters.
in-oversize-pkts	uint64	The total number of inbound packets received that were longer than 1518 octets (excluding framing bits, but including FCS) and were otherwise well formed
in-pkts	uint64	The total number of packets that are received at this sub-layer interface, including all unicast, multicast and broadcast packets, irrespective of whether these packets are actually being forwarded / discarded by the higher layer.
in-total-pkts	uint64	The total number of inbound packets received, including bad packets, broadcast packets and multicast packets
in-undersize-pkts	uint64	The total number of inbound packets received that were less than 64 octets long, but were otherwise well formed (excluding framing bits, but including FCS)
in-unicast-pkts	uint64	The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were not addressed to a multicast or broadcast address at this sub-layer.
in-unknown-protos	uint32	For packet-oriented interfaces, the number of packets received via the interface that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received via the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is not present.
out-1024-to-1518-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were

		1024..1518 octets long, excluding framing bits but including FCS
out-128-to-255-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 128..255 octets long, excluding framing bits but including FCS
out-256-to-511-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 256..511 octets long, excluding framing bits but including FCS
out-512-to-1023-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 512..1023 octets long, excluding framing bits but including FCS
out-64-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 64 octets long, excluding framing bits but including FCS.
out-65-to-127-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 65..127 octets long, excluding framing bits but including FCS
out-broadcast-pkts	uint64	The total number of packets that higher-level protocols requested be transmitted, and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.
out-crc-errored-pkts	uint64	The total number of outbound packets received that had a length (excluding framing bits, but including FCS octets) of between 64 octets and 1518 octets, inclusive, but had either a bad FCS with an integral number of octets (FCS error) or a bad FCS with a non-integral number of octets (alignment error)
out-discards	uint32	The number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
out-drop-events	uint64	The total number of events in which outbound packets were dropped due to a lack of resources

out-dropped-bytes	uint64	The number of outbound bytes that could not be transmitted on the interface, e.g. due to errors or lack of buffer space.
out-errors	uint32	For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.
out-multicast-pkts	uint64	The total number of packets that higher-level protocols requested be transmitted, and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC-layer protocol, this includes both Group and Functional addresses.
out-octets	uint64	The total number of octets transmitted out of the interface, including framing characters.
out-oversize-pkts	uint64	The total number of outbound packets received that were longer than 1518 octets (excluding framing bits, but including FCS) and were otherwise well formed
out-pkts	uint64	The total number of packets that are requested be transmitted at this sub-layer interface, including all unicast, multicast and broadcast packets, irrespective of whether these packets are actually being sent or are discarded at the lower level interface.
out-total-pkts	uint64	The total number of outbound packets received, including bad packets, broadcast packets and multicast packets
out-undersize-pkts	uint64	The total number of outbound packets received that were less than 64 octets long, but were otherwise well formed (excluding framing bits, but including FCS)
out-unicast-pkts	uint64	The total number of packets that higher-level protocols requested be transmitted, and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.

show interfaces-state interface <A> performance intervals-15min current ethernet

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
in-pkts-errors-fcs	uint64	<p>A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check. This count does not include frames received with frame-too-long or frame-too-short error.</p> <p>The count represented by an instance of this leaf is incremented when the frameCheckError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions pertain are, according to the conventions of IEEE 802.3 Layer Management, counted exclusively according to the error status presented to the LLC.</p> <p>Note: Coding errors detected by the Physical Layer for speeds above 10 Mb/s will cause the frame to fail the FCS check. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'.</p> <p>A frame that is counted by an instance of this leaf is also counted by the corresponding instance of 'in-errors' leaf.</p>

show interfaces-state interface <A> performance intervals-15min history <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
interval-number	uint8 [1..96]	The number of the interval relative to the current interval.
<a href="#">ethernet</a>	Not applicable	Reference to subtree parameters
in-1024-to-1518-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 1024..1518 octets long, excluding framing bits but including FCS
in-128-to-255-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 128..255 octets long, excluding framing bits but including FCS
in-256-to-511-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 256..511 octets long, excluding framing bits but including FCS
in-512-to-1023-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 512..1023 octets long, excluding framing bits but including FCS
in-64-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 64 octets long, excluding framing bits but including FCS.

in-65-to-127-octets-pkts	uint64	The total number of inbound received packets (including bad packets) that were 65..127 octets long, excluding framing bits but including FCS
in-broadcast-pkts	uint64	The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were addressed to a broadcast address at this sub-layer.
in-crc-errored-pkts	uint64	The total number of inbound packets received that had a length (excluding framing bits, but including FCS octets) of between 64 octets and 1518 octets, inclusive, but had either a bad FCS with an integral number of octets (FCS error) or a bad FCS with a non-integral number of octets (alignment error)
in-discards	uint32	The number of inbound packets that were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.
in-drop-events	uint64	The total number of events in which inbound packets were dropped due to a lack of resources
in-dropped-bytes	uint64	The number of inbound bytes that were dropped on the interface, e.g. due to errors or lack of buffer space.
in-errors	uint32	For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.
in-multicast-pkts	uint64	The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were addressed to a multicast address at this sub-layer. For a MAC-layer protocol, this includes both Group and Functional addresses.
in-octets	uint64	The total number of octets received on the interface, including framing characters.
in-oversize-pkts	uint64	The total number of inbound packets received that were longer than 1518 octets

		(excluding framing bits, but including FCS) and were otherwise well formed
in-pkts	uint64	The total number of packets that are received at this sub-layer interface, including all unicast, multicast and broadcast packets, irrespective of whether these packets are actually being forwarded / discarded by the higher layer.
in-total-pkts	uint64	The total number of inbound packets received, including bad packets, broadcast packets and multicast packets
in-undersize-pkts	uint64	The total number of inbound packets received that were less than 64 octets long, but were otherwise well formed (excluding framing bits, but including FCS)
in-unicast-pkts	uint64	The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were not addressed to a multicast or broadcast address at this sub-layer.
in-unknown-protos	uint32	For packet-oriented interfaces, the number of packets received via the interface that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received via the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is not present.
invalid-data-flag	boolean	Reports the validity of the corresponding PM data.
measured-time	uint32	Reports the amount of time, measured in seconds, that statistics for this interval have been counted.
out-1024-to-1518-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 1024..1518 octets long, excluding framing bits but including FCS
out-128-to-255-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 128..255 octets long, excluding framing bits but including FCS
out-256-to-511-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were

		256..511 octets long, excluding framing bits but including FCS
out-512-to-1023-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 512..1023 octets long, excluding framing bits but including FCS
out-64-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 64 octets long, excluding framing bits but including FCS.
out-65-to-127-octets-pkts	uint64	The total number of outbound received packets (including bad packets) that were 65..127 octets long, excluding framing bits but including FCS
out-broadcast-pkts	uint64	The total number of packets that higher-level protocols requested be transmitted, and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.
out-crc-errored-pkts	uint64	The total number of outbound packets received that had a length (excluding framing bits, but including FCS octets) of between 64 octets and 1518 octets, inclusive, but had either a bad FCS with an integral number of octets (FCS error) or a bad FCS with a non-integral number of octets (alignment error)
out-discards	uint32	The number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
out-drop-events	uint64	The total number of events in which outbound packets were dropped due to a lack of resources
out-dropped-bytes	uint64	The number of outbound bytes that could not be transmitted on the interface, e.g. due to errors or lack of buffer space.
out-errors	uint32	For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.

out-multicast-pkts	uint64	The total number of packets that higher-level protocols requested be transmitted, and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC-layer protocol, this includes both Group and Functional addresses.
out-octets	uint64	The total number of octets transmitted out of the interface, including framing characters.
out-oversize-pkts	uint64	The total number of outbound packets received that were longer than 1518 octets (excluding framing bits, but including FCS) and were otherwise well formed
out-pkts	uint64	The total number of packets that are requested be transmitted at this sub-layer interface, including all unicast, multicast and broadcast packets, irrespective of whether these packets are actually being sent or are discarded at the lower level interface.
out-total-pkts	uint64	The total number of outbound packets received, including bad packets, broadcast packets and multicast packets
out-undersize-pkts	uint64	The total number of outbound packets received that were less than 64 octets long, but were otherwise well formed (excluding framing bits, but including FCS)
out-unicast-pkts	uint64	The total number of packets that higher-level protocols requested be transmitted, and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.
time-stamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Reports the start date/time for this interval.

show interfaces-state interface <A> performance intervals-15min history <B> ethernet

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

		A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
in-errors-mac-internal	uint64	<p>A count of frames for which reception on a particular IEEE 802.3 Ethernet interface fails due to an internal MAC sublayer receive error.</p> <p>A frame is only counted by an instance of this leaf if it is not counted by the corresponding instance of either the 'in-giant-pkts' leaf, the 'in-pkts-errors-alignment-fcs' leaf, or the 'in-pkts-errors-fcs' leaf. The precise meaning of the count represented by an instance of this leaf is implementation-specific.</p> <p>In particular, an instance of this leaf may represent a count of receive errors on a particular IEEE 802.3 Ethernet interface that are not otherwise counted.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'</p>
in-giant-pkts	uint64	<p>A count of frames received on a particular interface that exceed the maximum permitted frame size.</p> <p>The count represented by an instance of this leaf is incremented when the frameTooLong status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions pertain are, according to the conventions of IEEE 802.3 Layer</p>

		<p>Management, counted exclusively according to the error status presented to the LLC.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'.</p>
in-pkts-errors-fcs	uint64	<p>A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check. This count does not include frames received with frame-too-long or frame-too-short error.</p> <p>The count represented by an instance of this leaf is incremented when the frameCheckError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions pertain are, according to the conventions of IEEE 802.3 Layer Management, counted exclusively according to the error status presented to the LLC.</p> <p>Note: Coding errors detected by the Physical Layer for speeds above 10 Mb/s will cause the frame to fail the FCS check. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'.</p> <p>A frame that is counted by an instance of this leaf is also counted by the corresponding instance of 'in-errors' leaf.</p>
out-errors-mac-internal	uint64	<p>A count of frames for which transmission on a particular IEEE 802.3 Ethernet interface fails due to an internal MAC sublayer transmit error.</p> <p>A frame is only counted by an instance of this leaf if it is not counted by the corresponding instance of either the 'out-collisions-late' leaf, the 'out-pkts-collisions-excessive' leaf, or the 'out-errors-carrier-sense' leaf. The precise meaning of the count represented by an instance of this leaf is implementation-specific.</p>

		<p>In particular, an instance of this leaf may represent a count of transmission errors on a particular IEEE 802.3 Ethernet interface that are not otherwise counted.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'.</p>
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show interfaces-state interface <A> rmon-statistics

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
etherStatsBroadcastPkts	uint64	<p>Unit: Packets</p> <p>The total number of good packets received that were directed to the broadcast address. Note that this does not include multicast packets.</p>
etherStatsCollisions	uint64	<p>Unit: Collisions</p> <p>The best estimate of the total number of collisions on this Ethernet segment.</p> <p>The value returned will depend on the location of the RMON probe. Section 8.2.1.3 (10BASE-5) and section 10.3.1.3 (10BASE-2) of IEEE standard 802.3 states that a station must detect a collision, in the receive mode, if three or more stations are</p>

		<p>transmitting simultaneously. A repeater port must detect a collision when two or more stations are transmitting simultaneously. Thus a probe placed on a repeater port could record more collisions than a probe connected to a station on the same segment would.</p> <p>Probe location plays a much smaller role when considering 10BASE-T. 14.2.1.4 (10BASE-T) of IEEE standard 802.3 defines a collision as the simultaneous presence of signals on the DO and RD circuits (transmitting and receiving at the same time). A 10BASE-T station can only detect collisions when it is transmitting. Thus probes placed on a station and a repeater, should report the same number of collisions.</p> <p>Note also that an RMON probe inside a repeater should ideally report collisions between the repeater and one or more other hosts (transmit collisions as defined by IEEE 802.3k) plus receiver collisions observed on any coax segments to which the repeater is connected.</p>
etherStatsCRCAlignErrors	uint64	<p>Unit: Packets</p> <p>The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).</p>
etherStatsFragments	uint64	<p>Unit: Packets</p> <p>The total number of packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).</p> <p>Note that it is entirely normal for etherStatsFragments to increment. This is because it counts both runts (which are</p>

		normal occurrences due to collisions) and noise hits.
etherStatsJabbers	uint64	<p>Unit: Packets</p> <p>The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets), and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).</p> <p>Note that this definition of jabber is different than the definition in IEEE-802.3 section 8.2.1.5 (10BASE5) and section 10.3.1.4 (10BASE2). These documents define jabber as the condition where any packet exceeds 20 ms. The allowed range to detect jabber is between 20 ms and 150 ms.</p>
etherStatsMulticastPkts	uint64	<p>Unit: Packets</p> <p>The total number of good packets received that were directed to a multicast address. Note that this number does not include packets directed to the broadcast address.</p>
etherStatsOctets	uint64	<p>Unit: Octets</p> <p>The total number of octets of data (including those in bad packets) received on the network (excluding framing bits but including FCS octets).</p> <p>This object can be used as a reasonable estimate of 10-Megabit ethernet utilization. If greater precision is desired, the etherStatsPkts and etherStatsOctets objects should be sampled before and after a common interval. The differences in the sampled values are Pkts and Octets, respectively, and the number of seconds in the interval is Interval. These values are used to calculate the Utilization as follows:</p> $\text{Pkts} * (9.6 + 6.4) + (\text{Octets} * .8) \text{ Utilization} = \frac{\text{Interval} *}{10,000}$ <p>The result of this equation is the value Utilization which is the percent utilization of the ethernet segment on a scale of 0 to 100 percent.</p>

etherStatsOversizePkts	uint64	Unit: Packets  The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed.
etherStatsPkts	uint64	Unit: Packets  The total number of packets (including bad packets, broadcast packets, and multicast packets) received.
etherStatsPkts1024to1518Octets	uint64	Unit: Packets  The total number of packets (including bad packets) received that were between 1024 and 1518 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts128to255Octets	uint64	Unit: Packets  The total number of packets (including bad packets) received that were between 128 and 255 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts256to511Octets	uint64	Unit: Packets  The total number of packets (including bad packets) received that were between 256 and 511 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts512to1023Octets	uint64	Unit: Packets  The total number of packets (including bad packets) received that were between 512 and 1023 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts64Octets	uint64	Unit: Packets  The total number of packets (including bad packets) received that were 64 octets in length (excluding framing bits but including FCS octets).
etherStatsPkts65to127Octets	uint64	Unit: Packets  The total number of packets (including bad packets) received that were between 65

		and 127 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsUndersize Pkts	uint64	Unit: Packets  The total number of packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.

show interfaces-state interface <A> speed-monitoring

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.

**Output Parameters:**

Parameter	Type	Description
<a href="#">data</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> speed-monitoring data <B>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in

		size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	enumeration One of: 5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes	The period over which the data is collected.

**Output Parameters:**

Parameter	Type	Description
monitoring-period-length	enumeration One of: 5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes	The period over which the data is collected.
<a href="#">current</a>	Not applicable	Reference to subtree parameters
<a href="#">history</a>	Not applicable	Reference to subtree parameters
non-valid-intervals	uint16 [0..max]	The number of speed-monitoring-history intervals for which the data is considered to be invalid or incomplete.
number-of-intervals	uint16 [0..max]	The total number of speed-monitoring-history intervals for which data was collected. It contains the number of non-valid intervals.

show interfaces-state interface <A> speed-monitoring data <B> current

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	enumeration One of:	The period over which the data is collected.

5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes
---

**Output Parameters:**

Parameter	Type	Description
receive-datarate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames received on the interface per second. When the period is larger than 1 second then the data rate provides the average over the time period.
transmit-datarate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames transmitted on the interface per second. When the period is larger than 1 second then the data rate provides the average over the time period.

show interfaces-state interface <A> speed-monitoring data <B> history <C>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	enumeration One of: 5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes	The period over which the data is collected.
C	uint16 [1..max]	The position of a completed interval relative to the current interval. Value '1' corresponds to the last interval completed

**Output Parameters:**

Parameter	Type	Description
interval-number	uint16 [1..max]	The position of a completed interval relative to the current interval. Value '1' corresponds to the last interval completed
invalid-data-flag	boolean	Reports the validity of the corresponding PM data.
measured-time	uint32	Reports the amount of time, measured in seconds, that statistics for this interval have been counted.
receive-datarate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames received on the interface per second. When the period is larger than 1 second then the data rate provides the average over the time period.
time-stamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Reports the start date/time for this interval.
<a href="#">top-utilized-child-interfaces</a>	Not applicable	Reference to subtree parameters
transmit-broadcast-datarate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames with as destination MAC address the Ethernet broadcast address that are transmitted on the interface. When the period is larger than 1 second then the data rate provides the average over the time period.
transmit-datarate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames transmitted on the interface per second. When the period is larger than 1 second then the data rate provides the average over the time period.
transmit-multicast-datarate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames with as destination MAC address a multicast MAC address that are transmitted on the interface. When the period is larger than 1 second then the data rate provides the average over the time period.

transmit-unicast-data-rate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames with as destination MAC address a unicast MAC address that are transmitted on the interface. When the period is larger than 1 second then the data rate provides the average over the time period.
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show interfaces-state interface <A> speed-monitoring data <B> history <C> top-utilized-child-interfaces

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	enumeration One of: 5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes	The period over which the data is collected.
C	uint16 [1..max]	The position of a completed interval relative to the current interval. Value '1' corresponds to the last interval completed

**Output Parameters:**

Parameter	Type	Description
<a href="#">in</a>	Not applicable	Reference to subtree parameters
<a href="#">out</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> speed-monitoring data <B> history <C> top-utilized-child-interfaces in <D>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	enumeration One of: 5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes	The period over which the data is collected.
C	uint16 [1..max]	The position of a completed interval relative to the current interval. Value '1' corresponds to the last interval completed
D	uint8 [1..5]	top

**Output Parameters:**

Parameter	Type	Description
top	uint8 [1..5]	top
child-interface-name	leafref : /if:interfaces-state/if:interface/if:name	The name of the child interface, of the parent interface in the /interfaces-state/ interface list that contains this data node, that is top contributors in transmitting data traffic over this interface
in-data-rate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames received on the interface per second.

show interfaces-state interface <A> speed-monitoring data <B> history <C> top-utilized-child-interfaces out <D>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	enumeration One of: 5-seconds   1-minute   10-minutes   30-seconds   5-minutes   15-minutes	The period over which the data is collected.
C	uint16 [1..max]	The position of a completed interval relative to the current interval. Value '1' corresponds to the last interval completed
D	uint8 [1..5]	top

**Output Parameters:**

Parameter	Type	Description
top	uint8 [1..5]	top
child-interface-name	leafref : /if:interfaces-state/if:interface/if:name	The name of the child interface, of the parent interface in the /interfaces-state/interface list that contains this data node, that is top contributors in transmitting data traffic over this interface
out-data-rate	union enumeration One of: undetermined  decimal64 [0..max]	The data rate of Ethernet frames transmitted on the interface per second.

show interfaces-state interface <A> statistics

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
discontinuity-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time on the most recent occasion at which any one or more of this interface's counters suffered a discontinuity. If no such discontinuities have occurred since the last re-initialization of the local management subsystem, then this node contains the time the local management subsystem re-initialized itself.
<a href="#">ethernet</a>	Not applicable	Reference to subtree parameters
in-broadcast-pkts	uint64	<p>The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were addressed to a broadcast address at this sub-layer.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
in-discards	uint32	<p>The number of inbound packets that were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>

in-dropped-bytes	uint64	The number of inbound bytes that were dropped on the interface, e.g. due to errors or lack of buffer space.
in-errors	uint32	<p>For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
in-multicast-pkts	uint64	<p>The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were addressed to a multicast address at this sub-layer. For a MAC-layer protocol, this includes both Group and Functional addresses.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
in-octets	uint64	<p>The total number of octets received on the interface, including framing characters.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
in-pkts	uint64	The total number of packets received on the interface.
in-unicast-pkts	uint64	<p>The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were not addressed to a multicast or broadcast address at this sub-layer.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
in-unknown-protos	uint32	For packet-oriented interfaces, the number of packets received via the interface that were discarded because of an unknown

		<p>or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received via the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is not present.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
out-broadcast-pkts	uint64	<p>The total number of packets that higher-level protocols requested be transmitted, and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
out-discards	uint32	<p>The number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
out-dropped-bytes	uint64	<p>The number of outbound bytes that could not be transmitted on the interface, e.g. due to errors or lack of buffer space.</p>
out-errors	uint32	<p>For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the</p>

		management system, and at other times as indicated by the value of 'discontinuity-time'.
out-multicast-pkts	uint64	<p>The total number of packets that higher-level protocols requested be transmitted, and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC-layer protocol, this includes both Group and Functional addresses.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
out-octets	uint64	<p>The total number of octets transmitted out of the interface, including framing characters.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>
out-pkts	uint64	The total number of packets transmitted out of the interface.
out-unicast-pkts	uint64	<p>The total number of packets that higher-level protocols requested be transmitted, and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of 'discontinuity-time'.</p>

show interfaces-state interface <A> statistics ethernet

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in</p>

	size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
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**Output Parameters:**

Parameter	Type	Description
in-errors-mac-internal	uint64	<p>A count of frames for which reception on a particular IEEE 802.3 Ethernet interface fails due to an internal MAC sublayer receive error.</p> <p>A frame is only counted by an instance of this leaf if it is not counted by the corresponding instance of either the 'in-giant-pkts' leaf, the 'in-pkts-errors-alignment-fcs' leaf, or the 'in-pkts-errors-fcs' leaf. The precise meaning of the count represented by an instance of this leaf is implementation-specific.</p> <p>In particular, an instance of this leaf may represent a count of receive errors on a particular IEEE 802.3 Ethernet interface that are not otherwise counted.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'</p>
in-giant-pkts	uint64	<p>A count of frames received on a particular interface that exceed the maximum permitted frame size.</p> <p>The count represented by an instance of this leaf is incremented when the frameTooLong status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions pertain are, according to the conventions of IEEE 802.3 Layer Management, counted exclusively according to the error status presented to the LLC.</p> <p>Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times</p>

		as indicated by the value of the interface's 'statistics/discontinuity-time'.
in-pkts-errors-fcs	uint64	<p>A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check. This count does not include frames received with frame-too-long or frame-too-short error.</p> <p>The count represented by an instance of this leaf is incremented when the frameCheckError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions pertain are, according to the conventions of IEEE 802.3 Layer Management, counted exclusively according to the error status presented to the LLC.</p> <p>Note: Coding errors detected by the Physical Layer for speeds above 10 Mb/s will cause the frame to fail the FCS check. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'.</p> <p>A frame that is counted by an instance of this leaf is also counted by the corresponding instance of 'in-errors' leaf.</p>
out-errors-mac-internal	uint64	<p>A count of frames for which transmission on a particular IEEE 802.3 Ethernet interface fails due to an internal MAC sublayer transmit error.</p> <p>A frame is only counted by an instance of this leaf if it is not counted by the corresponding instance of either the 'out-collisions-late' leaf, the 'out-pkts-collisions-excessive' leaf, or the 'out-errors-carrier-sense' leaf. The precise meaning of the count represented by an instance of this leaf is implementation-specific.</p> <p>In particular, an instance of this leaf may represent a count of transmission errors on a particular IEEE 802.3 Ethernet interface that are not otherwise counted.</p>

		Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of the interface's 'statistics/discontinuity-time'.
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show interfaces-state interface <A> tm-root

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

**Output Parameters:**

Parameter	Type	Description
<a href="#">queue</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> tm-root queue <B>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

B	uint32 [0..7]	The identification of a queue within the context of this list.
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**Output Parameters:**

Parameter	Type	Description
local-queue-id	uint32 [0..7]	The identification of a queue within the context of this list.
<a href="#">performance</a>	Not applicable	Reference to subtree parameters
<a href="#">statistics</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> tm-root queue <B> performance

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
<a href="#">intervals-15min</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min

**Input Parameters:**

Parameter	Type	Description
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A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
<a href="#">current</a>	Not applicable	Reference to subtree parameters
<a href="#">history</a>	Not applicable	Reference to subtree parameters
non-valid-intervals	uint8 [0..96]	The number of 15-minute PM intervals for which the data is considered to be invalid or incomplete.
number-of-intervals	uint8 [0..96]	The total number of 15-minute PM intervals for which data was collected.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min current

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
<a href="#">color</a>	Not applicable	Reference to subtree parameters
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min current color

#### Input Parameters:

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

#### Output Parameters:

Parameter	Type	Description
<a href="#">green</a>	Not applicable	Reference to subtree parameters
<a href="#">red</a>	Not applicable	Reference to subtree parameters
<a href="#">yellow</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min current color green

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min current color red

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

		A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min current color yellow

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

B	uint32 [0..7]	The identification of a queue within the context of this list.
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**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min history <C>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
interval-number	uint8 [1..96]	The number of the interval relative to the current interval.
<a href="#">color</a>	Not applicable	Reference to subtree parameters
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
invalid-data-flag	boolean	Reports the validity of the corresponding PM data.
measured-time	uint32	Reports the amount of time, measured in seconds, that statistics for this interval have been counted.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.
time-stamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Reports the start date/time for this interval.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min history  
<C> color

**Input Parameters:**

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
<a href="#">green</a>	Not applicable	Reference to subtree parameters
<a href="#">red</a>	Not applicable	Reference to subtree parameters
<a href="#">yellow</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min history  
<C> color green

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.

drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min history <C> color red

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.

out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> performance intervals-15min history  
<C> color yellow

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.
C	uint8 [1..96]	The number of the interval relative to the current interval.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> statistics

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
<a href="#">color</a>	Not applicable	Reference to subtree parameters
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> statistics color

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.

		A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
<a href="#">green</a>	Not applicable	Reference to subtree parameters
<a href="#">red</a>	Not applicable	Reference to subtree parameters
<a href="#">yellow</a>	Not applicable	Reference to subtree parameters

show interfaces-state interface <A> tm-root queue <B> statistics color green

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.

drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> statistics color red

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

show interfaces-state interface <A> tm-root queue <B> statistics color yellow

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the interface.  A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.
B	uint32 [0..7]	The identification of a queue within the context of this list.

**Output Parameters:**

Parameter	Type	Description
drop-octets	uint64	Total number of octets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
drop-pkts	uint64	Total number of packets that were addressed to the queue, but that were dropped instead of being queued, e.g. because of buffer overflow.
out-octets	uint64	Number of octets transmitted from the queue.
out-pkts	uint64	Number of packets transmitted from the queue.

## 3.12 ipfix commands

### 3.12.1 Command Tree

```
-- show ipfix cache cacheDiscontinuityTime
-- show ipfix cache dataRecords
-- show ipfix cache dropped-data-records
-- show ipfix cache-sequence-number
-- show ipfix cache stored-data-records
-- show ipfix cache template-id
-- show ipfix cache total-dropped-data-records
-- show ipfix collection-timestamp
-- show ipfix data-presence-indication
-- show ipfix delete-flag
-- show ipfix exportingProcess destination tcpExporter transportSession
  |-- bytes
  |-- destinationAddress
  |-- destinationPort
  |-- discardedMessages
  |-- ipfixVersion
  |-- messages
  |-- optionsTemplates
  |-- records
  |-- status
  |-- template
    |-- accessTime
    |-- templateDataRecords
    |-- templateDataRecordsAccessTime
    |-- templateDiscontinuityTime
    |-- templateId
  |-- templates
  |-- transportSessionDiscontinuityTime
  |-- transportSessionStartTime
-- show ipfix hierarchy-meta-info
-- show ipfix last-message
-- show ipfix record-type
-- show ipfix to-aggregate
```

### 3.12.2 Commands

show ipfix cache cacheDiscontinuityTime

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
cacheDiscontinuityTime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Timestamp of the most recent occasion at which the counter dataRecords suffered a discontinuity. Note that this parameter functionally corresponds to ipfixMeteringProcessDiscontinuityTime in the IPFIX MIB module. In contrast to ipfixMeteringProcessDiscontinuityTime, the time is absolute and not relative to sysUpTime.

show ipfix cache dataRecords

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
dataRecords	uint64	Unit: Data Records  The number of Data Records generated by this Cache. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of cacheDiscontinuityTime. Note that this parameter corresponds to ipfixMeteringProcessDataRecords in the IPFIX MIB module.

show ipfix cache dropped-data-records

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

dropped-data-records	uint32	Indicates the number of data-records that have been dropped for this cache, due to the ongoing connectivity loss (applicable only to caches marked as conveying critical-content)
----------------------	--------	---

show ipfix cache-sequence-number

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
cache-sequence-number	uint32	Sequence number per cache; applicable only for caches configured as on-change. It is used only as part of the exported data to the collector. The sequence number will be incremented by 1 for each data-record for cache (except an audit message) irrespective of the connection status with the collector. This will be reset to 0 when an action to trigger complete-data-sync is used, when the fields of the cache is modified or when ipfix-exporting is disabled. This number will not be impacted by any change in the connection status with the collector.

show ipfix cache stored-data-records

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
stored-data-records	uint32	Indicates the number of data-records that are maintained in memory for this cache, due to the ongoing connectivity loss (applicable only to caches marked as conveying critical-content)

show ipfix cache template-id

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
template-id	uint16 [256..65535]	This number indicates the Template ID associated with this Cache.

show ipfix cache total-dropped-data-records

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
total-dropped-data-records	uint32	Indicates the total number of data-records that have been dropped for this cache, during connectivity losses (applicable only to caches marked as conveying critical-content)

show ipfix collection-timestamp

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

collection-timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Timestamp to indicate the data collection time of the instance of data. It is used only as part of the exported data to the collector.
----------------------	--	--

show ipfix data-presence-indication

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
data-presence-indication	binary	Indicates the presence of real data for each field in the template. This will always be the first Information Element in every data record. Bit 0 corresponds to the second field, bit 1 to the third field and so on (no bit assigned for the data-presence-indication). Bit value 1 indicates that an actual value exists for the field & bit value 0 indicates that the value does not exist & a dummy value is added by the exporter. An empty value indicates that all fields have real data for the instance.

show ipfix delete-flag

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
delete-flag	boolean	Indicates if a data-record corresponds to an instance deletion; applicable only for caches configured as on-change. It is used only as part of the exported data to the collector. Value will be true for cases where a data-instance is deleted. Value will be false for other cases (instance creation/modification)

show ipfix exportingProcess destination tcpExporter transportSession

**Output Parameters:**

Parameter	Type	Description
bytes	uint64	<p>Unit: bytes</p> <p>The number of bytes transmitted by the Exporting Process or received by the Collecting Process. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of transportSessionDiscontinuityTime. Note that this parameter corresponds to ipfixTransportSessionBytes in the IPFIX MIB module.</p>
destinationAddress	union union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%[\p{N}\p{L}]+)?} string string {length = 1..253}	<p>The destination address of the Collector of the IPFIX Transport Session. If the transport protocol is SCTP, this is one of the potentially many IP addresses of the Collector. Preferably, the destination IP address of the path that is usually selected by the Exporter to send IPFIX Messages to the Collector SHOULD be used. Note that this parameter functionally corresponds to ipfixTransportSessionDestinationAddressType and ipfixTransportSessionDestinationAddress in the IPFIX MIB module.</p>
destinationPort	uint16 [0..65535]	<p>The transport-protocol port number of the Collector of the IPFIX Transport Session. Note that this parameter corresponds to ipfixTransportSessionDestinationPort in the IPFIX MIB module.</p>
discardedMessages	uint64	<p>Unit: IPFIX Messages</p> <p>Used for Exporting Processes, this parameter indicates the number of messages that could not be sent due to internal buffer overflows, network congestion, routing issues, etc. Used for Collecting Process, this parameter indicates the number of received IPFIX Message that are malformed, cannot be decoded, are received in the wrong order or are missing according to the sequence number. Discontinuities in the value of this counter can occur at re-</p>

		initialization of the management system, and at other times as indicated by the value of transportSessionDiscontinuityTime. Note that this parameter corresponds to ipfixTransportSessionDiscardedMessages in the IPFIX MIB module.
ipfixVersion	uint16	Used for Exporting Processes, this parameter contains the version number of the IPFIX protocol that the Exporter uses to export its data in this Transport Session. Hence, it is identical to the value of the configuration parameter ipfixVersion of the outer SctpExporter, UdpExporter, or TcpExporter node. Used for Collecting Processes, this parameter contains the version number of the IPFIX protocol it receives for this Transport Session. If IPFIX Messages of different IPFIX protocol versions are received, this parameter contains the maximum version number. Note that this parameter corresponds to ipfixTransportSessionIpfixVersion in the IPFIX MIB module.
messages	uint64	Unit: IPFIX Messages  The number of messages transmitted by the Exporting Process or received by the Collecting Process. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of transportSessionDiscontinuityTime. Note that this parameter corresponds to ipfixTransportSessionMessages in the IPFIX MIB module.
optionsTemplates	uint32	Unit: Options Templates  The number of Option Templates transmitted by the Exporting Process or received by the Collecting Process. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of transportSessionDiscontinuityTime. Note that this parameter corresponds to ipfixTransportSessionOptionsTemplates in the IPFIX MIB module.
records	uint64	Unit: Data Records

		The number of Data Records transmitted by the Exporting Process or received by the Collecting Process. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of transportSessionDiscontinuityTime. Note that this parameter corresponds to ipfixTransportSessionRecords in the IPFIX MIB module.
status	enumeration One of: inactive   active   unknown	Status of the Transport Session. Note that this parameter corresponds to ipfixTransportSessionStatus in the IPFIX MIB module.
<a href="#">template</a>	Not applicable	Reference to subtree parameters
templates	uint32	Unit: Templates  The number of Templates transmitted by the Exporting Process or received by the Collecting Process. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of transportSessionDiscontinuityTime. Note that this parameter corresponds to ipfixTransportSessionTemplates in the IPFIX MIB module.
transportSessionDiscontinuityTime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Timestamp of the most recent occasion at which one or more of the Transport Session counters suffered a discontinuity. Note that this parameter functionally corresponds to ipfixTransportSessionDiscontinuityTime in the IPFIX MIB module. In contrast to ipfixTransportSessionDiscontinuityTime, the time is absolute and not relative to sysUpTime.
transportSessionStartTime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Timestamp of the start of the given Transport Session. This state parameter does not correspond to any object in the IPFIX MIB module.

show ipfix exportingProcess destination tcpExporter transportSession template

#### **Output Parameters:**

Parameter	Type	Description
accessTime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Used for Exporting Processes, this parameter contains the time when this (Options) Template was last sent to the Collector(s) or written to the file. Used for Collecting Processes, this parameter contains the time when this (Options) Template was last received from the Exporter or read from the file. Note that this parameter corresponds to ipfixTemplateAccessTime in the IPFIX MIB module.
templateDataRecords	uint64	The number of transmitted or received Data Records defined by this (Options) Template. Discontinuities in the value of this counter can occur at re-initialization of the management system, and at other times as indicated by the value of templateDiscontinuityTime. Note that this parameter corresponds to ipfixTemplateDataRecords in the IPFIX MIB module.
templateDataRecordsAccessTime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Augments the template list under transportSession data within the destination list of the IPFIX exportingProcess list, with information on the last-accessed timestamp of data-records.
templateDiscontinuityTime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Timestamp of the most recent occasion at which the counter templateDataRecords suffered a discontinuity. Note that this parameter functionally corresponds to ipfixTemplateDiscontinuityTime in the IPFIX MIB module. In contrast to ipfixTemplateDiscontinuityTime, the time is absolute and not relative to sysUpTime.
templateId	uint16 [256..65535]	This number indicates the Template ID in the IPFIX message. Note that this parameter corresponds to ipfixTemplateId in the IPFIX MIB module.

show ipfix hierarchy-meta-info

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
hierarchy-meta-info	string	This leaf provides information on the interface type or hardware class, along with the configured interface/hardware component metadata.

show ipfix last-message

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
last-message	boolean	Used to indicate the last instance of streamed data of a configured cache for an interval. It is used only as part of the exported data to the collector. The last instance will have this value as 'true'. All other instances will have this value as 'false'.

show ipfix record-type

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
record-type	enumeration One of: full-sync   on-change   audit   periodic	Data record type; applicable only for caches configured as on-change. It is used only as part of the exported data to the collector.

show ipfix to-aggregate

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
to-aggregate	boolean	This leaf provides aggregation state info of interfaces per either LAG interface-type or VSIs created on top of LAG.

## 3.13 licensing-state commands

### 3.13.1 Command Tree

```
|-- show licensing-state
    |-- features <A>
        |-- feature-code
        |-- type
        |-- verified
        |-- feature-name
        |-- grace-period-end
        |-- total-granted
        |-- total-requested
```

### 3.13.2 Commands

show licensing-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">features</a>	Not applicable	Reference to subtree parameters

show licensing-state features <A>

#### Input Parameters:

Parameter	Type	Description
A	uint64	The code for this feature, as defined in the license key installed in CSWL.

#### Output Parameters:

Parameter	Type	Description
feature-code	uint64	The code for this feature, as defined in the license key installed in CSWL.
type	enumeration One of: on/off   capacity   cde	The type of the floating feature (either on/off or capacity).

verified	boolean	If true, a license must be granted for The feature in order to be operational
feature-name	string	The name of this feature, as defined in the license key installed in CSWL.
grace-period-end	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Displays the date-and-time the feature code's grace period expires, if the the grace period is running for this feature. If no grace period is running, then this field will be left empty.
total-granted	uint32	Number of granted license keys.
total-requested	uint32	The requested number of items for this feature (type: capacity). Empty if (type: on/off).

## 3.14 loggers commands

### 3.14.1 Command Tree

```
|-- show loggers active-applications <A>  
    |-- app-name  
    |-- modules <B>  
        |-- mod-name  
        |-- level
```

### 3.14.2 Commands

show loggers active-applications <A>

#### Input Parameters:

Parameter	Type	Description
A	string	Provide the available for operator logging applications.

#### Output Parameters:

Parameter	Type	Description
app-name	string	Provide the available for operator logging applications.
<a href="#">modules</a>	Not applicable	Reference to subtree parameters

show loggers active-applications <A> modules <B>

#### Input Parameters:

Parameter	Type	Description
A	string	Provide the available for operator logging applications.
B	string	This leaf represent operator loggers name

#### Output Parameters:

Parameter	Type	Description
-----------	------	-------------

---

mod-name	string	This leaf represent operator loggers name
level	enumeration One of: none   critical   error   warning   info   debug	This leaf specifies the syslog message severity.

## 3.15 nacm commands

### 3.15.1 Command Tree

|-- [show nacm denied-data-writes](#)  
|-- [show nacm denied-notifications](#)  
|-- [show nacm denied-operations](#)

### 3.15.2 Commands

show nacm denied-data-writes

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
denied-data-writes	uint32	Number of times since the server last restarted that a protocol operation request to alter a configuration datastore was denied.

show nacm denied-notifications

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
denied-notifications	uint32	Number of times since the server last restarted that a notification was dropped for a subscription because access to the event type was denied.

show nacm denied-operations

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
denied-operations	uint32	Number of times since the server last restarted that a protocol operation request was denied.

## 3.16 netconf-server commands

### 3.16.1 Command Tree

```

|-- show netconf-server call-home callhome-state
    |-- active-endpoint
        |-- active-from
        |-- address
        |-- name
        |-- port
        |-- source
        |-- tls-cipher-suite
        |-- tls-version
    |-- endpoints
        |-- endpoint
            |-- address
            |-- name
            |-- port
            |-- source
    |-- last-connected-endpoint
        |-- address
        |-- disconnect-timestamp
        |-- name
        |-- port
        |-- source
        |-- tls-cipher-suite
        |-- tls-version
|-- show netconf-server call-home netconf-client secondary-endpoints endpoints endpoint state
    |-- active-from
    |-- disconnect-timestamp
    |-- status
    |-- tls-cipher-suite
    |-- tls-version

```

### 3.16.2 Commands

show netconf-server call-home callhome-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">active-endpoint</a>	Not applicable	Reference to subtree parameters
<a href="#">endpoints</a>	Not applicable	Reference to subtree parameters
<a href="#">last-connected-endpoint</a>	Not applicable	Reference to subtree parameters

show netconf-server call-home callhome-state active-endpoint

**Output Parameters:**

Parameter	Type	Description
active-from	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The date and time of the start of this call-home connection.
address	union union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%[\p{N}\p{L}]+)?}  string  string {length = 1..253}	The IP address or hostname of the endpoint. If a hostname is configured and the DNS resolution results in more than one IP address, the NETCONF server will process the IP addresses as if they had been explicitly configured in place of the hostname.
name	string	An arbitrary name for this endpoint.
port	uint16 [0..65535]	The IP port for this endpoint. The NETCONF server will use the IANA-assigned well-known port if no value is specified.
source	enumeration One of: dynamic   static	Source of the endpoint. Operator configured endpoint is static endpoint and dynamic endpoint is retrived by dhcp protocol
tls-cipher-suite	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-edc-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-	The TLS cipher suite used in a Call Home connection.

anon-with-aria-128-gcm-sha256 | tls-dh-anon-with-aria-256-cbc-sha384 | tls-dh-anon-with-aria-256-gcm-sha384 | tls-dh-anon-with-camellia-128-cbc-sha | tls-dh-anon-with-camellia-128-cbc-sha256 | tls-dh-anon-with-camellia-128-gcm-sha256 | tls-dh-anon-with-camellia-256-cbc-sha | tls-dh-anon-with-camellia-256-cbc-sha256 | tls-dh-anon-with-camellia-256-gcm-sha384 | tls-dh-anon-with-des-cbc-sha | tls-dh-anon-with-rc4-128-md5 | tls-dh-anon-with-seed-cbc-sha | tls-dh-dss-export-with-des40-cbc-sha | tls-dh-dss-with-3des-edc-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha256 | tls-dh-dss-with-aes-128-gcm-sha256 | tls-dh-dss-with-aes-256-cbc-sha | tls-dh-dss-with-aes-256-cbc-sha256 | tls-dh-dss-with-aes-256-gcm-sha384 | tls-dh-dss-with-aria-128-cbc-sha256 | tls-dh-dss-with-aria-128-gcm-sha256 | tls-dh-dss-with-aria-256-cbc-sha384 | tls-dh-dss-with-aria-256-gcm-sha384 | tls-dh-dss-with-camellia-128-cbc-sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-with-3des-edc-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-edc-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-

aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-edc-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-edc-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-

sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-ccm | tls-ecdh-ecdsa-with-aes-128-ccm-8 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256

| tls-ecdhe-ecdsa-with-aes-256-cbc-sha |  
| tls-ecdhe-ecdsa-with-aes-256-cbc-sha384 |  
| tls-ecdhe-ecdsa-with-aes-256-ccm | tls-  
ecdhe-ecdsa-with-aes-256-ccm-8 | tls-  
ecdhe-ecdsa-with-aes-256-gcm-sha384 |  
| tls-ecdhe-ecdsa-with-aria-128-cbc-sha256 |  
| tls-ecdhe-ecdsa-with-aria-128-gcm-sha256 |  
| tls-ecdhe-ecdsa-with-aria-256-cbc-sha384 |  
| tls-ecdhe-ecdsa-with-aria-256-gcm-sha384 |  
| tls-ecdhe-ecdsa-with-camellia-128-cbc-  
sha256 | tls-ecdhe-ecdsa-with-camellia-128-  
gcm-sha256 | tls-ecdhe-ecdsa-with-  
camellia-256-cbc-sha384 | tls-ecdhe-ecdsa-  
with-camellia-256-gcm-sha384 | tls-ecdhe-  
ecdsa-with-chacha20-poly1305-sha256 |  
| tls-ecdhe-ecdsa-with-null-sha | tls-ecdhe-  
ecdsa-with-rc4-128-sha | tls-ecdhe-psk-  
with-3des-ede-cbc-sha | tls-ecdhe-psk-  
with-aes-128-cbc-sha | tls-ecdhe-psk-with-  
aes-128-cbc-sha256 | tls-ecdhe-psk-with-  
aes-128-ccm-8-sha256 | tls-ecdhe-psk-  
with-aes-128-ccm-sha256 | tls-ecdhe-psk-  
with-aes-128-gcm-sha256 | tls-ecdhe-psk-  
with-aes-256-cbc-sha | tls-ecdhe-psk-with-  
aes-256-cbc-sha384 | tls-ecdhe-psk-with-  
aes-256-gcm-sha384 | tls-ecdhe-psk-with-  
aria-128-cbc-sha256 | tls-ecdhe-psk-with-  
aria-256-cbc-sha384 | tls-ecdhe-psk-with-  
camellia-128-cbc-sha256 | tls-ecdhe-psk-  
with-camellia-256-cbc-sha384 | tls-ecdhe-  
psk-with-chacha20-poly1305-sha256 | tls-  
ecdhe-psk-with-null-sha | tls-ecdhe-psk-  
with-null-sha256 | tls-ecdhe-psk-with-null-  
sha384 | tls-ecdhe-psk-with-rc4-128-sha |  
| tls-ecdhe-rsa-with-3des-ede-cbc-sha | tls-  
ecdhe-rsa-with-aes-128-cbc-sha | tls-ecdhe-  
rsa-with-aes-128-cbc-sha256 | tls-ecdhe-  
rsa-with-aes-128-gcm-sha256 | tls-ecdhe-  
rsa-with-aes-256-cbc-sha | tls-ecdhe-rsa-  
with-aes-256-cbc-sha384 | tls-ecdhe-rsa-  
with-aes-256-gcm-sha384 | tls-ecdhe-rsa-  
with-aria-128-cbc-sha256 | tls-ecdhe-rsa-  
with-aria-128-gcm-sha256 | tls-ecdhe-rsa-  
with-aria-256-cbc-sha384 | tls-ecdhe-rsa-  
with-aria-256-gcm-sha384 | tls-ecdhe-rsa-  
with-camellia-128-cbc-sha256 | tls-ecdhe-  
rsa-with-camellia-128-gcm-sha256 | tls-  
ecdhe-rsa-with-camellia-256-cbc-sha384 |  
| tls-ecdhe-rsa-with-camellia-256-gcm-  
sha384 | tls-ecdhe-rsa-with-chacha20-  
poly1305-sha256 | tls-ecdhe-rsa-with-null-  
sha | tls-ecdhe-rsa-with-rc4-128-sha | tls-

empty-renegotiation-info-scsv | tls-fallback-scsv | tls-gostr341112-256-with-28147-cnt-imit | tls-gostr341112-256-with-kuznyechik-ctr-omac | tls-gostr341112-256-with-magma-ctr-omac | tls-krb5-export-with-des-cbc-40-md5 | tls-krb5-export-with-des-cbc-40-sha | tls-krb5-export-with-rc2-cbc-40-md5 | tls-krb5-export-with-rc2-cbc-40-sha | tls-krb5-export-with-rc4-40-md5 | tls-krb5-export-with-rc4-40-sha | tls-krb5-with-3des-edc-cbc-md5 | tls-krb5-with-3des-edc-cbc-sha | tls-krb5-with-des-cbc-md5 | tls-krb5-with-des-cbc-sha | tls-krb5-with-idea-cbc-md5 | tls-krb5-with-idea-cbc-sha | tls-krb5-with-rc4-128-md5 | tls-krb5-with-rc4-128-sha | tls-null-with-null-null | tls-psk-dhe-with-aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-edc-cbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-aes-128-cbc-sha256 | tls-psk-with-aes-128-ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-with-aes-128-gcm-sha256 | tls-psk-with-aes-256-cbc-sha | tls-psk-with-aes-256-cbc-sha384 | tls-psk-with-aes-256-ccm | tls-psk-with-aes-256-ccm-8 | tls-psk-with-aes-256-gcm-sha384 | tls-psk-with-aria-128-cbc-sha256 | tls-psk-with-aria-128-gcm-sha256 | tls-psk-with-aria-256-cbc-sha384 | tls-psk-with-aria-256-gcm-sha384 | tls-psk-with-camellia-128-cbc-sha256 | tls-psk-with-camellia-128-gcm-sha256 | tls-psk-with-camellia-256-cbc-sha384 | tls-psk-with-camellia-256-gcm-sha384 | tls-psk-with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha | tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-edc-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha | tls-rsa-psk-with-aes-256-cbc-sha384 | tls-rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-psk-with-aria-128-cbc-sha256 | tls-rsa-psk-with-aria-128-gcm-sha256 | tls-rsa-psk-with-aria-256-cbc-sha384 | tls-rsa-psk-with-aria-256-gcm-sha384 | tls-rsa-psk-with-camellia-128-cbc-sha256 | tls-rsa-psk-with-camellia-128-gcm-sha256 | tls-rsa-psk-with-camellia-256-cbc-sha384 | tls-rsa-psk-with-

	camellia-256-gcm-sha384   tls-rsa-psk-with-chacha20-poly1305-sha256   tls-rsa-psk-with-null-sha   tls-rsa-psk-with-null-sha256   tls-rsa-psk-with-null-sha384   tls-rsa-psk-with-rc4-128-sha   tls-rsa-with-3des-ede-cbc-sha   tls-rsa-with-aes-128-cbc-sha   tls-rsa-with-aes-128-cbc-sha256   tls-rsa-with-aes-128-ccm   tls-rsa-with-aes-128-ccm-8   tls-rsa-with-aes-128-gcm-sha256   tls-rsa-with-aes-256-cbc-sha   tls-rsa-with-aes-256-cbc-sha256   tls-rsa-with-aes-256-ccm   tls-rsa-with-aes-256-ccm-8   tls-rsa-with-aes-256-gcm-sha384   tls-rsa-with-aria-128-cbc-sha256   tls-rsa-with-aria-128-gcm-sha256   tls-rsa-with-aria-256-cbc-sha384   tls-rsa-with-aria-256-gcm-sha384   tls-rsa-with-camellia-128-cbc-sha   tls-rsa-with-camellia-128-cbc-sha256   tls-rsa-with-camellia-128-gcm-sha256   tls-rsa-with-camellia-256-cbc-sha   tls-rsa-with-camellia-256-cbc-sha256   tls-rsa-with-camellia-256-gcm-sha384   tls-rsa-with-des-cbc-sha   tls-rsa-with-idea-cbc-sha   tls-rsa-with-null-md5   tls-rsa-with-null-sha   tls-rsa-with-null-sha256   tls-rsa-with-rc4-128-md5   tls-rsa-with-rc4-128-sha   tls-rsa-with-seed-cbc-sha   tls-sha256-sha256   tls-sha384-sha384   tls-sm4-ccm-sm3   tls-sm4-gcm-sm3   tls-srp-sha-dss-with-3des-ede-cbc-sha   tls-srp-sha-dss-with-aes-128-cbc-sha   tls-srp-sha-dss-with-aes-256-cbc-sha   tls-srp-sha-rsa-with-3des-ede-cbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-ede-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha	
tls-version	identityref One of: tls12   tls13	The TLS version used in a Call Home connection.

show netconf-server call-home callhome-state endpoints

#### Output Parameters:

Parameter	Type	Description
<a href="#">endpoint</a>	Not applicable	Reference to subtree parameters

show netconf-server call-home callhome-state endpoints endpoint

**Output Parameters:**

Parameter	Type	Description
address	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	The IP address or hostname of the endpoint. If a hostname is configured and the DNS resolution results in more than one IP address, the NETCONF server will process the IP addresses as if they had been explicitly configured in place of the hostname.
name	string	An arbitrary name for this endpoint.
port	uint16 [0..65535]	The IP port for this endpoint. The NETCONF server will use the IANA-assigned well-known port if no value is specified.
source	enumeration One of: dynamic   static	Source of the endpoint. Operator configured endpoint is static endpoint and dynamic endpoint is retrived by dhcp protocol

show netconf-server call-home callhome-state last-connected-endpoint

**Output Parameters:**

Parameter	Type	Description
address	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string  string {length = 1..253}	The IP address or hostname of the endpoint. If a hostname is configured and the DNS resolution results in more than one IP address, the NETCONF server will process the IP addresses as if they had been explicitly configured in place of the hostname.

disconnect-timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The date and time of the closure of last call-home connection.
name	string	An arbitrary name for this endpoint.
port	uint16 [0..65535]	The IP port for this endpoint. The NETCONF server will use the IANA-assigned well-known port if no value is specified.
source	enumeration One of: dynamic   static	Source of the endpoint. Operator configured endpoint is static endpoint and dynamic endpoint is retrieved by dhcp protocol
tls-cipher-suite	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-ede-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-anon-with-aria-128-gcm-sha256   tls-dh-anon-with-aria-256-cbc-sha384   tls-dh-anon-with-aria-256-gcm-sha384   tls-dh-anon-with-camellia-128-cbc-sha   tls-dh-anon-with-camellia-128-cbc-sha256   tls-dh-anon-with-camellia-128-gcm-sha256   tls-dh-anon-with-camellia-256-cbc-sha   tls-dh-anon-with-camellia-256-cbc-sha256   tls-dh-anon-with-camellia-256-gcm-sha384   tls-dh-anon-with-des-cbc-sha   tls-dh-anon-with-rc4-128-md5   tls-dh-anon-with-seed-cbc-sha   tls-dh-dss-export-with-des40-cbc-sha   tls-dh-dss-with-3des-ede-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha256   tls-dh-dss-with-aes-128-gcm-sha256   tls-dh-dss-with-aes-256-cbc-sha   tls-dh-dss-with-aes-256-cbc-sha256   tls-dh-dss-with-aes-256-gcm-sha384   tls-dh-dss-with-aria-128-cbc-sha256   tls-dh-dss-with-aria-128-gcm-sha256   tls-dh-dss-with-aria-256-cbc-sha384   tls-dh-dss-with-aria-256-gcm-	The TLS cipher suite used in a Call Home connection.

sha384 | tls-dh-dss-with-camellia-128-cbc-sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-with-3des-ede-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-ede-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-

gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-

ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdhe-ecdsa-with-3des-ede-cbc-sha | tls-ecdhe-ecdsa-with-aes-128-cbc-sha | tls-ecdhe-ecdsa-with-aes-128-cbc-sha256 | tls-ecdhe-ecdsa-with-aes-128-ccm | tls-ecdhe-ecdsa-with-aes-128-ccm-8 | tls-ecdhe-ecdsa-with-aes-128-gcm-sha256 | tls-ecdhe-ecdsa-with-aes-256-cbc-sha | tls-ecdhe-ecdsa-with-aes-256-cbc-sha384 | tls-ecdhe-ecdsa-with-aes-256-ccm | tls-ecdhe-ecdsa-with-aes-256-ccm-8 | tls-ecdhe-ecdsa-with-aes-256-gcm-sha384 | tls-ecdhe-ecdsa-with-aria-128-cbc-sha256 | tls-ecdhe-ecdsa-with-aria-128-gcm-sha256 | tls-ecdhe-ecdsa-with-aria-256-cbc-sha384 | tls-ecdhe-ecdsa-with-aria-256-gcm-sha384 | tls-ecdhe-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdhe-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdhe-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdhe-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdhe-ecdsa-with-chacha20-poly1305-sha256 | tls-ecdhe-ecdsa-with-null-sha | tls-ecdhe-ecdsa-with-rc4-128-sha | tls-ecdhe-psk-with-3des-ede-cbc-sha | tls-ecdhe-psk-with-aes-128-cbc-sha | tls-ecdhe-psk-with-aes-128-cbc-sha256 | tls-ecdhe-psk-with-aes-128-ccm-8-sha256 | tls-ecdhe-psk-with-aes-128-ccm-sha256 | tls-ecdhe-psk-

with-aes-128-gcm-sha256 | tls-ecdh-psk-with-aes-256-cbc-sha | tls-ecdh-psk-with-aes-256-cbc-sha384 | tls-ecdh-psk-with-aes-256-gcm-sha384 | tls-ecdh-psk-with-aria-128-cbc-sha256 | tls-ecdh-psk-with-aria-256-cbc-sha384 | tls-ecdh-psk-with-camellia-128-cbc-sha256 | tls-ecdh-psk-with-camellia-256-cbc-sha384 | tls-ecdh-psk-with-chacha20-poly1305-sha256 | tls-ecdh-psk-with-null-sha | tls-ecdh-psk-with-null-sha256 | tls-ecdh-psk-with-null-sha384 | tls-ecdh-psk-with-rc4-128-sha | tls-ecdh-rsa-with-3des-ede-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-chacha20-poly1305-sha256 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-empty-renegotiation-info-scsv | tls-fallback-scsv | tls-gostr341112-256-with-28147-cnt-imit | tls-gostr341112-256-with-kuznyechik-ctr-omac | tls-gostr341112-256-with-magma-ctr-omac | tls-krb5-export-with-des-cbc-40-md5 | tls-krb5-export-with-des-cbc-40-sha | tls-krb5-export-with-rc2-cbc-40-md5 | tls-krb5-export-with-rc2-cbc-40-sha | tls-krb5-export-with-rc4-40-md5 | tls-krb5-export-with-rc4-40-sha | tls-krb5-with-3des-ede-cbc-md5 | tls-krb5-with-3des-ede-cbc-sha | tls-krb5-with-des-cbc-md5 | tls-krb5-with-des-cbc-sha | tls-krb5-with-idea-cbc-md5 | tls-krb5-with-idea-cbc-sha | tls-krb5-with-rc4-128-md5 | tls-krb5-with-rc4-128-sha | tls-null-with-null-null | tls-psk-dhe-with-aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-ede-cbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-aes-128-cbc-sha256 | tls-psk-with-aes-128-ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-with-aes-128-gcm-sha256 | tls-psk-with-

aes-256-cbc-sha | tls-psk-with-aes-256-cbc-sha384 | tls-psk-with-aes-256-ccm |  
tls-psk-with-aes-256-ccm-8 | tls-psk-with-aes-256-gcm-sha384 | tls-psk-with-aria-128-cbc-sha256 | tls-psk-with-aria-128-gcm-sha256 | tls-psk-with-aria-256-cbc-sha384 |  
tls-psk-with-aria-256-gcm-sha384 | tls-psk-with-camellia-128-cbc-sha256 | tls-psk-with-camellia-128-gcm-sha256 | tls-psk-with-camellia-256-cbc-sha384 | tls-psk-with-camellia-256-gcm-sha384 |  
tls-psk-with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha |  
tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-ede-cbc-sha |  
tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha |  
tls-rsa-psk-with-aes-256-cbc-sha384 | tls-rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-psk-with-aria-128-cbc-sha256 | tls-rsa-psk-with-aria-128-gcm-sha256 |  
tls-rsa-psk-with-aria-256-cbc-sha384 | tls-rsa-psk-with-aria-256-gcm-sha384 | tls-rsa-psk-with-camellia-128-cbc-sha256 | tls-rsa-psk-with-camellia-128-gcm-sha256 |  
tls-rsa-psk-with-camellia-256-cbc-sha384 | tls-rsa-psk-with-camellia-256-gcm-sha384 | tls-rsa-psk-with-chacha20-poly1305-sha256 |  
tls-rsa-psk-with-null-sha | tls-rsa-psk-with-null-sha256 | tls-rsa-psk-with-null-sha384 | tls-rsa-psk-with-rc4-128-sha |  
tls-rsa-with-3des-ede-cbc-sha | tls-rsa-with-aes-128-cbc-sha | tls-rsa-with-aes-128-cbc-sha256 |  
tls-rsa-with-aes-128-ccm | tls-rsa-with-aes-128-ccm-8 | tls-rsa-with-aes-128-gcm-sha256 |  
tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-aes-256-cbc-sha256 | tls-rsa-with-aes-256-ccm |  
tls-rsa-with-aes-256-ccm-8 | tls-rsa-with-aes-256-gcm-sha384 | tls-rsa-with-aria-128-cbc-sha256 |  
tls-rsa-with-aria-128-gcm-sha256 | tls-rsa-with-aria-256-cbc-sha384 | tls-rsa-with-aria-256-gcm-sha384 |  
tls-rsa-with-camellia-128-cbc-sha | tls-rsa-with-camellia-128-cbc-sha256 |  
tls-rsa-with-camellia-128-gcm-sha256 | tls-rsa-with-camellia-256-cbc-sha |  
tls-rsa-with-camellia-256-cbc-sha256 | tls-rsa-with-camellia-256-gcm-sha384 |  
tls-rsa-with-des-

	cbc-sha   tls-rsa-with-idea-cbc-sha   tls-rsa-with-null-md5   tls-rsa-with-null-sha   tls-rsa-with-null-sha256   tls-rsa-with-rc4-128-md5   tls-rsa-with-rc4-128-sha   tls-rsa-with-seed-cbc-sha   tls-sha256-sha256   tls-sha384-sha384   tls-sm4-ccm-sm3   tls-sm4-gcm-sm3   tls-srp-sha-dss-with-3des-edc-cbc-sha   tls-srp-sha-dss-with-aes-128-cbc-sha   tls-srp-sha-dss-with-aes-256-cbc-sha   tls-srp-sha-rsa-with-3des-edc-cbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-edc-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha	
tls-version	identityref One of: tls12   tls13	The TLS version used in a Call Home connection.

show netconf-server call-home netconf-client secondary-endpoints endpoints endpoint state

#### Output Parameters:

Parameter	Type	Description
active-from	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The connection date and time of this secondary call-home connection
disconnect-timestamp	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The disconnection date and time of this secondary call-home connection
status	string	Optionally, describe the status of the secondary call-home connection
tls-cipher-suite	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-edc-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-	The TLS cipher suite used in a Call Home connection.

anon-with-aes-256-gcm-sha384 | tls-dh-anon-with-aria-128-cbc-sha256 | tls-dh-anon-with-aria-128-gcm-sha256 | tls-dh-anon-with-aria-256-cbc-sha384 | tls-dh-anon-with-aria-256-gcm-sha384 | tls-dh-anon-with-camellia-128-cbc-sha | tls-dh-anon-with-camellia-128-cbc-sha256 | tls-dh-anon-with-camellia-128-gcm-sha256 | tls-dh-anon-with-camellia-256-cbc-sha | tls-dh-anon-with-camellia-256-cbc-sha256 | tls-dh-anon-with-camellia-256-gcm-sha384 | tls-dh-anon-with-des-cbc-sha | tls-dh-anon-with-rc4-128-md5 | tls-dh-anon-with-seed-cbc-sha | tls-dh-dss-export-with-des40-cbc-sha | tls-dh-dss-with-3des-edc-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha | tls-dh-dss-with-aes-128-cbc-sha256 | tls-dh-dss-with-aes-128-gcm-sha256 | tls-dh-dss-with-aes-256-cbc-sha | tls-dh-dss-with-aes-256-cbc-sha256 | tls-dh-dss-with-aes-256-gcm-sha384 | tls-dh-dss-with-aria-128-cbc-sha256 | tls-dh-dss-with-aria-128-gcm-sha256 | tls-dh-dss-with-aria-256-cbc-sha384 | tls-dh-dss-with-aria-256-gcm-sha384 | tls-dh-dss-with-camellia-128-cbc-sha | tls-dh-dss-with-camellia-128-cbc-sha256 | tls-dh-dss-with-camellia-128-gcm-sha256 | tls-dh-dss-with-camellia-256-cbc-sha | tls-dh-dss-with-camellia-256-cbc-sha256 | tls-dh-dss-with-camellia-256-gcm-sha384 | tls-dh-dss-with-des-cbc-sha | tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-export-with-des40-cbc-sha | tls-dh-rsa-with-3des-edc-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha | tls-dh-rsa-with-aes-128-cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-sha256 | tls-dh-rsa-with-aes-256-cbc-sha | tls-dh-rsa-with-aes-256-cbc-sha256 | tls-dh-rsa-with-aes-256-gcm-sha384 | tls-dh-rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-with-aria-128-gcm-sha256 | tls-dh-rsa-with-aria-256-cbc-sha384 | tls-dh-rsa-with-aria-256-gcm-sha384 | tls-dh-rsa-with-camellia-128-cbc-sha | tls-dh-rsa-with-camellia-128-cbc-sha256 | tls-dh-rsa-with-camellia-128-gcm-sha256 | tls-dh-rsa-with-camellia-256-cbc-sha | tls-dh-rsa-with-camellia-256-cbc-sha256 | tls-dh-rsa-with-camellia-256-gcm-sha384 | tls-dh-rsa-with-des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha | tls-dhe-dss-export-with-des40-cbc-sha | tls-dhe-dss-with-3des-edc-cbc-sha | tls-

dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-with-aes-128-cbc-sha256 | tls-dhe-dss-with-aes-128-gcm-sha256 | tls-dhe-dss-with-aes-256-cbc-sha | tls-dhe-dss-with-aes-256-cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-sha384 | tls-dhe-dss-with-aria-128-cbc-sha256 | tls-dhe-dss-with-aria-128-gcm-sha256 | tls-dhe-dss-with-aria-256-cbc-sha384 | tls-dhe-dss-with-aria-256-gcm-sha384 | tls-dhe-dss-with-camellia-128-cbc-sha | tls-dhe-dss-with-camellia-128-cbc-sha256 | tls-dhe-dss-with-camellia-128-gcm-sha256 | tls-dhe-dss-with-camellia-256-cbc-sha | tls-dhe-dss-with-camellia-256-cbc-sha256 | tls-dhe-dss-with-camellia-256-gcm-sha384 | tls-dhe-dss-with-des-cbc-sha | tls-dhe-dss-with-seed-cbc-sha | tls-dhe-psk-with-3des-ede-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha | tls-dhe-psk-with-aes-128-cbc-sha256 | tls-dhe-psk-with-aes-128-ccm | tls-dhe-psk-with-aes-128-gcm-sha256 | tls-dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-

```

sha256 | tls-dhe-rsa-with-camellia-128-gcm-
sha256 | tls-dhe-rsa-with-camellia-256-cbc-
sha | tls-dhe-rsa-with-camellia-256-cbc-
sha256 | tls-dhe-rsa-with-camellia-256-
gcm-sha384 | tls-dhe-rsa-with-chacha20-
poly1305-sha256 | tls-dhe-rsa-with-des-
cbc-sha | tls-dhe-rsa-with-seed-cbc-sha |
tls-eccpwd-with-aes-128-ccm-sha256 | tls-
eccpwd-with-aes-128-gcm-sha256 | tls-
eccpwd-with-aes-256-ccm-sha384 | tls-
eccpwd-with-aes-256-gcm-sha384 | tls-
ecdh-anon-with-3des-edc-cbc-sha | tls-
ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-
anon-with-aes-256-cbc-sha | tls-ecdh-anon-
with-null-sha | tls-ecdh-anon-with-rc4-128-
sha | tls-ecdh-ecdsa-with-3des-edc-cbc-sha
| tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-
ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-
ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-
ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-
ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-
ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-
ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-
ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-
ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-
ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-
ecdsa-with-camellia-128-cbc-sha256 | tls-
ecdh-ecdsa-with-camellia-128-gcm-sha256
| tls-ecdh-ecdsa-with-camellia-256-cbc-
sha384 | tls-ecdh-ecdsa-with-camellia-256-
gcm-sha384 | tls-ecdh-ecdsa-with-null-
sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-
ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-
rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-
with-aes-128-cbc-sha256 | tls-ecdh-rsa-
with-aes-128-gcm-sha256 | tls-ecdh-rsa-
with-aes-256-cbc-sha | tls-ecdh-rsa-with-
aes-256-cbc-sha384 | tls-ecdh-rsa-with-
aes-256-gcm-sha384 | tls-ecdh-rsa-with-
aria-128-cbc-sha256 | tls-ecdh-rsa-with-
aria-128-gcm-sha256 | tls-ecdh-rsa-with-
aria-256-cbc-sha384 | tls-ecdh-rsa-with-
aria-256-gcm-sha384 | tls-ecdh-rsa-with-
camellia-128-cbc-sha256 | tls-ecdh-rsa-with-
camellia-128-gcm-sha256 | tls-ecdh-rsa-
with-camellia-256-cbc-sha384 | tls-ecdh-rsa-
with-camellia-256-gcm-sha384 | tls-ecdh-
rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-
sha | tls-ecdh-ecdsa-with-3des-edc-cbc-
sha | tls-ecdh-ecdsa-with-aes-128-cbc-
sha | tls-ecdh-ecdsa-with-aes-128-cbc-
sha256 | tls-ecdh-ecdsa-with-aes-128-ccm

```

```

| tls-ecdhc-ecdsa-with-aes-128-ccm-8 | tls-
ecdhc-ecdsa-with-aes-128-gcm-sha256
| tls-ecdhc-ecdsa-with-aes-256-cbc-sha |
tls-ecdhc-ecdsa-with-aes-256-cbc-sha384
| tls-ecdhc-ecdsa-with-aes-256-ccm | tls-
ecdhc-ecdsa-with-aes-256-ccm-8 | tls-
ecdhc-ecdsa-with-aes-256-gcm-sha384 |
tls-ecdhc-ecdsa-with-aria-128-cbc-sha256 |
tls-ecdhc-ecdsa-with-aria-128-gcm-sha256 |
tls-ecdhc-ecdsa-with-aria-256-cbc-sha384 |
tls-ecdhc-ecdsa-with-aria-256-gcm-sha384
| tls-ecdhc-ecdsa-with-camellia-128-cbc-
sha256 | tls-ecdhc-ecdsa-with-camellia-128-
gcm-sha256 | tls-ecdhc-ecdsa-with-
camellia-256-cbc-sha384 | tls-ecdhc-ecdsa-
with-camellia-256-gcm-sha384 | tls-ecdhc-
ecdsa-with-chacha20-poly1305-sha256 |
tls-ecdhc-ecdsa-with-null-sha | tls-ecdhc-
ecdsa-with-rc4-128-sha | tls-ecdhc-psk-
with-3des-ede-cbc-sha | tls-ecdhc-psk-
with-aes-128-cbc-sha | tls-ecdhc-psk-with-
aes-128-cbc-sha256 | tls-ecdhc-psk-with-
aes-128-ccm-8-sha256 | tls-ecdhc-psk-
with-aes-128-ccm-sha256 | tls-ecdhc-psk-
with-aes-128-gcm-sha256 | tls-ecdhc-psk-
with-aes-256-cbc-sha | tls-ecdhc-psk-with-
aes-256-cbc-sha384 | tls-ecdhc-psk-with-
aes-256-gcm-sha384 | tls-ecdhc-psk-with-
aria-128-cbc-sha256 | tls-ecdhc-psk-with-
aria-256-cbc-sha384 | tls-ecdhc-psk-with-
camellia-128-cbc-sha256 | tls-ecdhc-psk-
with-camellia-256-cbc-sha384 | tls-ecdhc-
psk-with-chacha20-poly1305-sha256 | tls-
ecdhc-psk-with-null-sha | tls-ecdhc-psk-
with-null-sha256 | tls-ecdhc-psk-with-null-
sha384 | tls-ecdhc-psk-with-rc4-128-sha |
tls-ecdhc-rsa-with-3des-ede-cbc-sha | tls-
ecdhc-rsa-with-aes-128-cbc-sha | tls-ecdhc-
rsa-with-aes-128-cbc-sha256 | tls-ecdhc-
rsa-with-aes-128-gcm-sha256 | tls-ecdhc-
rsa-with-aes-256-cbc-sha | tls-ecdhc-rsa-
with-aes-256-cbc-sha384 | tls-ecdhc-rsa-
with-aes-256-gcm-sha384 | tls-ecdhc-rsa-
with-aria-128-cbc-sha256 | tls-ecdhc-rsa-
with-aria-128-gcm-sha256 | tls-ecdhc-rsa-
with-aria-256-cbc-sha384 | tls-ecdhc-rsa-
with-aria-256-gcm-sha384 | tls-ecdhc-rsa-
with-camellia-128-cbc-sha256 | tls-ecdhc-
rsa-with-camellia-128-gcm-sha256 | tls-
ecdhc-rsa-with-camellia-256-cbc-sha384
| tls-ecdhc-rsa-with-camellia-256-gcm-
sha384 | tls-ecdhc-rsa-with-chacha20-

```

poly1305-sha256 | tls-ecdhe-rsa-with-null-sha | tls-ecdhe-rsa-with-rc4-128-sha | tls-empty-renegotiation-info-scsv | tls-fallback-scsv | tls-gostr341112-256-with-28147-cnt-imit | tls-gostr341112-256-with-kuznyechik-ctr-omac | tls-gostr341112-256-with-magma-ctr-omac | tls-krb5-export-with-des-cbc-40-md5 | tls-krb5-export-with-des-cbc-40-sha | tls-krb5-export-with-rc2-cbc-40-md5 | tls-krb5-export-with-rc2-cbc-40-sha | tls-krb5-export-with-rc4-40-md5 | tls-krb5-export-with-rc4-40-sha | tls-krb5-with-3des-edecbc-md5 | tls-krb5-with-3des-edecbc-sha | tls-krb5-with-des-cbc-md5 | tls-krb5-with-des-cbc-sha | tls-krb5-with-idea-cbc-md5 | tls-krb5-with-idea-cbc-sha | tls-krb5-with-rc4-128-md5 | tls-krb5-with-rc4-128-sha | tls-null-with-null-null | tls-psk-dhe-with-aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-edecbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-aes-128-cbc-sha256 | tls-psk-with-aes-128-ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-with-aes-128-gcm-sha256 | tls-psk-with-aes-256-cbc-sha | tls-psk-with-aes-256-cbc-sha384 | tls-psk-with-aes-256-ccm | tls-psk-with-aes-256-ccm-8 | tls-psk-with-aes-256-gcm-sha384 | tls-psk-with-aria-128-cbc-sha256 | tls-psk-with-aria-128-gcm-sha256 | tls-psk-with-aria-256-cbc-sha384 | tls-psk-with-aria-256-gcm-sha384 | tls-psk-with-camellia-128-cbc-sha256 | tls-psk-with-camellia-128-gcm-sha256 | tls-psk-with-camellia-256-cbc-sha384 | tls-psk-with-camellia-256-gcm-sha384 | tls-psk-with-chacha20-poly1305-sha256 | tls-psk-with-null-sha | tls-psk-with-null-sha256 | tls-psk-with-null-sha384 | tls-psk-with-rc4-128-sha | tls-rsa-export-with-des40-cbc-sha | tls-rsa-export-with-rc2-cbc-40-md5 | tls-rsa-export-with-rc4-40-md5 | tls-rsa-psk-with-3des-edecbc-sha | tls-rsa-psk-with-aes-128-cbc-sha | tls-rsa-psk-with-aes-128-cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-sha256 | tls-rsa-psk-with-aes-256-cbc-sha | tls-rsa-psk-with-aes-256-cbc-sha384 | tls-rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-psk-with-aria-128-cbc-sha256 | tls-rsa-psk-with-aria-128-gcm-sha256 | tls-rsa-psk-with-aria-256-cbc-sha384 | tls-rsa-psk-with-aria-256-gcm-sha384 | tls-rsa-psk-with-camellia-128-cbc-sha256 | tls-rsa-psk-with-

	camellia-128-gcm-sha256   tls-rsa-psk-with-camellia-256-cbc-sha384   tls-rsa-psk-with-camellia-256-gcm-sha384   tls-rsa-psk-with-chacha20-poly1305-sha256   tls-rsa-psk-with-null-sha   tls-rsa-psk-with-null-sha256   tls-rsa-psk-with-null-sha384   tls-rsa-psk-with-rc4-128-sha   tls-rsa-with-3des-edc-cbc-sha   tls-rsa-with-aes-128-cbc-sha   tls-rsa-with-aes-128-cbc-sha256   tls-rsa-with-aes-128-ccm   tls-rsa-with-aes-128-ccm-8   tls-rsa-with-aes-128-gcm-sha256   tls-rsa-with-aes-256-cbc-sha   tls-rsa-with-aes-256-cbc-sha256   tls-rsa-with-aes-256-ccm   tls-rsa-with-aes-256-ccm-8   tls-rsa-with-aes-256-gcm-sha384   tls-rsa-with-aria-128-cbc-sha256   tls-rsa-with-aria-128-gcm-sha256   tls-rsa-with-aria-256-cbc-sha384   tls-rsa-with-aria-256-gcm-sha384   tls-rsa-with-camellia-128-cbc-sha   tls-rsa-with-camellia-128-cbc-sha256   tls-rsa-with-camellia-128-gcm-sha256   tls-rsa-with-camellia-256-cbc-sha   tls-rsa-with-camellia-256-cbc-sha256   tls-rsa-with-camellia-256-gcm-sha384   tls-rsa-with-des-cbc-sha   tls-rsa-with-idea-cbc-sha   tls-rsa-with-null-md5   tls-rsa-with-null-sha   tls-rsa-with-null-sha256   tls-rsa-with-rc4-128-md5   tls-rsa-with-rc4-128-sha   tls-rsa-with-seed-cbc-sha   tls-sha256-sha256   tls-sha384-sha384   tls-sm4-ccm-sm3   tls-sm4-gcm-sm3   tls-srp-sha-dss-with-3des-edc-cbc-sha   tls-srp-sha-dss-with-aes-128-cbc-sha   tls-srp-sha-dss-with-aes-256-cbc-sha   tls-srp-sha-rsa-with-3des-edc-cbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-edc-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha	
tls-version	identityref One of: tls12   tls13	The TLS version used in a Call Home connection.

## 3.17 netconf-state commands

### 3.17.1 Command Tree

```
|-- show netconf-state
  |-- capabilities
  |   |-- capability
  |-- datastores
  |   |-- datastore <A>
  |       |-- name
  |       |-- locks
  |           |-- global-lock
  |               |-- locked-by-session
  |               |-- locked-time
  |           |-- partial-lock <B>
  |               |-- lock-id
  |               |-- locked-by-session
  |               |-- locked-time
  |               |-- locked-node
  |               |-- select
  |           |-- transaction-lock
  |               |-- locked-by-session
  |       |-- transaction-id
  |-- files
  |   |-- file <A>
  |       |-- name
  |       |-- context
  |       |-- created
  |       |-- creator
  |-- processor-state
  |   |-- current-state
  |-- schemas
  |   |-- schema <A><B><C>
  |       |-- identifier
  |       |-- version
  |       |-- format
  |       |-- namespace
  |       |-- location
  |-- sessions
  |   |-- session <A>
  |       |-- session-id
  |       |-- login-time
  |       |-- transport
  |       |-- username
  |       |-- in-bad-rpcs
  |       |-- in-rpcs
  |       |-- out-notifications
  |       |-- out-rpc-errors
  |       |-- source-host
  |       |-- transaction <B>
  |           |-- id
  |           |-- config-mode
  |           |-- db
```

```

|-- mode
|-- statistics
|-- dropped-sessions
|-- in-bad-hellos
|-- in-bad-rpcs
|-- in-rpcs
|-- in-sessions
|-- netconf-start-time
|-- out-notifications
|-- out-rpc-errors
|-- streams
|-- stream <A>
|-- name
|-- description
|-- replay-log-creation-time
|-- replay-support
|-- replay-log-aged-time
|-- subscriber <B>
|-- session-id
|-- start-time
|-- stop-time

```

### 3.17.2 Commands

show netconf-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">capabilities</a>	Not applicable	Reference to subtree parameters
<a href="#">datastores</a>	Not applicable	Reference to subtree parameters
<a href="#">files</a>	Not applicable	Reference to subtree parameters
<a href="#">processor-state</a>	Not applicable	Reference to subtree parameters
<a href="#">schemas</a>	Not applicable	Reference to subtree parameters
<a href="#">sessions</a>	Not applicable	Reference to subtree parameters
<a href="#">statistics</a>	Not applicable	Reference to subtree parameters
<a href="#">streams</a>	Not applicable	Reference to subtree parameters

show netconf-state capabilities

**Output Parameters:**

Parameter	Type	Description
capability	string	List of NETCONF capabilities supported by the server.

show netconf-state datastores

**Output Parameters:**

Parameter	Type	Description
<a href="#">datastore</a>	Not applicable	Reference to subtree parameters

show netconf-state datastores datastore <A>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   candidate   startup	Name of the datastore associated with this list entry.

**Output Parameters:**

Parameter	Type	Description
name	enumeration One of: running   candidate   startup	Name of the datastore associated with this list entry.
<a href="#">locks</a>	Not applicable	Reference to subtree parameters
transaction-id	string	An opaque string that uniquely identifies the last transaction towards the datastore.  A client can use this to detect if the datastore is modified.

show netconf-state datastores datastore <A> locks

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   candidate   startup	Name of the datastore associated with this list entry.

**Output Parameters:**

Parameter	Type	Description
<a href="#">global-lock</a>	Not applicable	Reference to subtree parameters
<a href="#">partial-lock</a>	Not applicable	Reference to subtree parameters
<a href="#">transaction-lock</a>	Not applicable	Reference to subtree parameters

show netconf-state datastores datastore <A> locks global-lock

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   candidate   startup	Name of the datastore associated with this list entry.

**Output Parameters:**

Parameter	Type	Description
locked-by-session	uint32	The session ID of the session that has locked this resource. Both a global lock and a partial lock MUST contain the NETCONF session-id.  If the lock is held by a session that is not managed by the NETCONF server (e.g., a CLI session), a session id of 0 (zero) is reported.
locked-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	The date and time of when the resource was locked.

show netconf-state datastores datastore <A> locks partial-lock <B>

**Input Parameters:**

Parameter	Type	Description
A	enumeration One of: running   candidate   startup	Name of the datastore associated with this list entry.
B	uint32	This is the lock id returned in the <partial-lock> response.

**Output Parameters:**

Parameter	Type	Description
lock-id	uint32	This is the lock id returned in the <partial-lock> response.
locked-by-session	uint32	The session ID of the session that has locked this resource. Both a global lock and a partial lock MUST contain the NETCONF session-id.  If the lock is held by a session that is not managed by the NETCONF server (e.g., a CLI session), a session id of 0 (zero) is reported.
locked-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The date and time of when the resource was locked.
locked-node	instance-identifier	The list of instance-identifiers (i.e., the locked nodes).  The scope of the partial lock is defined by the list of locked nodes.
select	string	The xpath expression that was used to request the lock. The select expression indicates the original intended scope of the lock.

show netconf-state datastores datastore <A> locks transaction-lock

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	enumeration One of: running   candidate   startup	Name of the datastore associated with this list entry.
---	---	--

**Output Parameters:**

Parameter	Type	Description
locked-by-session	uint32	The session ID of the session that started the transaction that has the transaction lock.

show netconf-state files

**Output Parameters:**

Parameter	Type	Description
<a href="#">file</a>	Not applicable	Reference to subtree parameters

show netconf-state files file <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The filename is an absolute path to the file, i.e. it always starts with a '/'.

**Output Parameters:**

Parameter	Type	Description
name	string	The filename is an absolute path to the file, i.e. it always starts with a '/'.
context	union enumeration One of: cli   netconf   webui  string	The context used when the file was created. If this element is not present, the info is not known to the server.
created	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	The time the file was created. If this element is not present, the info is not known to the server.

creator	string	The name of the user that created the file. If this element is not present, the info is not known to the server.
---------	--------	--

show netconf-state processor-state

**Output Parameters:**

Parameter	Type	Description
current-state	enumeration One of: free   pre-validation   prepare-phase   abort-phase   commit-phase	Representing the current RPC transaction processing state.

show netconf-state schemas

**Output Parameters:**

Parameter	Type	Description
<a href="#">schema</a>	Not applicable	Reference to subtree parameters

show netconf-state schemas schema <A><B><C>

**Input Parameters:**

Parameter	Type	Description
A	string	<p>Identifier to uniquely reference the schema. The identifier is used in the &lt;get-schema&gt; operation and may be used for other purposes such as file retrieval.</p> <p>For modeling languages that support or require a data model name (e.g., YANG module name) the identifier MUST match that name. For YANG data models, the identifier is the name of the module or submodule. In other cases, an identifier such as a filename MAY be used instead.</p>

B	string	<p>Version of the schema supported. Multiple versions MAY be supported simultaneously by a NETCONF server. Each version MUST be reported individually in the schema list, i.e., with same identifier, possibly different location, but different version.</p> <p>For YANG data models, version is the value of the most recent YANG 'revision' statement in the module or submodule, or the empty string if no 'revision' statement is present.</p>
C	identityref One of: rnc   rng   xsd   yang   yin	<p>The data modeling language the schema is written in (currently xsd, yang, yin, rng, or rnc). For YANG data models, 'yang' format MUST be supported and 'yin' format MAY also be provided.</p>

**Output Parameters:**

Parameter	Type	Description
identifier	string	<p>Identifier to uniquely reference the schema. The identifier is used in the &lt;get-schema&gt; operation and may be used for other purposes such as file retrieval.</p> <p>For modeling languages that support or require a data model name (e.g., YANG module name) the identifier MUST match that name. For YANG data models, the identifier is the name of the module or submodule. In other cases, an identifier such as a filename MAY be used instead.</p>
version	string	<p>Version of the schema supported. Multiple versions MAY be supported simultaneously by a NETCONF server. Each version MUST be reported individually in the schema list, i.e., with same identifier, possibly different location, but different version.</p> <p>For YANG data models, version is the value of the most recent YANG 'revision' statement in the module or submodule, or the empty string if no 'revision' statement is present.</p>
format	identityref One of: rnc   rng   xsd   yang   yin	<p>The data modeling language the schema is written in (currently xsd, yang, yin, rng, or rnc). For YANG data models, 'yang' format</p>

		MUST be supported and 'yin' format MAY also be provided.
namespace	string	<p>The XML namespace defined by the data model.</p> <p>For YANG data models, this is the module's namespace. If the list entry describes a submodule, this field contains the namespace of the module to which the submodule belongs.</p>
location	union enumeration One of: NETCONF  string	<p>One or more locations from which the schema can be retrieved. This list SHOULD contain at least one entry per schema.</p> <p>A schema entry may be located on a remote file system (e.g., reference to file system for ftp retrieval) or retrieved directly from a server supporting the &lt;get-schema&gt; operation (denoted by the value 'NETCONF').</p>

show netconf-state sessions

**Output Parameters:**

Parameter	Type	Description
<a href="#">session</a>	Not applicable	Reference to subtree parameters

show netconf-state sessions session <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1..max]	Unique identifier for the session. This value is the NETCONF session identifier, as defined in RFC 4741.

**Output Parameters:**

Parameter	Type	Description
-----------	------	-------------

session-id	uint32 [1..max]	Unique identifier for the session. This value is the NETCONF session identifier, as defined in RFC 4741.
login-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Time at the server at which the session was established.
transport	identityref One of: cli-console   cli-ssh   cli-tcp   netconf-beep   netconf-soap-over-beep   netconf-soap-over-https   netconf-ssh   netconf-tcp   netconf-tls   rest-http   rest-https   snmp-udp   webui-http   webui-https	Identifies the transport for each session, e.g., 'netconf-ssh', 'netconf-soap', etc.
username	string	The username is the client identity that was authenticated by the NETCONF transport protocol. The algorithm used to derive the username is NETCONF transport protocol specific and in addition specific to the authentication mechanism used by the NETCONF transport protocol.
in-bad-rpcs	uint32	Number of messages received when an <rpc> message was expected, that were not correct <rpc> messages. This includes XML parse errors and errors on the rpc layer.
in-rpcs	uint32	Number of correct <rpc> messages received.
out-notifications	uint32	Number of <notification> messages sent.
out-rpc-errors	uint32	Number of <rpc-reply> messages sent that contained an <rpc-error> element.
source-host	union union string {pattern = (([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])\.){3}([0-9] [1-9][0-9] 1[0-9][0-9] 2[0-4][0-9] 25[0-5])(%\p{N}\p{L})+)?}  string  string {length = 1..253}	Host identifier of the NETCONF client. The value returned is implementation specific (e.g., hostname, IPv4 address, IPv6 address)
<a href="#">transaction</a>	Not applicable	Reference to subtree parameters

show netconf-state sessions session <A> transaction <B>

**Input Parameters:**

Parameter	Type	Description
A	uint32 [1..max]	Unique identifier for the session. This value is the NETCONF session identifier, as defined in RFC 4741.
B	uint32	The transaction id of a transaction.

**Output Parameters:**

Parameter	Type	Description
id	uint32	The transaction id of a transaction.
config-mode	enumeration One of: exclusive   private   shared	The config mode of transaction.
db	enumeration One of: none   running   candidate   startup   operational	The database of transaction.
mode	enumeration One of: read   read_write	The mode of transaction.

show netconf-state statistics

**Output Parameters:**

Parameter	Type	Description
dropped-sessions	uint32	Number of sessions that were abnormally terminated, e.g., due to idle timeout or transport close. This counter is not incremented when a session is properly closed by a <close-session> operation, or killed by a <kill-session> operation.
in-bad-hellos	uint32	Number of sessions silently dropped because an invalid <hello> message was received. This includes <hello> messages with a 'session-id' attribute, bad namespace, and bad capability declarations.

in-bad-rpcs	uint32	Number of messages received when an <rpc> message was expected, that were not correct <rpc> messages. This includes XML parse errors and errors on the rpc layer.
in-rpcs	uint32	Number of correct <rpc> messages received.
in-sessions	uint32	Number of sessions started. This counter is incremented when a <hello> message with a <session-id> is sent.  'in-sessions' - 'in-bad-hellos' = 'number of correctly started netconf sessions'
netconf-start-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+ -]\d{2}:\d{2})}	Date and time at which the management subsystem was started.
out-notifications	uint32	Number of <notification> messages sent.
out-rpc-errors	uint32	Number of <rpc-reply> messages sent that contained an <rpc-error> element.

show netconf-state streams

#### Output Parameters:

Parameter	Type	Description
<a href="#">stream</a>	Not applicable	Reference to subtree parameters

show netconf-state streams stream <A>

#### Input Parameters:

Parameter	Type	Description
A	string	Description not available.

#### Output Parameters:

Parameter	Type	Description
name	string	Description not available.
description	string	Description not available.

replay-log-creation-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Description not available.
replay-support	boolean	Description not available.
replay-log-aged-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Description not available.
<a href="#">subscriber</a>	Not applicable	Reference to subtree parameters

show netconf-state streams stream <A> subscriber <B>

#### Input Parameters:

Parameter	Type	Description
A	string	Description not available.
B	uint32	Description not available.

#### Output Parameters:

Parameter	Type	Description
session-id	uint32	Description not available.
start-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The time the session started to subscribe to this stream.
stop-time	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Contains the stop time the session used to subscribe to this stream. If no stop time was given, this leaf is not present.

## 3.18 ntp-state commands

### 3.18.1 Command Tree

```
-- show ntp-state
  |-- server <A>
    |-- name
    |-- address
    |-- ntpserver-type
```

### 3.18.2 Commands

show ntp-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">server</a>	Not applicable	Reference to subtree parameters

show ntp-state server <A>

#### Input Parameters:

Parameter	Type	Description
A	string	An arbitrary name for the NTP server.

#### Output Parameters:

Parameter	Type	Description
name	string	An arbitrary name for the NTP server.
address	union union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)}{3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}	The IP address (IPv4 or IPv6) or the domain name of the NTP server.
	string	

---

	string {length = 1..253}	
ntpserver-type	enumeration One of: static   dynamic	Identifies where the NTP server address comes from.

## 3.19 rollback-files commands

### 3.19.1 Command Tree

```
|-- show rollback-files
    |-- file <A>
        |-- id
        |-- comment
        |-- creator
        |-- date
        |-- fixed-number
        |-- label
        |-- name
        |-- via
```

### 3.19.2 Commands

show rollback-files

#### Output Parameters:

Parameter	Type	Description
<a href="#">file</a>	Not applicable	Reference to subtree parameters

show rollback-files file <A>

#### Input Parameters:

Parameter	Type	Description
A	uint32	Identifier for a rollback file.

#### Output Parameters:

Parameter	Type	Description
id	uint32	Identifier for a rollback file.
comment	string	A comment.
creator	string	The user which caused the rollback file to be created.

---

date	string	Date for the creation of the rollback file.
fixed-number	uint64	The number of this rollback files. This number doesn't change and can be used as input to the get- and apply- actions defined in this module.
label	string	A label.
name	string	Filename of the rollback file.
via	string	What interface was used when the rollback file was created.

## 3.20 routing-state commands

### 3.20.1 Command Tree

```
|-- show routing-state
  |-- control-plane-protocols
    |-- control-plane-protocol <A><B>
      |-- type
      |-- name
  |-- ribs
    |-- rib <A>
      |-- name
      |-- address-family
      |-- default-rib
      |-- routes
        |-- route
          |-- next-hop
            |-- v4ur:next-hop-address
            |-- v6ur:next-hop-address
          |-- v4ur:destination-prefix
          |-- v6ur:destination-prefix
```

### 3.20.2 Commands

show routing-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">control-plane-protocols</a>	Not applicable	Reference to subtree parameters
<a href="#">ribs</a>	Not applicable	Reference to subtree parameters

show routing-state control-plane-protocols

#### Output Parameters:

Parameter	Type	Description
type	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol.

name	string	<p>The name of the control-plane protocol instance.</p> <p>For system-controlled instances this name is persistent, i.e., it SHOULD NOT change across reboots.</p>
------	--------	--

show routing-state control-plane-protocols control-plane-protocol <A><B>

**Input Parameters:**

Parameter	Type	Description
A	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol.
B	string	<p>The name of the control-plane protocol instance.</p> <p>For system-controlled instances this name is persistent, i.e., it SHOULD NOT change across reboots.</p>

**Output Parameters:**

Parameter	Type	Description
type	identityref One of: direct   routing-protocol   static	Type of the control-plane protocol.
name	string	<p>The name of the control-plane protocol instance.</p> <p>For system-controlled instances this name is persistent, i.e., it SHOULD NOT change across reboots.</p>

show routing-state ribs

**Output Parameters:**

Parameter	Type	Description
<a href="#">rib</a>	Not applicable	Reference to subtree parameters

show routing-state ribs rib <A>

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the RIB.

**Output Parameters:**

Parameter	Type	Description
name	string	The name of the RIB.
address-family	identityref One of: ipv4   ipv4-unicast   ipv6   ipv6-unicast	Address family.
default-rib	boolean  default 'true'	This flag has the value of 'true' if and only if the RIB is the default RIB for the given address family.  By default, control-plane protocols place their routes in the default RIBs.
<a href="#">routes</a>	Not applicable	Reference to subtree parameters

show routing-state ribs rib <A> routes

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the RIB.

**Output Parameters:**

Parameter	Type	Description
<a href="#">route</a>	Not applicable	Reference to subtree parameters

show routing-state ribs rib <A> routes route

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string	The name of the RIB.
---	--------	----------------------

**Output Parameters:**

Parameter	Type	Description
<a href="#">next-hop</a>	Not applicable	Reference to subtree parameters
destination-prefix	string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)}{3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])/(([0-9]) ([1-2][0-9]) (3[0-2]))}	IPv4 destination prefix.
destination-prefix	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:{0,5}((([0-9a-fA-F]{0,4}):)?(:[0-9a-fA-F]{0,4}))) (((25[0-5]2[0-4][0-9][01]?[0-9]?[0-9])\.)}{3}(25[0-5]2[0-4][0-9][01]?[0-9]?[0-9])))/((([0-9]) ([0-9]{2}) (1[0-1][0-9]) (12[0-8]))}	IPv6 destination prefix.

show routing-state ribs rib <A> routes route next-hop

**Input Parameters:**

Parameter	Type	Description
A	string	The name of the RIB.

**Output Parameters:**

Parameter	Type	Description
next-hop-address	string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.)}{3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}	IPv4 address of the next hop.
next-hop-address	string {pattern = ((:[0-9a-fA-F]{0,4}):)([0-9a-fA-F]{0,4}:{0,5}((([0-9a-fA-F]{0,4}):)?(:[0-9a-fA-F]{0,4}))) (((25[0-5]2[0-4][0-9][01]?[0-9]?[0-9])\.)}{3}(25[0-5]2[0-4][0-9][01]?[0-9]?[0-9])))/((([0-9]) ([0-9]{2}) (1[0-1][0-9]) (12[0-8]))(%\p{N}\p{L}+)?}	IPv6 address of the next hop.

## 3.21 supported-algorithms commands

### 3.21.1 Command Tree

```
-- show supported-algorithms
```

```
  |-- supported-algorithm
```

### 3.21.2 Commands

show supported-algorithms

#### Output Parameters:

Parameter	Type	Description
supported-algorithm	identityref One of: tls-aes-128-ccm-8-sha256   tls-aes-128-ccm-sha256   tls-aes-128-gcm-sha256   tls-aes-256-gcm-sha384   tls-chacha20-poly1305-sha256   tls-dh-anon-export-with-des40-cbc-sha   tls-dh-anon-export-with-rc4-40-md5   tls-dh-anon-with-3des-edc-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha   tls-dh-anon-with-aes-128-cbc-sha256   tls-dh-anon-with-aes-128-gcm-sha256   tls-dh-anon-with-aes-256-cbc-sha   tls-dh-anon-with-aes-256-cbc-sha256   tls-dh-anon-with-aes-256-gcm-sha384   tls-dh-anon-with-aria-128-cbc-sha256   tls-dh-anon-with-aria-128-gcm-sha256   tls-dh-anon-with-aria-256-cbc-sha384   tls-dh-anon-with-aria-256-gcm-sha384   tls-dh-anon-with-camellia-128-cbc-sha   tls-dh-anon-with-camellia-128-cbc-sha256   tls-dh-anon-with-camellia-128-gcm-sha256   tls-dh-anon-with-camellia-256-cbc-sha   tls-dh-anon-with-camellia-256-cbc-sha256   tls-dh-anon-with-camellia-256-gcm-sha384   tls-dh-anon-with-des-cbc-sha   tls-dh-anon-with-rc4-128-md5   tls-dh-anon-with-seed-cbc-sha   tls-dh-dss-export-with-des40-cbc-sha   tls-dh-dss-with-3des-edc-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha   tls-dh-dss-with-aes-128-cbc-sha256   tls-dh-dss-with-aes-128-gcm-sha256   tls-dh-dss-with-aes-256-cbc-sha   tls-dh-dss-with-aes-256-cbc-sha256   tls-dh-dss-with-aes-256-gcm-sha384   tls-dh-dss-with-aria-128-cbc-	A cipher suite algorithm supported by the server.

```

sha256 | tls-dh-dss-with-aria-128-gcm-
sha256 | tls-dh-dss-with-aria-256-cbc-
sha384 | tls-dh-dss-with-aria-256-gcm-
sha384 | tls-dh-dss-with-camellia-128-cbc-
sha | tls-dh-dss-with-camellia-128-cbc-
sha256 | tls-dh-dss-with-camellia-128-
gcm-sha256 | tls-dh-dss-with-camellia-256-
cbc-sha | tls-dh-dss-with-camellia-256-
cbc-sha256 | tls-dh-dss-with-camellia-256-
gcm-sha384 | tls-dh-dss-with-des-cbc-sha
| tls-dh-dss-with-seed-cbc-sha | tls-dh-rsa-
export-with-des40-cbc-sha | tls-dh-rsa-
with-3des-ede-cbc-sha | tls-dh-rsa-with-
aes-128-cbc-sha | tls-dh-rsa-with-aes-128-
cbc-sha256 | tls-dh-rsa-with-aes-128-gcm-
sha256 | tls-dh-rsa-with-aes-256-cbc-sha
| tls-dh-rsa-with-aes-256-cbc-sha256 | tls-
dh-rsa-with-aes-256-gcm-sha384 | tls-dh-
rsa-with-aria-128-cbc-sha256 | tls-dh-rsa-
with-aria-128-gcm-sha256 | tls-dh-rsa-
with-aria-256-cbc-sha384 | tls-dh-rsa-with-
aria-256-gcm-sha384 | tls-dh-rsa-with-
camellia-128-cbc-sha | tls-dh-rsa-with-
camellia-128-cbc-sha256 | tls-dh-rsa-with-
camellia-128-gcm-sha256 | tls-dh-rsa-with-
camellia-256-cbc-sha | tls-dh-rsa-with-
camellia-256-cbc-sha256 | tls-dh-rsa-with-
camellia-256-gcm-sha384 | tls-dh-rsa-with-
des-cbc-sha | tls-dh-rsa-with-seed-cbc-sha
| tls-dhe-dss-export-with-des40-cbc-sha
| tls-dhe-dss-with-3des-ede-cbc-sha | tls-
dhe-dss-with-aes-128-cbc-sha | tls-dhe-dss-
with-aes-128-cbc-sha256 | tls-dhe-dss-with-
aes-128-gcm-sha256 | tls-dhe-dss-with-
aes-256-cbc-sha | tls-dhe-dss-with-aes-256-
cbc-sha256 | tls-dhe-dss-with-aes-256-gcm-
sha384 | tls-dhe-dss-with-aria-128-cbc-
sha256 | tls-dhe-dss-with-aria-128-gcm-
sha256 | tls-dhe-dss-with-aria-256-cbc-
sha384 | tls-dhe-dss-with-aria-256-gcm-
sha384 | tls-dhe-dss-with-camellia-128-cbc-
sha | tls-dhe-dss-with-camellia-128-cbc-
sha256 | tls-dhe-dss-with-camellia-128-gcm-
sha256 | tls-dhe-dss-with-camellia-256-cbc-
sha | tls-dhe-dss-with-camellia-256-cbc-
sha256 | tls-dhe-dss-with-camellia-256-gcm-
sha384 | tls-dhe-dss-with-des-cbc-sha | tls-
dhe-dss-with-seed-cbc-sha | tls-dhe-psk-
with-3des-ede-cbc-sha | tls-dhe-psk-with-
aes-128-cbc-sha | tls-dhe-psk-with-aes-128-
cbc-sha256 | tls-dhe-psk-with-aes-128-ccm
| tls-dhe-psk-with-aes-128-gcm-sha256 | tls-

```

dhe-psk-with-aes-256-cbc-sha | tls-dhe-psk-with-aes-256-cbc-sha384 | tls-dhe-psk-with-aes-256-ccm | tls-dhe-psk-with-aes-256-gcm-sha384 | tls-dhe-psk-with-aria-128-cbc-sha256 | tls-dhe-psk-with-aria-128-gcm-sha256 | tls-dhe-psk-with-aria-256-cbc-sha384 | tls-dhe-psk-with-aria-256-gcm-sha384 | tls-dhe-psk-with-camellia-128-cbc-sha256 | tls-dhe-psk-with-camellia-128-gcm-sha256 | tls-dhe-psk-with-camellia-256-cbc-sha384 | tls-dhe-psk-with-camellia-256-gcm-sha384 | tls-dhe-psk-with-chacha20-poly1305-sha256 | tls-dhe-psk-with-null-sha | tls-dhe-psk-with-null-sha256 | tls-dhe-psk-with-null-sha384 | tls-dhe-psk-with-rc4-128-sha | tls-dhe-rsa-export-with-des40-cbc-sha | tls-dhe-rsa-with-3des-ede-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha | tls-dhe-rsa-with-aes-128-cbc-sha256 | tls-dhe-rsa-with-aes-128-ccm | tls-dhe-rsa-with-aes-128-ccm-8 | tls-dhe-rsa-with-aes-128-gcm-sha256 | tls-dhe-rsa-with-aes-256-cbc-sha | tls-dhe-rsa-with-aes-256-cbc-sha256 | tls-dhe-rsa-with-aes-256-ccm | tls-dhe-rsa-with-aes-256-ccm-8 | tls-dhe-rsa-with-aes-256-gcm-sha384 | tls-dhe-rsa-with-aria-128-cbc-sha256 | tls-dhe-rsa-with-aria-128-gcm-sha256 | tls-dhe-rsa-with-aria-256-cbc-sha384 | tls-dhe-rsa-with-aria-256-gcm-sha384 | tls-dhe-rsa-with-camellia-128-cbc-sha | tls-dhe-rsa-with-camellia-128-cbc-sha256 | tls-dhe-rsa-with-camellia-128-gcm-sha256 | tls-dhe-rsa-with-camellia-256-cbc-sha | tls-dhe-rsa-with-camellia-256-cbc-sha256 | tls-dhe-rsa-with-camellia-256-gcm-sha384 | tls-dhe-rsa-with-chacha20-poly1305-sha256 | tls-dhe-rsa-with-des-cbc-sha | tls-dhe-rsa-with-seed-cbc-sha | tls-eccpwd-with-aes-128-ccm-sha256 | tls-eccpwd-with-aes-128-gcm-sha256 | tls-eccpwd-with-aes-256-ccm-sha384 | tls-eccpwd-with-aes-256-gcm-sha384 | tls-ecdh-anon-with-3des-ede-cbc-sha | tls-ecdh-anon-with-aes-128-cbc-sha | tls-ecdh-anon-with-aes-256-cbc-sha | tls-ecdh-anon-with-null-sha | tls-ecdh-anon-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-ede-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-

ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-rsa-with-3des-edc-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha | tls-ecdh-rsa-with-aes-128-cbc-sha256 | tls-ecdh-rsa-with-aes-128-gcm-sha256 | tls-ecdh-rsa-with-aes-256-cbc-sha | tls-ecdh-rsa-with-aes-256-cbc-sha384 | tls-ecdh-rsa-with-aes-256-gcm-sha384 | tls-ecdh-rsa-with-aria-128-cbc-sha256 | tls-ecdh-rsa-with-aria-128-gcm-sha256 | tls-ecdh-rsa-with-aria-256-cbc-sha384 | tls-ecdh-rsa-with-aria-256-gcm-sha384 | tls-ecdh-rsa-with-camellia-128-cbc-sha256 | tls-ecdh-rsa-with-camellia-128-gcm-sha256 | tls-ecdh-rsa-with-camellia-256-cbc-sha384 | tls-ecdh-rsa-with-camellia-256-gcm-sha384 | tls-ecdh-rsa-with-null-sha | tls-ecdh-rsa-with-rc4-128-sha | tls-ecdh-ecdsa-with-3des-edc-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha | tls-ecdh-ecdsa-with-aes-128-cbc-sha256 | tls-ecdh-ecdsa-with-aes-128-ccm | tls-ecdh-ecdsa-with-aes-128-ccm-8 | tls-ecdh-ecdsa-with-aes-128-gcm-sha256 | tls-ecdh-ecdsa-with-aes-256-cbc-sha | tls-ecdh-ecdsa-with-aes-256-cbc-sha384 | tls-ecdh-ecdsa-with-aes-256-ccm | tls-ecdh-ecdsa-with-aes-256-ccm-8 | tls-ecdh-ecdsa-with-aes-256-gcm-sha384 | tls-ecdh-ecdsa-with-aria-128-cbc-sha256 | tls-ecdh-ecdsa-with-aria-128-gcm-sha256 | tls-ecdh-ecdsa-with-aria-256-cbc-sha384 | tls-ecdh-ecdsa-with-aria-256-gcm-sha384 | tls-ecdh-ecdsa-with-camellia-128-cbc-sha256 | tls-ecdh-ecdsa-with-camellia-128-gcm-sha256 | tls-ecdh-ecdsa-with-camellia-256-cbc-sha384 | tls-ecdh-ecdsa-with-camellia-256-gcm-sha384 | tls-ecdh-ecdsa-with-chacha20-poly1305-sha256 | tls-ecdh-ecdsa-with-null-sha | tls-ecdh-ecdsa-with-rc4-128-sha | tls-ecdh-psk-with-3des-edc-cbc-sha | tls-ecdh-psk-with-aes-128-cbc-sha | tls-ecdh-psk-with-

aes-128-cbc-sha256 | tls-ecdhe-psk-with-aes-128-ccm-8-sha256 | tls-ecdhe-psk-with-aes-128-ccm-sha256 | tls-ecdhe-psk-with-aes-128-gcm-sha256 | tls-ecdhe-psk-with-aes-256-cbc-sha | tls-ecdhe-psk-with-aes-256-cbc-sha384 | tls-ecdhe-psk-with-aes-256-gcm-sha384 | tls-ecdhe-psk-with-aria-128-cbc-sha256 | tls-ecdhe-psk-with-aria-256-cbc-sha384 | tls-ecdhe-psk-with-camellia-128-cbc-sha256 | tls-ecdhe-psk-with-camellia-256-cbc-sha384 | tls-ecdhe-psk-with-chacha20-poly1305-sha256 | tls-ecdhe-psk-with-null-sha | tls-ecdhe-psk-with-null-sha256 | tls-ecdhe-psk-with-null-sha384 | tls-ecdhe-psk-with-rc4-128-sha | tls-ecdhe-rsa-with-3des-edc-cbc-sha | tls-ecdhe-rsa-with-aes-128-cbc-sha | tls-ecdhe-rsa-with-aes-128-cbc-sha256 | tls-ecdhe-rsa-with-aes-128-gcm-sha256 | tls-ecdhe-rsa-with-aes-256-cbc-sha | tls-ecdhe-rsa-with-aes-256-cbc-sha384 | tls-ecdhe-rsa-with-aes-256-gcm-sha384 | tls-ecdhe-rsa-with-aria-128-cbc-sha256 | tls-ecdhe-rsa-with-aria-128-gcm-sha256 | tls-ecdhe-rsa-with-aria-256-cbc-sha384 | tls-ecdhe-rsa-with-aria-256-gcm-sha384 | tls-ecdhe-rsa-with-camellia-128-cbc-sha256 | tls-ecdhe-rsa-with-camellia-128-gcm-sha256 | tls-ecdhe-rsa-with-camellia-256-cbc-sha384 | tls-ecdhe-rsa-with-camellia-256-gcm-sha384 | tls-ecdhe-rsa-with-chacha20-poly1305-sha256 | tls-ecdhe-rsa-with-null-sha | tls-ecdhe-rsa-with-rc4-128-sha | tls-empty-renegotiation-info-scsv | tls-fallback-scsv | tls-gostr341112-256-with-28147-cnt-imit | tls-gostr341112-256-with-kuznyechik-ctr-omac | tls-gostr341112-256-with-magma-ctr-omac | tls-krb5-export-with-des-cbc-40-md5 | tls-krb5-export-with-des-cbc-40-sha | tls-krb5-export-with-rc2-cbc-40-md5 | tls-krb5-export-with-rc2-cbc-40-sha | tls-krb5-export-with-rc4-40-md5 | tls-krb5-export-with-rc4-40-sha | tls-krb5-with-3des-edc-cbc-md5 | tls-krb5-with-3des-edc-cbc-sha | tls-krb5-with-des-cbc-md5 | tls-krb5-with-des-cbc-sha | tls-krb5-with-idea-cbc-md5 | tls-krb5-with-idea-cbc-sha | tls-krb5-with-rc4-128-md5 | tls-krb5-with-rc4-128-sha | tls-null-with-null-null | tls-psk-dhe-with-aes-128-ccm-8 | tls-psk-dhe-with-aes-256-ccm-8 | tls-psk-with-3des-edc-cbc-sha | tls-psk-with-aes-128-cbc-sha | tls-psk-with-

```

aes-128-cbc-sha256 | tls-psk-with-aes-128-
ccm | tls-psk-with-aes-128-ccm-8 | tls-psk-
with-aes-128-gcm-sha256 | tls-psk-with-
aes-256-cbc-sha | tls-psk-with-aes-256-
cbc-sha384 | tls-psk-with-aes-256-ccm |
tls-psk-with-aes-256-ccm-8 | tls-psk-with-
aes-256-gcm-sha384 | tls-psk-with-aria-128-
cbc-sha256 | tls-psk-with-aria-128-gcm-
sha256 | tls-psk-with-aria-256-cbc-sha384
| tls-psk-with-aria-256-gcm-sha384 | tls-
psk-with-camellia-128-cbc-sha256 | tls-
psk-with-camellia-128-gcm-sha256 | tls-
psk-with-camellia-256-cbc-sha384 | tls-psk-
with-camellia-256-gcm-sha384 | tls-psk-
with-chacha20-poly1305-sha256 | tls-psk-
with-null-sha | tls-psk-with-null-sha256 | tls-
psk-with-null-sha384 | tls-psk-with-rc4-128-
sha | tls-rsa-export-with-des40-cbc-sha |
tls-rsa-export-with-rc2-cbc-40-md5 | tls-
rsa-export-with-rc4-40-md5 | tls-rsa-psk-
with-3des-ede-cbc-sha | tls-rsa-psk-with-
aes-128-cbc-sha | tls-rsa-psk-with-aes-128-
cbc-sha256 | tls-rsa-psk-with-aes-128-gcm-
sha256 | tls-rsa-psk-with-aes-256-cbc-sha
| tls-rsa-psk-with-aes-256-cbc-sha384 | tls-
rsa-psk-with-aes-256-gcm-sha384 | tls-rsa-
psk-with-aria-128-cbc-sha256 | tls-rsa-psk-
with-aria-128-gcm-sha256 | tls-rsa-psk-
with-aria-256-cbc-sha384 | tls-rsa-psk-with-
aria-256-gcm-sha384 | tls-rsa-psk-with-
camellia-128-cbc-sha256 | tls-rsa-psk-with-
camellia-128-gcm-sha256 | tls-rsa-psk-with-
camellia-256-cbc-sha384 | tls-rsa-psk-with-
camellia-256-gcm-sha384 | tls-rsa-psk-with-
chacha20-poly1305-sha256 | tls-rsa-psk-
with-null-sha | tls-rsa-psk-with-null-sha256
| tls-rsa-psk-with-null-sha384 | tls-rsa-psk-
with-rc4-128-sha | tls-rsa-with-3des-ede-
cbc-sha | tls-rsa-with-aes-128-cbc-sha |
tls-rsa-with-aes-128-cbc-sha256 | tls-rsa-
with-aes-128-ccm | tls-rsa-with-aes-128-
ccm-8 | tls-rsa-with-aes-128-gcm-sha256 |
tls-rsa-with-aes-256-cbc-sha | tls-rsa-with-
aes-256-cbc-sha256 | tls-rsa-with-aes-256-
ccm | tls-rsa-with-aes-256-ccm-8 | tls-rsa-
with-aes-256-gcm-sha384 | tls-rsa-with-
aria-128-cbc-sha256 | tls-rsa-with-aria-128-
gcm-sha256 | tls-rsa-with-aria-256-cbc-
sha384 | tls-rsa-with-aria-256-gcm-sha384
| tls-rsa-with-camellia-128-cbc-sha | tls-
rsa-with-camellia-128-cbc-sha256 | tls-rsa-
with-camellia-128-gcm-sha256 | tls-rsa-

```

<p>with-camellia-256-cbc-sha   tls-rsa-with-camellia-256-cbc-sha256   tls-rsa-with-camellia-256-gcm-sha384   tls-rsa-with-des-cbc-sha   tls-rsa-with-idea-cbc-sha   tls-rsa-with-null-md5   tls-rsa-with-null-sha   tls-rsa-with-null-sha256   tls-rsa-with-rc4-128-md5   tls-rsa-with-rc4-128-sha   tls-rsa-with-seed-cbc-sha   tls-sha256-sha256   tls-sha384-sha384   tls-sm4-ccm-sm3   tls-sm4-gcm-sm3   tls-srp-sha-dss-with-3des-edc-cbc-sha   tls-srp-sha-dss-with-aes-128-cbc-sha   tls-srp-sha-dss-with-aes-256-cbc-sha   tls-srp-sha-rsa-with-3des-edc-cbc-sha   tls-srp-sha-rsa-with-aes-128-cbc-sha   tls-srp-sha-rsa-with-aes-256-cbc-sha   tls-srp-sha-with-3des-edc-cbc-sha   tls-srp-sha-with-aes-128-cbc-sha   tls-srp-sha-with-aes-256-cbc-sha</p>
--

## 3.22 system-security commands

### 3.22.1 Command Tree

```

|-- show system-security lockdown
    |-- global-lockout-reason
    |-- global-lockout-type
    |-- global-remaining-lockout-duration
    |-- ip-addr <A>
        |-- address
        |-- remaining-lockout-duration
    |-- user <A>
        |-- name
        |-- remaining-lockout-duration
|-- show system-security server-identity host-key public-key local-definition algorithm
|-- show system-security server-identity host-key public-key local-definition public-key

```

### 3.22.2 Commands

show system-security lockdown

#### Output Parameters:

Parameter	Type	Description
global-lockout-reason	string	The reason for system entering global lockdown.
global-lockout-type	boolean default 'false'	Defines the capability of the system to be set in global lock out.
global-remaining-lockout-duration	uint32 default '0'	The elapsed time, until the global lockdown will be ceased.
<a href="#">ip-addr</a>	Not applicable	Reference to subtree parameters
<a href="#">user</a>	Not applicable	Reference to subtree parameters

show system-security lockdown ip-addr <A>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

A	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	Ip address under lockout.
---	---	---------------------------

**Output Parameters:**

Parameter	Type	Description
address	union string {pattern = (([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])\.){3}([0-9][1-9][0-9]1[0-9][0-9]2[0-4][0-9]25[0-5])(%\p{N}\p{L}+)?}  string	Ip address under lockout.
remaining-lockout-duration	uint32  default '0'	The elapsed time, until ip lockout will be ceased.

show system-security lockout user <A>

**Input Parameters:**

Parameter	Type	Description
A	string	User name under lockout.

**Output Parameters:**

Parameter	Type	Description
name	string	User name under lockout.
remaining-lockout-duration	uint32  default '0'	The elapsed time, until user lockout will be ceased.

show system-security server-identity host-key public-key local-definition algorithm

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
algorithm	enumeration One of: rsa1024   rsa2048   dsa1024	Identifies the key's algorithm. More specifically, this leaf specifies how the 'public-key' binary leaf is encoded.

show system-security server-identity host-key public-key local-definition public-key

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
public-key	binary	A binary that contains the value of the public key. The interpretation of the content is defined by the key algorithm. For example, a DSA key is an integer, an RSA key is represented as RSAPublicKey as defined in RFC 8017, and an Elliptic Curve Cryptography (ECC) key is represented using the 'publicKey' described in RFC 5915.

## 3.23 system-state commands

### 3.23.1 Command Tree

```
|-- show system-state
|   |-- clock
|       |-- boot-datetime
|       |-- current-datetime
|       |-- sys-up-time
|   |-- ntp-state
|       |-- peer <A>
|           |-- remote
|           |-- auth
|           |-- conf
|           |-- delay
|           |-- dispersion
|           |-- flash
|           |-- jitter
|           |-- last-event
|           |-- offset
|           |-- poll
|           |-- reach
|           |-- refid
|           |-- root-delay
|           |-- root-dispersion
|           |-- select
|           |-- stratum
|           |-- type
|           |-- unreachable
|           |-- when
|   |-- platform
|       |-- duid
|       |-- metadata
|           |-- product
|           |-- software-version
|       |-- production-serial-number
|       |-- software-release
|   |-- radius-statistics
|       |-- accounting-server <A>
|           |-- name
|           |-- accounting-request-tx
|           |-- accounting-response-rx
|           |-- accounting-retransmission-tx
|           |-- acct-state
|           |-- bad-authenticator-rx
|           |-- invalid-accounting-response-rx
|           |-- packet-discards-rx
|           |-- pending-request-rx
|           |-- server-reply-time
|           |-- timeouts
|           |-- unknown-packet-rx
|       |-- authentication-server <A>
```

```

|-- name
|-- access-accept-rx
|-- access-challenge-rx
|-- access-reject-rx
|-- access-request-tx
|-- access-retransmission-tx
|-- auth-state
|-- bad-authenticator-rx
|-- invalid-access-response-rx
|-- packet-discards-rx
|-- pending-request-rx
|-- server-reply-time
|-- timeouts
|-- unknown-packet-rx
|-- system-ip
    |-- ipv4
    |-- ipv6

```

### 3.23.2 Commands

show system-state

#### Output Parameters:

Parameter	Type	Description
<a href="#">clock</a>	Not applicable	Reference to subtree parameters
<a href="#">ntp-state</a>	Not applicable	Reference to subtree parameters
<a href="#">platform</a>	Not applicable	Reference to subtree parameters
<a href="#">radius-statistics</a>	Not applicable	Reference to subtree parameters
<a href="#">system-ip</a>	Not applicable	Reference to subtree parameters

show system-state clock

#### Output Parameters:

Parameter	Type	Description
boot-datetime	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The system date and time when the system last restarted.
current-datetime	string	The current system date and time.

	{pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	
sys-up-time	uint64	Unit: milliseconds  Indicates total measured milliseconds since start of system initialization

show system-state ntp-state

**Output Parameters:**

Parameter	Type	Description
<a href="#">peer</a>	Not applicable	Reference to subtree parameters

show system-state ntp-state peer <A>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1 .. 15}	host name (or IP address) of peer.

**Output Parameters:**

Parameter	Type	Description
remote	string {length = 1 .. 15}	host name (or IP address) of peer.
auth	enumeration One of: no   ok   bad	indicates the authentication status
conf	boolean	Indicates if this association is configured (true) or dynamically learned (false).
delay	decimal64	Unit: milliseconds  filter delay: Time in ms between query and response by the server.
dispersion	decimal64	Unit: milliseconds  filter dispersion.

flash	string {length = 1 .. 4}	flash code, shows errors found in the last packet received (pkt) and during protocol processing (peer)
jitter	decimal64	Unit: milliseconds  filter jitter: refers to the amount of drift since the last time a clock was queried. Offset in ms between system time and NTP in the last query
last-event	enumeration One of: unspecified   mobilize   demobilize   unreachable   reachable   restart   no-reply   rate-exceeded   access-denied   leap-armed   sys-peer   clock-alarm   bad-auth   popcorn   interleave-mode   interleave-error	displays the most recent event message
offset	decimal64	Unit: milliseconds  filter offset: Time in ms between system time and NTP time
poll	string {length = 1 .. 4}	poll interval
reach	string {length = 1 .. 3}	An 8-bit shift register that tracks packet generation and receipt. It is used to determine whether the server is reachable and the data are fresh.
refid	string {length = 1 .. 15}	association ID or kiss code.
root-delay	decimal64	Unit: milliseconds  total roundtrip delay to the primary reference clock
root-dispersion	decimal64	Unit: milliseconds  total root dispersion to the primary reference clock
select	enumeration One of: reject   falsetick   excess   outlier   candidate   backup   sys-peer   pps-peer	The Select Field (5-7) displays the current selection status.
stratum	uint8	stratum. 1 represent primary server. 2-15 represent secondary server.
type	enumeration One of:	unicast-manycast-client: unicast or manycast client, broadcast-multicast-client: broadcast or multicast client, local: local

	unicast-manycast-client   broadcast-multicast-client   local   symmetric   manycast-server   broadcast-server   multicast-server	(reference clock), symmetric: symmetric (peer), manycast-server: manycast server, broadcast-server: broadcast server, multicast-server: multicast server
unreach	uint32	unreachable counter, start from zero and increments when no NTP response received. Reset to 0 when NTP response received
when	string {length = 1 .. 4}	sec/min/hr since last received packet

show system-state platform

**Output Parameters:**

Parameter	Type	Description
duid	string	The DUID identifier of this host.  Actually this identifier is the host's IDevID as used in the X.509 certificate for Call-Home (BBF TR-301 Issue 2, Corrig. 1, sec. 16.5.1.3). However it has a one-to-one correspondence to the true DUID identifier.
<a href="#">metadata</a>	Not applicable	Reference to subtree parameters
production-serial-number	string	The device's serial number.
software-release	string	A vendor-specific identifier string representing the release in use.

show system-state platform metadata

**Output Parameters:**

Parameter	Type	Description
product	string	A vendor-specific identifier string representing the product in use.
software-version	string	A vendor-specific identifier string representing the software version in use.

show system-state radius-statistics

**Output Parameters:**

Parameter	Type	Description
<a href="#">accounting-server</a>	Not applicable	Reference to subtree parameters
<a href="#">authentication-server</a>	Not applicable	Reference to subtree parameters

show system-state radius-statistics accounting-server <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /sys:system/sys:radius/sys:server/ sys:name	Used for the reference of RADIUS accounting server.

**Output Parameters:**

Parameter	Type	Description
name	leafref : /sys:system/sys:radius/sys:server/ sys:name	Used for the reference of RADIUS accounting server.
accounting-request-tx	uint32	The number of RADIUS Accounting-Request packets sent to this server which does not include retransmissions.
accounting-response-rx	uint32	The number of RADIUS Accounting-Response packets received from this accounting server.
accounting-retransmission-tx	uint32	The number of RADIUS Accounting-Request packets retransmitted to this accounting server.
acct-state	enumeration One of: up   down   unknown	The operational state of the accounting server
bad-authenticator-rx	uint32	The number of RADIUS Accounting-Response packets containing invalid authenticators or signature received from this accounting server.

invalid-accounting-response-rx	uint32	The number of malformed RADIUS Accounting-Response packets received from this accounting server. Note that Malformed packets include packets with an invalid length. Bad authenticators and unknown types are not included as malformed accounting responses.
packet-discards-rx	uint32	The number of RADIUS packets of which are dropped by receiving from this accounting server.
pending-request-rx	uint32	The number of RADIUS Accounting-Request packets destined for this server have not received a response.
server-reply-time	uint32	Unit: milliseconds  The time interval between the most recent Accounting-Response and the Accounting-Request of RADIUS packets that matched from this accounting server.
timeouts	uint32	The number of timeouts for which the responses have not received from this accounting server.
unknown-packet-rx	uint32	The number of RADIUS packets of unknown type which are received from this accounting server.

show system-state radius-statistics authentication-server <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /sys:system/sys:radius/sys:server/ sys:name	Used for the reference of RADIUS authentication server.

**Output Parameters:**

Parameter	Type	Description
name	leafref : /sys:system/sys:radius/sys:server/ sys:name	Used for the reference of RADIUS authentication server.

access-accept-rx	uint32	The number of RADIUS Access-Accept packets received from this authentication server.
access-challenge-rx	uint32	The number of RADIUS Access-Challenge packets received from this authentication server.
access-reject-rx	uint32	The number of RADIUS Access-Reject packets received from this authentication server.
access-request-tx	uint32	The number of RADIUS Access-Request packets sent to this server which does not include retransmissions.
access-retransmission-tx	uint32	The number of RADIUS Access-Request packets retransmitted to this authentication server.
auth-state	enumeration One of: up   down   unknown	The operational state of the authentication server
bad-authenticator-rx	uint32	The number of RADIUS Access-Response packets containing invalid authenticators or signature received from this authentication server.
invalid-access-response-rx	uint32	The number of malformed RADIUS Access-Response packets received from this authentication server. Note that Malformed packets include packets with an invalid length. Bad authenticators and unknown types are not included as malformed access responses.
packet-discards-rx	uint32	The number of RADIUS packets of which are dropped by receiving from this authentication server.
pending-request-rx	uint32	The number of RADIUS Access-Request packets destined for this server have not received a response.
server-reply-time	uint32	Unit: milliseconds  The time interval between the most recent RADIUS Access-Reply or Access-Challenge and the Access-Request packets that matched from this authentication server.
timeouts	uint32	The number of timeouts for which the responses have not received from this authentication server.

---

unknown-packet-rx	uint32	The number of RADIUS packets of unknown type which are received from this authentication server.
-------------------	--------	--

show system-state system-ip

**Output Parameters:**

Parameter	Type	Description
ipv4	string {pattern = [0-9\..]*}  default '0.0.0.0'	System IPv4 Address. Default value is the 0.0.0.0
ipv6	string {pattern = [0-9a-fA-F:\..]*}  default '::'	System IPv6 Address. Default value is the ::

## 3.24 tls commands

### 3.24.1 Command Tree

|-- [show tls ca-certificates fingerprint](#)  
|-- [show tls certificate fingerprint](#)

### 3.24.2 Commands

show tls ca-certificates fingerprint

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
fingerprint	string {pattern = ([0-9a-fA-F]){2}(:([0-9a-fA-F]){2}) {0,254}}	SHA256 fingerprint of CA certificate. NB! First octet represents which hash algorithm is used, i.e. SHA256 (0x04), see x509c2n:tls-fingerprint.

show tls certificate fingerprint

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
fingerprint	string {pattern = ([0-9a-fA-F]){2}(:([0-9a-fA-F]){2}) {0,254}}	SHA256 fingerprint of certificate. NB! First octet represents which hash algorithm is used, i.e. SHA256 (0x04), see x509c2n:tls- fingerprint.

## 3.25 users commands

### 3.25.1 Command Tree

```
-- show users user login failed-login  
-- show users user login last-failed  
-- show users user login last-login  
-- show users user login last-password-changed
```

### 3.25.2 Commands

show users user login failed-login

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
failed-login	uint32	Counts the failed logins done by user.

show users user login last-failed

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

#### Output Parameters:

Parameter	Type	Description
last-failed	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Defines the last unsuccessful login attempt of a user.

show users user login last-login

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
last-login	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	Defines the last login time of a user.

show users user login last-password-changed

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

**Output Parameters:**

Parameter	Type	Description
last-password-changed	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The date and time where password was changed.

## 4. YANG Action Commands

### 4.1 certificate commands

#### 4.1.1 Command Tree

```

|-- certificate certificates-state
  |-- end-user-certificates
    |-- end-certs <A>
      |-- certificates
        |-- certificate <B>
          |-- show-cert format <C>
      |-- est-certificates
        |-- est-profiles <A>
          |-- ca-certificates
            |-- ca-certificate <B>
              |-- show-cert format <C>
          |-- end-user-certificate
            |-- show-cert format <B>
      |-- pinned-certificates
        |-- pinned-certificate <A>
          |-- certificates
            |-- certificate <B>
              |-- show-cert format <C>

```

#### 4.1.2 Commands

certificate certificates-state end-user-certificates end-certs <A> certificates certificate <B>

show-cert format <C>

##### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	feature that uses the certificate
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	certificate name
C	enumeration One of: raw   details	Certificate's format to be displayed.

certificate certificates-state est-certificates est-profiles <A> ca-certificates ca-certificate <B>  
show-cert format <C>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	profile name
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	certificate name
C	enumeration One of: raw   details	Certificate's format to be displayed.

certificate certificates-state est-certificates est-profiles <A> end-user-certificate show-cert  
format <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	profile name
B	enumeration One of: raw   details	Certificate's format to be displayed.

certificate certificates-state pinned-certificates pinned-certificate <A> certificates certificate <B>  
show-cert format <C>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

---

A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Name of trustore list
B	string {length = 1..64} {pattern = [!#&-Z^_~]*}	certificate name
C	enumeration One of: raw   details	Certificate's format to be displayed.

## 4.2 cfm commands

### 4.2.1 Command Tree

```

|-- cfm maintenance-group <A>
  |-- mep <B>
    |-- abort-loopback-series
    |-- transmit-linktrace ltm-target-mac-address <C> ltm-ttl <D> ltm-flags <E>
    |-- transmit-loopback-discover outer-tag-priority <C> inner-tag-priority <D>
    |-- transmit-loopback-series lbm-dest-ucast-mac-address <C> message-interval <D> vlan-tag-info outer-tag-
priority <E> inner-tag-priority <F> outer-tag-drop-eligible <G> inner-tag-drop-eligible <H> pattern-tlv data-tlv <I> tlv-
length <J> number-of-messages <K>

```

### 4.2.2 Commands

cfm maintenance-group <A> mep <B> abort-loopback-series

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance-association[ma-id = current()/../ma-id]/maintenance-association-mep/mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.

cfm maintenance-group <A> mep <B> transmit-linktrace ltm-target-mac-address <C> ltm-ttl <D> ltm-flags <E>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref	Integer that is unique among all the MEPs in the same Maintenance Association.

	: /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance-association[ma-id = current()/../ma-id]/maintenance-association-mep/mep-id	
C	string {pattern = [0-9a-fA-F][02468aAcCeE](-[0-9a-fA-F]{2}){5}}	The target MAC address field to be transmitted. A unicast MAC address.
D	uint8 [0..255]  default '64'	The LTM TTL field. Indicates the number of hops remaining to the LTM. Decrementd by 1 by each Linktrace Responder that handles the LTM. The value returned in the LTR is one less than that received in the LTM. If the LTM TTL is 0 or 1, the LTM is not forwarded to the next hop, and if 0, no LTR is generated.
E	bits  default "	The flags field for the LTMs transmitted by the MEP.

cfm maintenance-group <A> mep <B> transmit-loopback-discover outer-tag-priority <C> inner-tag-priority <D>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /cfm/maintenance-domain[md-id = current()/../md-id]/maintenance-association[ma-id = current()/../ma-id]/maintenance-association-mep/mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.
C	uint8 [0..7]  default '7'	Priority. 3 bit value to be used in the outer tag, if present in the transmitted frame.
D	uint8 [0..7]  default '7'	Priority. 3 bit value to be used in the inner tag, if present in the transmitted frame.

cfm maintenance-group <A> mep <B> transmit-loopback-series lbm-dest-ucast-mac-address <C> message-interval <D> vlan-tag-info outer-tag-priority <E> inner-tag-priority <F> outer-tag-drop-eligible <G> inner-tag-drop-eligible <H> pattern-tlv data-tlv <I> tlv-length <J> number-of-messages <K>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..255} {pattern = [0-9a-zA-Z\-\_]*}	The maintenance group provides a handle for the MD and MA combination.
B	leafref : /cfm/maintenance-domain[md-id = current()../../md-id]/maintenance-association[ma-id = current()../../ma-id]/maintenance-association-mep/mep-id	Integer that is unique among all the MEPs in the same Maintenance Association.
C	string {pattern = [0-9a-fA-F][02468aAcCeE](-[0-9a-fA-F]{2}){5}}	The destination unicast MAC Address field to be transmitted. A unicast destination MAC address.
D	uint16 [1..100]  default '10'	Unit: 0.1 seconds  Specifies the period between LBM transmissions in a LB session.
E	uint8 [0..7]  default '7'	Priority. 3 bit value to be used in the outer tag, if present in the transmitted frame.
F	uint8 [0..7]  default '7'	Priority. 3 bit value to be used in the inner tag, if present in the transmitted frame.
G	boolean  default 'false'	Specifies the value of the Drop Eligible Indicator (DEI) to be used in the outer tag, if present in the transmitted CFM packets. If true, a DEI bit value of 1 will be used indicating that the CFM packets are eligible to be dropped in the presence of congestion, if false a DEI bit value of 0 will be used.

H	boolean  default 'false'	Specifies the value of the Drop Eligible Indicator (DEI) to be used in the inner tag, if present in the transmitted CFM packets. If true, a DEI bit value of 1 will be used indicating that the CFM packets are eligible to be dropped in the presence of congestion, if false a DEI bit value of 0 will be used.
I	binary {length = 1..1480}	An arbitrary amount of data to be included in a Data TLV.
J	uint16 [1..1480]	When: (../data-tlv)  Indicates the total length of the TLV. The size of the TLV is adjusted accordingly to ensure frame is of the required total length. In the case of a Data TLV, if the Data TLV to be inserted into the frame is shorter than the configured data pattern, the data pattern will be truncated; if the size of the Data TLV is longer than the configured pattern, the pattern will be repeated to fill the TLV.
K	uint32 [1..5]  default '1'	The number of LBMs to be transmitted by the MEP.

## 4.3 est-client commands

### 4.3.1 Command Tree

```
|-- est-client est-certificate-profile <A>
|   |-- force-renew-ca-certificate
|   |-- force-renew-ee-certificate
```

### 4.3.2 Commands

est-client est-certificate-profile <A> force-renew-ca-certificate

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_-z ~]*}	Enrollment over Secured Transport certificate profile name

est-client est-certificate-profile <A> force-renew-ee-certificate

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..32} {pattern = [!#&-Z\^_-z ~]*}	Enrollment over Secured Transport certificate profile name

## 4.4 file-transfer commands

### 4.4.1 Command Tree

```

|-- file-transfer abort-file-transfer index <A>
|-- file-transfer download url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D>
    username <E> category category-type <F>
|-- file-transfer download url <A> password <B> username <C> category category-type <D>
|-- file-transfer download url <A> ssh-auth <B> username <C> category category-type <D>
|-- file-transfer remove-files category category-type <A> files <B>
|-- file-transfer techsupport abort-file-transfer index <A>
|-- file-transfer techsupport download url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-
    certificate-profile <D> username <E> category category-type <F>
|-- file-transfer techsupport download url <A> password <B> username <C> category category-type <D>
|-- file-transfer techsupport download url <A> ssh-auth <B> username <C> category category-type <D>
|-- file-transfer techsupport remove-files category category-type <A> files <B>
|-- file-transfer techsupport upload url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-
    profile <D> username <E> category category-type <F> directory name <G> files <H> compression-format <I>
|-- file-transfer techsupport upload url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-
    profile <D> username <E> category category-type <F> files <G> compression-format <H>
|-- file-transfer techsupport upload url <A> password <B> username <C> category category-type <D> directory name
    <E> files <F> compression-format <G>
|-- file-transfer techsupport upload url <A> password <B> username <C> category category-type <D> files <E>
    compression-format <F>
|-- file-transfer techsupport upload url <A> ssh-auth <B> username <C> category category-type <D> directory name
    <E> files <F> compression-format <G>
|-- file-transfer techsupport upload url <A> ssh-auth <B> username <C> category category-type <D> files <E>
    compression-format <F>
|-- file-transfer upload url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D>
    username <E> category category-type <F> files <G> compression-format <H>
|-- file-transfer upload url <A> password <B> username <C> category category-type <D> files <E> compression-
    format <F>
|-- file-transfer upload url <A> ssh-auth <B> username <C> category category-type <D> files <E> compression-
    format <F>

```

### 4.4.2 Commands

file-transfer abort-file-transfer index <A>

#### Input Parameters:

Parameter	Type	Description
A	uint8	Abort the file transfer with index reference.

file-transfer download url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D> username <E> category category-type <F>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it is an exact match to a configured pinned server certificate.
D	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules
E	string {length = 1..max}	When: ../url and not( (starts-with(../url, 'tftp')) or (starts-with(../url, 'http')) )  File transfer protocols credential username input.
F	identityref No identities are supported.	Category type.

file-transfer download url <A> password <B> username <C> category category-type <D>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	string	Password
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref No identities are supported.	Category type.

file-transfer download url <A> ssh-auth <B> username <C> category category-type <D>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-

		logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/' home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	Ssh client authentication using ssh key.
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref No identities are supported.	Category type.

file-transfer remove-files category category-type <A> files <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref No identities are supported.	Category type.
B	string	List of files.

file-transfer techsupport abort-file-transfer index <A>

**Input Parameters:**

Parameter	Type	Description
A	uint8	Abort the file transfer with index reference.

file-transfer techsupport download url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D> username <E> category category-type <F>

**Input Parameters:**

Parameter	Type	Description
-----------	------	-------------

A	string	URL of the remote server containing the information required to download the specified files included protocol, IP address, file-path, etc..
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it is an exact match to a configured pinned server certificate.
D	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules
E	string {length = 1..max}	When: ../url and not( (starts-with(../url, 'tftp')) or (starts-with(../url, 'http')) )  File transfer protocols credential username input.
F	identityref No identities are supported.	Category type.

file-transfer techsupport download url <A> password <B> username <C> category category-type <D>

#### Input Parameters:

Parameter	Type	Description
A	string	URL of the remote server containing the information required to download the specified files included protocol, IP address, file-path, etc..
B	string	Password
C	string {length = 1..max}	When: ../url and not( (starts-with(../url, 'tftp')) or (starts-with(../url, 'http')) )  File transfer protocols credential username input.
D	identityref	Category type.

	No identities are supported.	
--	------------------------------	--

file-transfer techsupport download url <A> ssh-auth <B> username <C> category category-type <D>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to download the specified files included protocol, IP address, file-path, etc..
B	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	Ssh client authentication using ssh key.
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref No identities are supported.	Category type.

file-transfer techsupport remove-files category category-type <A> files <B>

**Input Parameters:**

Parameter	Type	Description
A	identityref No identities are supported.	Category type.
B	string	List of files.

file-transfer techsupport upload url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D> username <E> category category-type <F> directory name <G> files <H> compression-format <I>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it is an exact match to a configured pinned server certificate.
D	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules
E	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'ftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
F	identityref One of: reboot-logs   syslog   trace-logs	Category type.
G	string	Directory name.
H	string	When: (derived-from-or-self (../category-type, 'trace-logs'))  List of files.
I	enumeration One of:	Compress files upon upload request based on the format specified.

	gzip   lzop   encrypted-gzip   encrypted-lzop	
	default 'gzip'	

file-transfer techsupport upload url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D> username <E> category category-type <F> files <G> compression-format <H>

#### Input Parameters:

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it is an exact match to a configured pinned server certificate.
D	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules
E	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )

		File transfer protocols credential username input.
F	identityref One of: reboot-logs   syslog   trace-logs	Category type.
G	string	List of files.
H	enumeration One of: gzip   lzop   encrypted-gzip   encrypted-lzop  default 'gzip'	Compress files upon upload request based on the format specified.

file-transfer techsupport upload url <A> password <B> username <C> category category-type <D> directory name <E> files <F> compression-format <G>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	string	Password
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref One of: reboot-logs   syslog   trace-logs	Category type.

E	string	Directory name.
F	string	When: (derived-from-or-self (../category-type, 'trace-logs'))  List of files.
G	enumeration One of: gzip   lzop   encrypted-gzip   encrypted-lzop  default 'gzip'	Compress files upon upload request based on the format specified.

file-transfer techsupport upload url <A> password <B> username <C> category category-type <D> files <E> compression-format <F>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	string	Password
C	string {length = 1..max}	When: ../url and not( (starts-with(../url, 'tftp')) or (starts-with(../url, 'http')) )  File transfer protocols credential username input.
D	identityref One of: reboot-logs   syslog   trace-logs	Category type.
E	string	List of files.

F	enumeration One of: gzip   lzop   encrypted-gzip   encrypted-lzop  default 'gzip'	Compress files upon upload request based on the format specified.
---	---	---

file-transfer techsupport upload url <A> ssh-auth <B> username <C> category category-type <D> directory name <E> files <F> compression-format <G>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	Ssh client authentication using ssh key.
C	string {length = 1..max}	When: ../url and not( (starts-with(../url, 'ftpt')) or (starts-with(../url, 'http')) )  File transfer protocols credential username input.
D	identityref One of: reboot-logs   syslog   trace-logs	Category type.
E	string	Directory name.
F	string	When: (derived-from-or-self (../category-type, 'trace-logs'))

		List of files.
G	enumeration One of: gzip   lzop   encrypted-gzip   encrypted-lzop  default 'gzip'	Compress files upon upload request based on the format specified.

file-transfer techsupport upload url <A> ssh-auth <B> username <C> category category-type <D> files <E> compression-format <F>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	Ssh client authentication using ssh key.
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'ftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref One of: reboot-logs   syslog   trace-logs	Category type.
E	string	List of files.
F	enumeration One of:	Compress files upon upload request based on the format specified.

	gzip   lzop   encrypted-gzip   encrypted-lzop	
	default 'gzip'	

file-transfer upload url <A> server-auth pinned-ca-certs <B> pinned-server-certs <C> est-certificate-profile <D> username <E> category category-type <F> files <G> compression-format <H>

#### Input Parameters:

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/' home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
C	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it is an exact match to a configured pinned server certificate.
D	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST CA certificate profile to be used from other modules
E	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )

		File transfer protocols credential username input.
F	identityref One of: syslog	Category type.
G	string	List of files.
H	enumeration One of: gzip   lzop  default 'gzip'	compress files upon upload request based on the format specified.

file-transfer upload url <A> password <B> username <C> category category-type <D> files <E> compression-format <F>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	string	Password
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref One of: syslog	Category type.

E	string	List of files.
F	enumeration One of: gzip   lzop  default 'gzip'	compress files upon upload request based on the format specified.

file-transfer upload url <A> ssh-auth <B> username <C> category category-type <D> files <E> compression-format <F>

**Input Parameters:**

Parameter	Type	Description
A	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
B	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	Ssh client authentication using ssh key.
C	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'ftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.
D	identityref One of: syslog	Category type.
E	string	List of files.
F	enumeration One of:	compress files upon upload request based on the format specified.

	gzip   lzop	
	default 'gzip'	

## 4.5 forwarding-state commands

### 4.5.1 Command Tree

```

|-- forwarding-state
  |-- forwarding-databases
    |-- forwarding-database <A>
      |-- reset-port-in-forwarding-database forwarder <B> port <C>
      |-- reset-forwarding-databases

```

### 4.5.2 Commands

forwarding-state forwarding-databases forwarding-database <A> reset-port-in-forwarding-database forwarder <B> port <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..100} {pattern = [!#&-Z\^_-z ~]*}	The name of the forwarding database.
B	leafref : /bbf-l2-fwd:forwarding-state/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder/bbf-l2-fwd:name	This leaf references a forwarder.
C	leafref : /bbf-l2-fwd:forwarding-state/bbf-l2-fwd:forwarders/bbf-l2-fwd:forwarder[bbf-l2-fwd:name = current()/../forwarder]/bbf-l2-fwd:ports/bbf-l2-fwd:port/bbf-l2-fwd:name	This leaf references a port within the forwarder identified by the leaf 'forwarder'.

forwarding-state forwarding-databases reset-forwarding-databases

## 4.6 hardware-state commands

### 4.6.1 Command Tree

```

|-- hardware-state
  |-- component <A>
    |-- reset reset-type <B>
    |-- software
      |-- software <B>
        |-- download
          |-- abort-download name <C>
          |-- download-software url <C> name <D> verify-enable <E> ssh-auth <F> est-ca-certificate-profile-reference est-certificate-profile <G> central-keystore-reference asymmetric-key <H> certificate <I>
          |-- download-software url <C> name <D> verify-enable <E> ssh-auth <F> server-public-key <G> central-keystore-reference asymmetric-key <H> certificate <I>
          |-- download-software url <C> name <D> verify-enable <E> ssh-auth <F> est-ca-certificate-profile-reference est-certificate-profile <G> est-certificate-profile-reference est-certificate-profile <H>
          |-- download-software url <C> name <D> verify-enable <E> ssh-auth <F> server-public-key <G> est-certificate-profile-reference est-certificate-profile <H>
        |-- revisions
          |-- revision <C>
            |-- activate-revision
              |-- activate with-default-datastore <D>
            |-- commit-revision
              |-- commit
            |-- delete-revision
              |-- delete
            |-- download
              |-- abort-config-download
              |-- config-download url <D> ssh-auth <E> est-ca-certificate-profile-reference est-certificate-profile <F> central-keystore-reference asymmetric-key <G> certificate <H>
              |-- config-download url <D> ssh-auth <E> server-public-key <F> central-keystore-reference asymmetric-key <G> certificate <H>
              |-- config-download url <D> ssh-auth <E> est-ca-certificate-profile-reference est-certificate-profile <F> est-certificate-profile-reference est-certificate-profile <G>
              |-- config-download url <D> ssh-auth <E> server-public-key <F> est-certificate-profile-reference est-certificate-profile <G>
            |-- verify-software <B>
            |-- verify-revision <C>
            |-- verify
              |-- abort-verify
              |-- verify

```

### 4.6.2 Commands

hardware-state component <A> reset reset-type <B>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	identityref One of: hardware-reset   hardware-reset-to-default-configuration   hardware-reset-with-self-test	Type of reset requested of the component.

hardware-state component <A> software software <B> download abort-download name <C>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ -~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [-a-zA-Z0-9_.*]*}	The name of the software that is currently downloading.

hardware-state component <A> software software <B> download download-software url <C> name <D> verify-enable <E> ssh-auth <F> est-ca-certificate-profile-reference est-certificate-profile <G> central-keystore-reference asymmetric-key <H> certificate <I>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

B	string {length = 1..64} {pattern = [ ~-]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..255}	URL containing the information required to download the specified software included protocol, IP address, filepath, etc..
D	string {length = 1..64} {pattern = [-a-zA-Z0-9_.*]*}	The name of the software to be downloaded. For example, the file name associated with the software to download from the specified URL.
E	boolean  default 'true'	True means implicitly digital verification is required else otherwise.
F	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../bbf-sim:url, 'sftp'))  ssh client authentication using ssh key.
G	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules
H	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.
I	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()../ asymmetric-key]/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

hardware-state component <A> software software <B> download download-software url <C> name <D> verify-enable <E> ssh-auth <F> server-public-key <G> central-keystore-reference asymmetric-key <H> certificate <I>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.

		This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ -~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..255}	URL containing the information required to download the specified software included protocol, IP address, filepath, etc..
D	string {length = 1..64} {pattern = [-a-zA-Z0-9_.*]}	The name of the software to be downloaded. For example, the file name associated with the software to download from the specified URL.
E	boolean  default 'true'	True means implicitly digital verification is required else otherwise.
F	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../bbf-sim:url, 'sftp'))  ssh client authentication using ssh key.
G	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	When: (starts-with(/../bbf-sim:url, 'https'))  A reference to a list of certificate authority (CA) certificates used while download using https.
H	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.
I	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()../ asymmetric-key]/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

hardware-state component <A> software software <B> download download-software url <C> name <D> verify-enable <E> ssh-auth <F> est-ca-certificate-profile-reference est-certificate-profile <G> est-certificate-profile-reference est-certificate-profile <H>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..255}	URL containing the information required to download the specified software included protocol, IP address, filepath, etc..
D	string {length = 1..64} {pattern = [-a-zA-Z0-9_.*]*}	The name of the software to be downloaded. For example, the file name associated with the software to download from the specified URL.
E	boolean  default 'true'	True means implicitly digital verification is required else otherwise.
F	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../bbf-sim:url, 'sftp'))  ssh client authentication using ssh key.
G	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules
H	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

hardware-state component <A> software software <B> download download-software url  
<C> name <D> verify-enable <E> ssh-auth <F> server-public-key <G> est-certificate-profile-  
reference est-certificate-profile <H>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

B	string {length = 1..64} {pattern = [ ~~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..255}	URL containing the information required to download the specified software included protocol, IP address, filepath, etc..
D	string {length = 1..64} {pattern = [-a-zA-Z0-9_.*]*}	The name of the software to be downloaded. For example, the file name associated with the software to download from the specified URL.
E	boolean  default 'true'	True means implicitly digital verification is required else otherwise.
F	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../bbf-sim:url, 'sftp'))  ssh client authentication using ssh key.
G	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	When: (starts-with(/../bbf-sim:url, 'https'))  A reference to a list of certificate authority (CA) certificates used while download using https.
H	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

hardware-state component <A> software software <B> revisions revision <C> activate-revision  
activate with-default-datastore <D>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA

		firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.
D	boolean  default 'false'	When: ../../../../bbf-sim:name = 'application_software'  the input leaf to mention activate with default-datastore

hardware-state component <A> software software <B> revisions revision <C> commit-revision  
commit

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.

hardware-state component <A> software software <B> revisions revision <C> delete-revision  
delete

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.

hardware-state component <A> software software <B> revisions revision <C> download abort-config-download

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.

hardware-state component <A> software software <B> revisions revision <C> download config-download url <D> ssh-auth <E> est-ca-certificate-profile-reference est-certificate-profile <F> central-keystore-reference asymmetric-key <G> certificate <H>

**Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.

		This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ -~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ -~]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.
D	string {length = 1..255}	URL containing the information required to download the specified configuration file included protocol, IP address, filepath, etc..
E	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../nokia-swm-ext:url, 'sftp'))  ssh client authentication using ssh key.
F	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules
G	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.
H	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()]/../ asymmetric-key/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

hardware-state component <A> software software <B> revisions revision <C> download config-download url <D> ssh-auth <E> server-public-key <F> central-keystore-reference asymmetric-key <G> certificate <H>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

B	string {length = 1..64} {pattern = [ --]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ --]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.
D	string {length = 1..255}	URL containing the information required to download the specified configuration file included protocol, IP address, filepath, etc..
E	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../nokia-swm-ext:url, 'sftp'))  ssh client authentication using ssh key.
F	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	When: (starts-with(/../nokia-swm-ext:url, 'https'))  A reference to a list of certificate authority (CA) certificates used while download using https.
G	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key/ks:name	A reference to an asymmetric key in the keystore.
H	leafref : /ks:keystore/ks:asymmetric-keys/ ks:asymmetric-key[ks:name = current()]/../ asymmetric-key]/ks:certificates/ ks:certificate/ks:name	A reference to a specific certificate of the asymmetric key in the keystore.

hardware-state component <A> software software <B> revisions revision <C> download config-  
download url <D> ssh-auth <E> est-ca-certificate-profile-reference est-certificate-profile <F>  
est-certificate-profile-reference est-certificate-profile <G>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.

B	string {length = 1..64} {pattern = [ ~~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.
C	string {length = 1..64} {pattern = [ ~~]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.
D	string {length = 1..255}	URL containing the information required to download the specified configuration file included protocol, IP address, filepath, etc..
E	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../nokia-swm-ext:url, 'sftp'))  ssh client authentication using ssh key.
F	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules
G	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

hardware-state component <A> software software <B> revisions revision <C> download config-download url <D> ssh-auth <E> server-public-key <F> est-certificate-profile-reference est-certificate-profile <G>

#### Input Parameters:

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	string {length = 1..64} {pattern = [ ~~]*}	The name associated with this software. For a given physical entity, there may be more than one type of software being managed, e.g. application software, firmware or FPGA firmware. The name should represent this association, e.g. 'firmware'.

C	string {length = 1..64} {pattern = [ --~]*}	The name of the software revision. This is the name used when the software was downloaded, e.g. filename.
D	string {length = 1..255}	URL containing the information required to download the specified configuration file included protocol, IP address, filepath, etc..
E	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	When: (starts-with(/../nokia-swm-ext:url, 'sftp'))  ssh client authentication using ssh key.
F	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	When: (starts-with(/../nokia-swm-ext:url, 'https'))  A reference to a list of certificate authority (CA) certificates used while download using https.
G	leafref : /estc:est-client/estc:est-certificate-profile/ estc:name	A reference to an EST certificate profile to be used from other modules

hardware-state component <A> software verify-software <B> verify-revision <C> verify abort-verify

#### **Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
C	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision present.

hardware-state component <A> software verify-software <B> verify-revision <C> verify verify

#### **Input Parameters:**

Parameter	Type	Description
A	string	The name assigned to this component.  This name is not required to be the same as entPhysicalName.
B	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:name	The name of the list software present.
C	leafref : /hw:hardware-state/hw:component/bbf-sim:software/bbf-sim:software/bbf-sim:revisions/bbf-sim:revision/bbf-sim:name	The name of the software revision present.

## 4.7 interfaces-state commands

### 4.7.1 Command Tree

```
-- interfaces-state
  -- interface <A>
    -- reset-statistics
    -- tm-root
      -- clear-statistics
```

### 4.7.2 Commands

interfaces-state interface <A> reset-statistics

#### Input Parameters:

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>

interfaces-state interface <A> tm-root clear-statistics

#### Input Parameters:

Parameter	Type	Description
A	string	<p>The name of the interface.</p> <p>A server implementation MAY map this leaf to the ifName MIB object. Such an implementation needs to use some mechanism to handle the differences in size and characters allowed between this leaf and ifName. The definition of such a mechanism is outside the scope of this document.</p>



## 4.8 ipfix commands

### 4.8.1 Command Tree

```

|-- ipfix cache <A>
    |-- full-data-sync
|-- ipfix exportingProcess <A>
    |-- destination <B>
        |-- tcpExporter certificate
            |-- client-identity certificate local-definition
                |-- install-hidden-key private-key <C>
    |-- revert

```

### 4.8.2 Commands

ipfix cache <A> full-data-sync

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.

ipfix exportingProcess <A> destination <B> tcpExporter certificate client-identity certificate  
local-definition install-hidden-key private-key <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	Key of this list.
C	binary	A binary that contains the value of the private key. The interpretation of the content is defined by the key algorithm. For example, a DSA key is an integer, an RSA

		key is represented as RSAPrivateKey as defined in RFC 8017, and an Elliptic Curve Cryptography (ECC) key is represented as ECPrivateKey as defined in RFC 5915.
--	--	---

ipfix exportingProcess <A> revert

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	Key of this list.

## 4.9 licensing commands

### 4.9.1 Command Tree

```
-- licensing cde-features replace-root-certificate content <A>
-- licensing certificate
  -- client-identity certificate local-definition
    -- install-hidden-key private-key <A>
```

### 4.9.2 Commands

licensing cde-features replace-root-certificate content <A>

#### Input Parameters:

Parameter	Type	Description
A	string	Contains the content of the Root certificate

licensing certificate client-identity certificate local-definition install-hidden-key private-key <A>

#### Input Parameters:

Parameter	Type	Description
A	binary	A binary that contains the value of the private key. The interpretation of the content is defined by the key algorithm. For example, a DSA key is an integer, an RSA key is represented as RSAPrivateKey as defined in RFC 8017, and an Elliptic Curve Cryptography (ECC) key is represented as ECPrivateKey as defined in RFC 5915.

## 4.10 netconf-server commands

### 4.10.1 Command Tree

```

|-- netconf-server call-home
|  |-- callhome-restart
|  |-- netconf-client <A>
|     |-- endpoints endpoint <B>
|        |-- tls server-identity local-definition
|           |-- install-certificate cert <C>
|           |-- install-hidden-key private-key <C>

```

### 4.10.2 Commands

netconf-server call-home callhome-restart

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls server-identity local-definition install-certificate cert <C>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z\^_~]*}	An arbitrary name for this endpoint.
C	binary	The binary certificate data for this certificate.

netconf-server call-home netconf-client <A> endpoints endpoint <B> tls server-identity local-definition install-hidden-key private-key <C>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

---

A	string {length = 1..64} {pattern = [!#&-Z^_~]*}	An arbitrary name for the remote NETCONF client.
B	string {length = 1..64} {pattern = [!#&-Z^_~]*}	An arbitrary name for this endpoint.
C	binary	A binary that contains the value of the private key. The interpretation of the content is defined by the key algorithm. For example, a DSA key is an integer, an RSA key is represented as RSAPrivateKey as defined in RFC 8017, and an Elliptic Curve Cryptography (ECC) key is represented as ECPrivateKey as defined in RFC 5915.

## 4.11 nokia-debug commands

### 4.11.1 Command Tree

```

|-- nokia-debug abort
|-- nokia-debug check-status
|-- nokia-debug delete-logs session-id <A>
|-- nokia-debug retrieve-logs session-id <A>
|-- nokia-debug retrieve-logs-session-ids
|-- nokia-debug retrieve-public-key
|-- nokia-debug retrieve-public-key-and-nonce
|-- nokia-debug run key <A> commands <B> sign <C> continue-on-error <D> log-collection conditions file-size <E>
delay <F> immediate <G> size-check-speed <H> file-pattern <I> session-id-prefix <J> auto-clean-trigger <K> url <L>
server-auth pinned-ca-certs <M> pinned-server-certs <N> username <O>
|-- nokia-debug run key <A> commands <B> sign <C> continue-on-error <D> log-collection conditions file-size <E>
delay <F> immediate <G> size-check-speed <H> file-pattern <I> session-id-prefix <J> auto-clean-trigger <K> url <L>
password <M> username <N>
|-- nokia-debug run key <A> commands <B> sign <C> continue-on-error <D> log-collection conditions file-size <E>
delay <F> immediate <G> size-check-speed <H> file-pattern <I> session-id-prefix <J> auto-clean-trigger <K> url
<L> ssh-auth <M> username <N>

```

### 4.11.2 Commands

nokia-debug abort

nokia-debug check-status

nokia-debug delete-logs session-id <A>

#### Input Parameters:

Parameter	Type	Description
A	string	ID of the session to delete.

nokia-debug retrieve-logs session-id <A>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

A	string	ID of the session to retrieve.
---	--------	--------------------------------

nokia-debug retrieve-logs-session-ids

nokia-debug retrieve-public-key

nokia-debug retrieve-public-key-and-nonce

nokia-debug run key <A> commands <B> sign <C> continue-on-error <D> log-collection conditions file-size <E> delay <F> immediate <G> size-check-speed <H> file-pattern <I> session-id-prefix <J> auto-clean-trigger <K> url <L> server-auth pinned-ca-certs <M> pinned-server-certs <N> username <O>

**Input Parameters:**

Parameter	Type	Description
A	binary	The symmetric key used to encrypt the commands field below. Encrypted and base64 encoded.
B	binary	The set of commands and clean-up commands to execute, formatted in json text and encrypted as a single block using the public key above.
C	binary	The sign of command data and nonce with private key of NCY client
D	boolean  default 'true'	Continue running subsequent commands if one of the commands fail
E	uint32 [0..30000]  default '30000'	Unit: KB  Collect log files when their size together reaches this value

F	uint32  default '0'	Unit: seconds  Collect log files after delay seconds have passed
G	boolean  default 'false'	Immediately return the output of the commands without any delay and without collection of apps logs.
H	enumeration One of: normal   fast   slow  default 'normal'	How often the log file size will be checked !
I	string	Pattern describing the files to be collected
J	string	A prefix to the auto-generated rpc session id.
K	uint32  default '7200'	Unit: seconds  Duration, in seconds, after which locally saved logs of this session are cleaned-up
L	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
M	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of certificate authority (CA) certificates used by the TLS client to authenticate TLS server certificates. A server certificate is authenticated if it has a valid chain of trust to a configured pinned CA certificate.
N	leafref : /ta:trust-anchors/ta:pinned-certificates/ ta:name	A reference to a list of server certificates used by the TLS client to authenticate TLS server certificates. A server certificate is

		authenticated if it is an exact match to a configured pinned server certificate.
O	string {length = 1..max}	When: ../url and not( (starts-with(../url, 'tftp')) or (starts-with(../url, 'http')) )  File transfer protocols credential username input.

nokia-debug run key <A> commands <B> sign <C> continue-on-error <D> log-collection  
conditions file-size <E> delay <F> immediate <G> size-check-speed <H> file-pattern <I>  
session-id-prefix <J> auto-clean-trigger <K> url <L> password <M> username <N>

#### **Input Parameters:**

Parameter	Type	Description
A	binary	The symmetric key used to encrypt the commands field below. Encrypted and base64 encoded.
B	binary	The set of commands and clean-up commands to execute, formatted in json text and encrypted as a single block using the public key above.
C	binary	The sign of command data and nonce with private key of NCY client
D	boolean  default 'true'	Continue running subsequent commands if one of the commands fail
E	uint32 [0..30000]  default '30000'	Unit: KB  Collect log files when their size together reaches this value
F	uint32  default '0'	Unit: seconds  Collect log files after delay seconds have passed
G	boolean  default 'false'	Immediately return the output of the commands without any delay and without collection of apps logs.
H	enumeration	How often the log file size will be checked !

	One of: normal   fast   slow  default 'normal'	
I	string	Pattern describing the files to be collected
J	string	A prefix to the auto-generated rpc session id.
K	uint32  default '7200'	Unit: seconds  Duration, in seconds, after which locally saved logs of this session are cleaned-up
L	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
M	string	Password
N	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.

nokia-debug run key <A> commands <B> sign <C> continue-on-error <D> log-collection conditions file-size <E> delay <F> immediate <G> size-check-speed <H> file-pattern <I> session-id-prefix <J> auto-clean-trigger <K> url <L> ssh-auth <M> username <N>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

A	binary	The symmetric key used to encrypt the commands field below. Encrypted and base64 encoded.
B	binary	The set of commands and clean-up commands to execute, formatted in json text and encrypted as a single block using the public key above.
C	binary	The sign of command data and nonce with private key of NCY client
D	boolean  default 'true'	Continue running subsequent commands if one of the commands fail
E	uint32 [0..30000]  default '30000'	Unit: KB  Collect log files when their size together reaches this value
F	uint32  default '0'	Unit: seconds  Collect log files after delay seconds have passed
G	boolean  default 'false'	Immediately return the output of the commands without any delay and without collection of apps logs.
H	enumeration One of: normal   fast   slow  default 'normal'	How often the log file size will be checked !
I	string	Pattern describing the files to be collected
J	string	A prefix to the auto-generated rpc session id.
K	uint32  default '7200'	Unit: seconds  Duration, in seconds, after which locally saved logs of this session are cleaned-up
L	string	URL of the remote server containing the information required to upload the specified file included protocol, IP address(:port) and remote-directory-path. Note that a URL that does not end with a forward slash '/' will modify the name of the final

		compressed file that is to be uploaded. For instance a trace-log upload with URL such as 'scp://10.80.89.32/home/bob/' will upload the final file to the '/home/bob' directory on the server, with the name 'trace-logs-20231026-102822789.tar.gz.' On the other hand, a URL like 'scp://10.80.89.32/home/bob' will upload the final file to the '/home' directory on the server, with the name 'bob-20231026-102822789.tar.gz.'
M	identityref One of: ecdsa-sha2-nistp256   ssh-dss   ssh-rsa	Ssh client authentication using ssh key.
N	string {length = 1..max}	When: ../url and not( (starts-with(..url, 'tftp')) or (starts-with(..url, 'http')) )  File transfer protocols credential username input.

## 4.12 persistent-connectivity-data commands

### 4.12.1 Command Tree

|-- [persistent-connectivity-data fetch-management-channel-information](#)  
|-- [persistent-connectivity-data save](#)

### 4.12.2 Commands

persistent-connectivity-data fetch-management-channel-information

persistent-connectivity-data save

## 4.13 rollback-files commands

### 4.13.1 Command Tree

```

|-- rollback-files
|  |-- apply-rollback-file fixed-number <A> selective path <C>
|  |-- apply-rollback-file id <A> selective path <C>
|  |-- get-rollback-file fixed-number <A>
|  |-- get-rollback-file id <A>

```

### 4.13.2 Commands

rollback-files apply-rollback-file fixed-number <A> selective path <C>

#### Input Parameters:

Parameter	Type	Description
A	leafref : /rollback-files/file/fixed-number	The fixed-number of the rollback file.
C	string	Only apply changes for the sub tree restricted by this path.

rollback-files apply-rollback-file id <A> selective path <C>

#### Input Parameters:

Parameter	Type	Description
A	leafref : /rollback-files/file/id	The identifier of the rollback file.
C	string	Only apply changes for the sub tree restricted by this path.

rollback-files get-rollback-file fixed-number <A>

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

---

A	leafref : /rollback-files/file/fixed-number	The fixed-number of the rollback file.
---	--	--

rollback-files get-rollback-file id <A>

**Input Parameters:**

Parameter	Type	Description
A	leafref : /rollback-files/file/id	The identifier of the rollback file.

## 4.14 syslog commands

### 4.14.1 Command Tree

```

|-- syslog
  |-- actions remote destination <A>
    |-- tls client-identity certificate local-definition
      |-- install-hidden-key private-key <B>

```

### 4.14.2 Commands

syslog actions remote destination <A> tls client-identity certificate local-definition install-hidden-key private-key <B>

**Input Parameters:**

Parameter	Type	Description
A	string {length = 1..31} {pattern = [!#&-Z^_z~]*}	An arbitrary name for the endpoint to connect to.
B	binary	A binary that contains the value of the private key. The interpretation of the content is defined by the key algorithm. For example, a DSA key is an integer, an RSA key is represented as RSAPrivateKey as defined in RFC 8017, and an Elliptic Curve Cryptography (ECC) key is represented as ECPrivateKey as defined in RFC 5915.

## 4.15 system commands

### 4.15.1 Command Tree

|-- [system clock set-current-datetime current-datetime <A>](#)

### 4.15.2 Commands

system clock set-current-datetime current-datetime <A>

#### Input Parameters:

Parameter	Type	Description
A	string {pattern = \d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z [\+-]\d{2}:\d{2})}	The current system date and time.

## 4.16 system-security commands

### 4.16.1 Command Tree

```
-- system-security remove-lockout global  
-- system-security remove-lockout ip-addr <A>  
-- system-security remove-lockout user <A>  
-- system-security server-identity host-key <A>  
  |-- public-key local-definition  
  |-- generate-hidden-key algorithm <B>
```

### 4.16.2 Commands

system-security remove-lockout global

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

system-security remove-lockout ip-addr <A>

#### Input Parameters:

Parameter	Type	Description
A	leafref : /system-security/lockout/ip-addr/address	IP address to be removed from lockout.

system-security remove-lockout user <A>

#### Input Parameters:

Parameter	Type	Description
A	leafref : /system-security/lockout/user/name	User to be removed from lockout.

system-security server-identity host-key <A> public-key local-definition generate-hidden-key  
algorithm <B>

**Input Parameters:**

Parameter	Type	Description
A	string	An arbitrary name for this host-key
B	enumeration One of: rsa1024   rsa2048   dsa1024	The algorithm to be used when generating the asymmetric key.

## 4.17 users commands

### 4.17.1 Command Tree

```
-- users user <A>  
  |-- authentication change-password old-password <B> new-password <C> confirm-password <D>
```

### 4.17.2 Commands

users user <A> authentication change-password old-password <B> new-password <C>  
confirm-password <D>

#### Input Parameters:

Parameter	Type	Description
A	string {length = 1..11} {pattern = [_+0-9a-zA-Z]*}	Name of user.
B	string	User's old password.
C	string	User's new password.
D	string	User's new password confirmed.

## 5. Builtin Operational Commands

### 5.1 autowizard commands

#### 5.1.1 Command Tree

|-- [autowizard <A>](#)

#### 5.1.2 Commands

autowizard <A>

##### Command Description:

Automatically query for mandatory elements

##### Input Parameters:

Parameter	Type	Description
A	boolean	<p>When enabled, the CLI will prompt the user for required settings when a new identifier is created and for mandatory action parameters.</p> <p>This saves the user from typing explicit set commands to set each required setting. Note that it is recommended to disable the autowizard before pasting in a list of commands, in order to avoid prompting. A good practice is to start all such scripts with a line that disables the autowizard</p> <p>Default: [true]</p>

## 5.2 clear commands

### 5.2.1 Command Tree

|-- [clear history](#)

### 5.2.2 Commands

clear history

#### **Command Description:**

Clear command history.

By default, clearing the history in one mode (for instance operational mode) will not affect the history of the other mode.

Enabling the 'confd.conf' setting 'unifiedHistory', will cause the 'clear history' command to clear both the operational mode session's history and the configuration mode's history.

## 5.3 complete-on-space commands

### 5.3.1 Command Tree

|-- [complete-on-space <A>](#)

### 5.3.2 Commands

complete-on-space <A>

#### Command Description:

Enable/disable completion on space

#### Input Parameters:

Parameter	Type	Description
A	boolean	Controls if command completion should be attempted when <space> is entered. Entering <tab> always results in command completion. default: [true]

# 5.4 config commands

## 5.4.1 Command Tree

|-- [config <A> <B>](#)

## 5.4.2 Commands

config <A> <B>

**Command Description:**

Manipulate software configuration information

**Input Parameters:**

Parameter	Type	Description
A	oneOf: exclusive terminal	exclusive: Lock the running configuration terminal: Edit a private copy of the running configuration, no lock is taken. default: terminal
B	oneOf: no-confirm	no-confirm

## 5.5 describe commands

### 5.5.1 Command Tree

|-- [describe <A>](#)

### 5.5.2 Commands

describe <A>

#### Command Description:

Display current configuration, with optional a <pathfiler>

#### Input Parameters:

Parameter	Type	Description
A	string	specify a pathfilter, e.g: describe system describe system management ...

## 5.6 display-level commands

### 5.6.1 Command Tree

|-- [display-level <A>](#)

### 5.6.2 Commands

display-level <A>

#### Command Description:

Configure show command display level

#### Input Parameters:

Parameter	Type	Description
A	uint64	<p>The display-level option can be used to limit how many levels will be displayed by the show command.</p> <p>If a display level of 1 is specified then only the direct children of an element will be shown.</p> <p>If a display level of 3 is specified then only elements at depth 3 below a given element will be displayed, etc.</p> <p>Default: [99999999]</p>

## 5.7 file commands

### 5.7.1 Command Tree

|-- [file list](#)  
|-- [file show-syslog <A>](#)

### 5.7.2 Commands

file list

**Command Description:**

Perform file operations

file show-syslog <A>

**Command Description:**

Display content of syslog file (text/compressed)

**Input Parameters:**

Parameter	Type	Description
A	string	file name

## 5.8 help commands

### 5.8.1 Command Tree

|-- [help <A>](#)

### 5.8.2 Commands

help <A>

#### Command Description:

Provide help information

#### Input Parameters:

Parameter	Type	Description
A	string	any command

## 5.9 history commands

### 5.9.1 Command Tree

|-- [history <A>](#)

### 5.9.2 Commands

history <A>

#### Command Description:

Configure history size

#### Input Parameters:

Parameter	Type	Description
A	uint32	Size of CLI command history Default: [100]

## 5.10 id commands

### 5.10.1 Command Tree

|-- [id](#)

### 5.10.2 Commands

id

#### Command Description:

Show user id information; uid, gid, and groups

## 5.11 idle-timeout commands

### 5.11.1 Command Tree

|-- [idle-timeout <A>](#)

### 5.11.2 Commands

idle-timeout <A>

#### Command Description:

Configure idle timeout

#### Input Parameters:

Parameter	Type	Description
A	uint32	Maximum idle time in seconds before being logged out. Use 0 (zero) for for infinit Default: [1800] Units: second

## 5.12 ignore-leading-space commands

### 5.12.1 Command Tree

|-- [ignore-leading-space <A>](#)

### 5.12.2 Commands

ignore-leading-space <A>

#### Command Description:

Ignore leading whitespace (true/false)

#### Input Parameters:

Parameter	Type	Description
A	boolean	Controls if leading spaces should be ignored or not. This is useful to turn off when pasting commands into the CLI. Default: [true]

## 5.13 leaf-prompting commands

### 5.13.1 Command Tree

|-- [leaf-prompting <A>](#)

### 5.13.2 Commands

leaf-prompting <A>

#### Command Description:

Automatically query for leaf values

#### Input Parameters:

Parameter	Type	Description
A	boolean	is either 'true' or 'false'. If 'true' the CLI will prompt the user for leaf values if they are not provided on the command line. If 'false' then an error message will be displayed if the user does not provide a value for a leaf. Default: [true]

## 5.14 logout commands

### 5.14.1 Command Tree

```
|-- logout
|   |-- session <A>
|   |-- user <A>
```

### 5.14.2 Commands

logout session <A>

**Input Parameters:**

Parameter	Type	Description
A	uint32	Log out a specific session. Use who command to display users/ sessions

logout user <A>

**Input Parameters:**

Parameter	Type	Description
A	string	Log out a specific user Use who command to display users/ sessions

## 5.15 logs commands

### 5.15.1 Command Tree

|-- [logs LT-NE list](#)  
|-- [logs LT-NE show <A>](#)

### 5.15.2 Commands

logs LT-NE list

**Command Description:**

List the available syslog files.

logs LT-NE show <A>

**Command Description:**

Display the content of syslog file.

**Input Parameters:**

Parameter	Type	Description
A	string	Provide the name of the file.

## 5.16 nc commands

### 5.16.1 Command Tree

|-- [nc](#)

### 5.16.2 Commands

nc

#### Command Description:

The Netcat (nc) command is a command-line utility for connection troubleshooting by reading and writing data between two network hosts.

The communication happens using either TCP or UDP.

In Lighthouse we allow Netcat to run in Connect mode, where Netcat works as a client.

The nc command runs the utility as client connecting to another host. Parameters are limited to:

nc [OPTIONS] HOST PORTLIST

OPTIONS:

-w SEC Timeout for connects and final net reads

-i SEC Delay interval for lines sent

-n Don't do DNS resolution

-u UDP mode

-b Allow broadcasts

-z Zero-I/O mode (scanning)

HOST:

hostname

PORTLIST:

port1

port1-port5

port1 port50 port3-port7 ...

Example to scan for open port: nc -z -w1 2.2.2.2 800-900

## 5.17 ntpq commands

### 5.17.1 Command Tree

|-- [ntpq](#)

### 5.17.2 Commands

ntpq

#### **Command Description:**

standard NTP query program

The ntpq utility program is used to monitor NTP daemon ntpd operations and determine performance.

The program can be run either in interactive mode or controlled using command line arguments.

## 5.18 paginate commands

### 5.18.1 Command Tree

|-- [paginate](#)

### 5.18.2 Commands

paginate

#### Command Description:

Paginate output from CLI commands

## 5.19 prompt1 commands

### 5.19.1 Command Tree

|-- [prompt1 <A>](#)

### 5.19.2 Commands

prompt1 <A>

#### Command Description:

Set operational mode prompt

#### Input Parameters:

Parameter	Type	Description
A	string	<p>prompt used in operational mode</p> <p>The string may contain a number of backslash-escaped special characters which are decoded as follows:</p> <p>/[ and /]: Enclosing sections of the prompt in /[ and /] makes that part not count when calculating the width of the prompt. This makes sense, for example, when including non-printable characters, or control codes that are consumed by the terminal. The common control codes for setting text properties for vt100/xterm are ignored automatically, so are control characters</p> <p>/d: the date in 'YYYY-MM-DD' format (e.g., '2006-01-18')</p> <p>/h: the hostname up to the first '.' (or delimiter as defined by promptHostnameDelimiter)</p> <p>/H: the hostname</p> <p>/s: the client source ip</p> <p>/S: the name provided by the -H argument to confd_cli</p> <p>/t: the current time in 24-hour HH:MM:SS format</p> <p>/T: the current time in 12-hour HH:MM:SS format</p> <p>/@: the current time in 12-hour am/pm format</p> <p>/A: the current time in 24-hour HH:MM format</p>

		<p>/u: the username of the current user</p> <p>/m: the mode name (only used in XR style)</p> <p>/m{N}: same as \m, but the number of trailing components in the displayed path is limited to be max N (an integer). Characters removed are replaced with an ellipsis (...).</p> <p>/M: the mode name inside parenthesis if in a mode</p> <p>/M{N}: same as \M, but the number of trailing components in the displayed path is limited to be max N (an integer). Characters removed are replaced with an ellipsis (...).</p> <p>Default: [/h/M#]</p>
--	--	---

## 5.20 prompt2 commands

### 5.20.1 Command Tree

|-- [prompt2 <A>](#)

### 5.20.2 Commands

prompt2 <A>

#### Command Description:

Set configure mode prompt

#### Input Parameters:

Parameter	Type	Description
A	string	<p>prompt used in configuration mode. The string may contain a number of backslash-escaped special characters which are decoded as follows:</p> <p>/[ and /]: Enclosing sections of the prompt in /[ and /] makes that part not count when calculating the width of the prompt. This makes sense, for example, when including non-printable characters, or control codes that are consumed by the terminal. The common control codes for setting text properties for vt100/xterm are ignored automatically, so are control characters</p> <p>/d: the date in 'YYYY-MM-DD' format (e.g., '2006-01-18')</p> <p>/h: the hostname up to the first '.' (or delimiter as defined by promptHostnameDelimiter)</p> <p>/H: the hostname</p> <p>/s: the client source ip</p> <p>/S: the name provided by the -H argument to confd_cli</p> <p>/t: the current time in 24-hour HH:MM:SS format</p> <p>/T: the current time in 12-hour HH:MM:SS format</p> <p>/@: the current time in 12-hour am/pm format</p> <p>/A: the current time in 24-hour HH:MM format</p>

		/u: the username of the current user /m: the mode name (only used in XR style) /m{N}: same as \m, but the number of trailing components in the displayed path is limited to be max N (an integer). Characters removed are replaced with an ellipsis (...). /M: the mode name inside parenthesis if in a mode /M{N}: same as \M, but the number of trailing components in the displayed path is limited to be max N (an integer). Characters removed are replaced with an ellipsis (...). Default: [/h(/m)#]
--	--	--

## 5.21 screen-length commands

### 5.21.1 Command Tree

|-- [screen-length <A>](#)

### 5.21.2 Commands

screen-length <A>

#### Command Description:

Configure screen length

#### Input Parameters:

Parameter	Type	Description
A	uint32	Current length of terminal. This is used when paginating output to get proper line count. Setting this to 0 (zero) means it becomes maximum length and turns off pagination. Default: [36]

## 5.22 screen-width commands

### 5.22.1 Command Tree

|-- [screen-width <A>](#)

### 5.22.2 Commands

screen-width <A>

#### Command Description:

Configure screen width

#### Input Parameters:

Parameter	Type	Description
A	uint32	Current width of terminal. This is used when paginating output to get proper line count. Setting this to 0 (zero) means it becomes maximum width. Default: [157]

## 5.23 show-defaults commands

### 5.23.1 Command Tree

|-- [show-defaults <A>](#)

### 5.23.2 Commands

show-defaults <A>

#### Command Description:

Show default values when showing the configuration

#### Input Parameters:

Parameter	Type	Description
A	boolean	Controls if defaults values should be shown when displaying the configuration. The default values are shown as comments after the configured value Default: [true]

## 5.24 show commands

### 5.24.1 Command Tree

```
|-- show cli  
|-- show history <A>  
|-- show log  
|-- show notification stream <A> last <B> from <C> to <D>  
|-- show parser dump <A>  
|-- show running-config <A>
```

### 5.24.2 Commands

show cli

#### Command Description:

There are a number of session variables in the CLI.

They are only used during the session and are not persistent.

Their values are inspected using show cli in operational mode.

show history <A>

#### Command Description:

history of what has been executed before in oper mode

#### Input Parameters:

Parameter	Type	Description
A	uint64	number of items to show

show log

#### Command Description:

Display currently logged on users. The current session, i.e. the session running the show status command, is marked with an asterisk

show notification stream <A> last <B> from <C> to <D>

**Command Description:**

Display the last notifications in a selected stream.

The stream must use the builtin store and have replay enabled.

It is possible to limit the output by specifying the maximum number of events and/or a time range.

Default is to list 7 entries.

**Input Parameters:**

Parameter	Type	Description
A	string	event stream name (e.g NETCONF)
B	string	number of events, default is 7
C	string	dateTime (ccyy-mm-dd hh:mm:ss ccyy-mm-ddThh:mm:ss)
D	string	dateTime (ccyy-mm-dd hh:mm:ss ccyy-mm-ddThh:mm:ss)

show parser dump <A>

**Command Description:**

Shows all possible commands starting with command prefix

**Input Parameters:**

Parameter	Type	Description
A	string	prefix

show running-config <A>

**Command Description:**

Display current configuration. By default the whole configuration is displayed. It is possible to limit what is shown by supplying a <pathfilter>.

The pathfilter may be either a path pointing to a specific instance, or if an instance id is omitted, the part following the omitted instance is treated as a filter.

**Input Parameters:**

Parameter	Type	Description
A	string	specify a pathfilter, e.g: show running-config system show running-config system ntp ...

## 5.25 ssh commands

### 5.25.1 Command Tree

|-- [ssh](#)

### 5.25.2 Commands

ssh

#### **Command Description:**

Opens a secure shell on another host.

example: ssh -l <username> -p <port> hostname

For info on parameters enter the ssh command without any parameters.

## 5.26 terminal commands

### 5.26.1 Command Tree

|-- [terminal <A>](#)

### 5.26.2 Commands

terminal <A>

#### Command Description:

Set terminal type

#### Input Parameters:

Parameter	Type	Description
A	string	Terminal type. This setting is used for controlling how line editing is performed. Supported terminals are: dumb, vt100, xterm, linux, and ansi. Other terminals may also work but have no explicit support Default: [0]

## 5.27 timestamp commands

### 5.27.1 Command Tree

|-- [timestamp <A>](#)

### 5.27.2 Commands

timestamp <A>

#### Command Description:

Enable/disable the display of timestamp

#### Input Parameters:

Parameter	Type	Description
A	oneOf: enable disable	Display a timestamp after a command has been executed. The timestamp is displayed in the timezone UTC+-00:00 by default. Default: [disabled]

## 5.28 who commands

### 5.28.1 Command Tree

|-- [who](#)

### 5.28.2 Commands

who

#### **Command Description:**

Display currently logged on users. The current session, i.e. the session running the show status command, is marked with an asterisk

## 5.29 write commands

### 5.29.1 Command Tree

|-- [write terminal <A>](#)

### 5.29.2 Commands

write terminal <A>

#### Command Description:

Display current configuration, with an optional <pathfilter>

#### Input Parameters:

Parameter	Type	Description
A	string	specify a pathfilter, e.g: write terminal system write terminal system ntp ...

## 6. Builtin Configuration Commands

### 6.1 abort commands

#### 6.1.1 Command Tree

|-- [abort](#)

#### 6.1.2 Commands

abort

##### Command Description:

Abort configuration session without extra confirmation prompt

## 6.2 clear commands

### 6.2.1 Command Tree

|-- [clear](#)  
|-- [clear history](#)

### 6.2.2 Commands

clear

**Command Description:**

Remove all configuration changes

clear history

**Command Description:**

Clear command history.

By default, clearing the history in one mode (for instance operational mode) will not affect the history of the other mode.

Enabling the 'confd.conf' setting 'unifiedHistory', will cause the 'clear history' command to clear both the operational mode session's history and the configuration mode's history.

## 6.3 commit commands

### 6.3.1 Command Tree

|-- [commit](#)  
|-- [commit and-quit](#)

### 6.3.2 Commands

commit

**Command Description:**

Commit current set of changes

commit and-quit

**Command Description:**

Commit to running and quit configure mode.

## 6.4 compare commands

### 6.4.1 Command Tree

|-- [compare cfg <A> to <B>](#)

### 6.4.2 Commands

compare cfg <A> to <B>

#### Command Description:

Compare two configuration subtrees

#### Input Parameters:

Parameter	Type	Description
A	string	pathfilter
B	string	pathfilter

## 6.5 copy commands

### 6.5.1 Command Tree

|-- [copy cfg merge <A> to <B>](#)  
|-- [copy cfg overwrite <A> to <B>](#)

### 6.5.2 Commands

copy cfg merge <A> to <B>

#### Command Description:

Copy a list entry

#### Input Parameters:

Parameter	Type	Description
A	string	pathfilter
B	string	pathfilter

copy cfg overwrite <A> to <B>

#### Command Description:

Copy a list entry

#### Input Parameters:

Parameter	Type	Description
A	string	pathfilter
B	string	pathfilter

## 6.6 do commands

### 6.6.1 Command Tree

|-- [do <A>](#)

### 6.6.2 Commands

do <A>

#### Command Description:

Run an operational-mode command

#### Input Parameters:

Parameter	Type	Description
A	string	any operational command. e,g do show do who ...

## 6.7 end commands

### 6.7.1 Command Tree

|-- [end <A>](#)

### 6.7.2 Commands

end <A>

#### Command Description:

Terminate configuration session

#### Input Parameters:

Parameter	Type	Description
A	oneOf: no-confirm	no-confirm: user not warned about losing not committed changes

## 6.8 exit commands

### 6.8.1 Command Tree

|-- [exit <A>](#)

### 6.8.2 Commands

exit <A>

#### Command Description:

Exit from mode

#### Input Parameters:

Parameter	Type	Description
A	oneOf: no-confirm level configuration-mode	no-confirm: user not warned about losing not committed changes level: exit from this level. If performed on the top level, will exit configure mode. This is the default if no option is given. configuration-mode: exit from configuration mode regardless of which edit level. default: level

# 6.9 help commands

## 6.9.1 Command Tree

|-- [help <A>](#)

## 6.9.2 Commands

help <A>

**Command Description:**

Provide help information

**Input Parameters:**

Parameter	Type	Description
A	string	any command

## 6.10 insert commands

### 6.10.1 Command Tree

```
|-- insert <A>  
|-- insert <A> after|before|first|last <B>
```

### 6.10.2 Commands

insert <A>

#### Command Description:

Inserts a new element. If the element already exists and has the indexedView option set in the data model, then the old element will be renamed to element+1 and the new element inserted in its place.

#### Input Parameters:

Parameter	Type	Description
A	string	path

insert <A> after|before|first|last <B>

#### Command Description:

Insert a new element into an ordered list. The element is inserted before or after another element specifying key, or inserted as first/last entry

#### Input Parameters:

Parameter	Type	Description
A	string	path
B	string	for after before specif existing key in list

# 6.11 move commands

## 6.11.1 Command Tree

|-- [move <A> after|before|first|last <B>](#)

## 6.11.2 Commands

move <A> after|before|first|last <B>

### Command Description:

Move an existing element to a new position in an ordered list. The element can be moved first, last(default), before or after another element.

### Input Parameters:

Parameter	Type	Description
A	string	path
B	string	for after before specif existing key in list

## 6.12 no commands

### 6.12.1 Command Tree

|-- [no <A>](#)

### 6.12.2 Commands

no <A>

#### Command Description:

Negate a command or set its defaults

#### Input Parameters:

Parameter	Type	Description
A	string	path

## 6.13 pwd commands

### 6.13.1 Command Tree

|-- [pwd](#)

### 6.13.2 Commands

pwd

#### Command Description:

Display current mode path

## 6.14 rename commands

### 6.14.1 Command Tree

|-- [rename <A> <B>](#)

### 6.14.2 Commands

rename <A> <B>

#### Command Description:

Rename an instance.

#### Input Parameters:

Parameter	Type	Description
A	string	instance path
B	string	new id

## 6.15 resolved commands

### 6.15.1 Command Tree

|-- [resolved](#)

### 6.15.2 Commands

resolved

#### Command Description:

Issue this command when conflicts have been resolved.

Conflicts are normally discovered when the commit operation is performed.

Conflicts is the result of two users editing the same parts of a configuration

## 6.16 revert commands

### 6.16.1 Command Tree

|-- [revert <A>](#)

### 6.16.2 Commands

revert <A>

#### Command Description:

Copy configuration from running

#### Input Parameters:

Parameter	Type	Description
A	oneOf: no-confirm	no-confirm

## 6.17 show commands

### 6.17.1 Command Tree

```
-- show configuration <A>  
-- show configuration diff <A>  
-- show configuration merge <A>  
-- show configuration running <A>  
-- show full-configuration <A>  
-- show history <A>
```

### 6.17.2 Commands

show configuration <A>

#### Command Description:

Show current configuration buffer (i.e not committed modifications) The show command can be limited to a part of the configuratio by providing a `$!t;pathfilter>`

#### Input Parameters:

Parameter	Type	Description
A	string	specify a pathfilter, e.g: show configuration system show configuration system ntp ...

show configuration diff <A>

#### Command Description:

Show configuration changes in diff style, with running: i.e. new lines prefixed with a plus (+) sign, and removed lines prefixed with a minus (-) sign..

#### Input Parameters:

Parameter	Type	Description
-----------	------	-------------

---

A	string	specify a pathfilter, e.g: show configuration diff system show configuration diff system ntp ...
---	--------	---

show configuration merge <A>

**Command Description:**

Show current configuration changes merged with running.

**Input Parameters:**

Parameter	Type	Description
A	string	specify a pathfilter, e.g: show configuration merge system show configuration merge system ntp ...

show configuration running <A>

**Command Description:**

Show running configuration.

**Input Parameters:**

Parameter	Type	Description
A	string	specify a pathfilter, e.g: show configuration running system show configuration running system ntp ...

show full-configuration <A>

**Command Description:**

Show current configuration.

The show command can be limited to a part of the configuration by providing a <pathfilter>.

**Input Parameters:**

Parameter	Type	Description
A	string	specify a pathfilter, e.g: show full-configuration system show full-configuration system ntp ...

show history <A>

**Command Description:**

history of what has been executed before in config mode

**Input Parameters:**

Parameter	Type	Description
A	uint64	number of items to show

## 6.18 top commands

### 6.18.1 Command Tree

|-- [top <A>](#)

### 6.18.2 Commands

top <A>

#### Command Description:

Exit to top level and optionally run command

#### Input Parameters:

Parameter	Type	Description
A	string	command to run; e.g top commit

## 6.19 validate commands

### 6.19.1 Command Tree

|-- [validate](#)

### 6.19.2 Commands

validate

#### Command Description:

Validate current configuration

e.g giving an ip address that is not allowed (e.g must clause )

system ntp server piet udp address 0.0.0.0

(config)# validate

Failed: 'system ntp server piet udp address' (value "0.0.0.0"): Invalid NTP IPv4/IPv6 address

## 7. Macro Commands

### 7.1 equipment commands

#### 7.1.1 Command Tree

```
-- macro equipment-chassis-selftest-reset  
-- macro equipment-sfp-edit cage-id <A> interface-usage <B> sfp-model-number <C> als-enabled <D> tca-monitoring-enabled <E> tca-transceiver-link-profile-name <F> tca-transceiver-profile-name <G>  
-- macro equipment-sfp-get cage-id <A>  
-- macro equipment-sfp-get-config cage-id <A>  
-- macro equipment-sfp-transceiver-link-edit transceiver-link-name <A> transceiver-link-type <B> transceiver-name <C>  
-- macro equipment-sfp-transceiver-link-get transceiver-link-name <A>  
-- macro equipment-sfp-transceiver-link-get-config transceiver-link-name <A>
```

#### 7.1.2 Commands

macro equipment-chassis-selftest-reset

**Command Description:**

Reset chassis with selftest

macro equipment-sfp-edit cage-id <A> interface-usage <B> sfp-model-number <C> als-enabled <D> tca-monitoring-enabled <E> tca-transceiver-link-profile-name <F> tca-transceiver-profile-name <G>

**Command Description:**

Configure SFP, port and ethernet interface

**Input Parameters:**

Parameter	Description
A	Front panel cage id, it should be equal to the odd number which is printed under the cage
B	ethernet interface usage, it can be user-port/subtended-node-port/network-port

C	Model number of SFP plugged in the cage (model number can be a generic model-name or a dedicated 3FE number)
D	Indicates whether ALS is enabled or not for the transceiver. If not specified, it is implicitly enabled by default. The parameter only takes effect when enabled on optical SFP's.
E	Indicates whether transceiver's voltage, temperature, transceiver-link tca parameters rx-power,tx-power, bias-current monitoring is enabled or disabled for the transceiver
F	Name of the operator defined tca transceiver link profile
G	Name of the operator defined tca transceiver profile

macro equipment-sfp-get cage-id <A>

**Command Description:**

Retrieve operational data of the SFP

**Input Parameters:**

Parameter	Description
A	Front panel cage id, it should be equal the odd number which is printed under the cage

macro equipment-sfp-get-config cage-id <A>

**Command Description:**

Retrieve configuration data of the SFP

**Input Parameters:**

Parameter	Description
A	Front panel cage id, it should be equal the odd number which is printed under the cage

macro equipment-sfp-transceiver-link-edit transceiver-link-name <A> transceiver-link-type <B>  
transceiver-name <C>

**Command Description:**

Configure transceiver-link on the board

**Input Parameters:**

Parameter	Description
A	The name of transceiver-link
B	The type of transceiver-link
C	The name of transceiver

macro equipment-sfp-transceiver-link-get transceiver-link-name <A>

**Command Description:**

Retrieve operational data of the transceiver-link.

**Input Parameters:**

Parameter	Description
A	SFP transceive-link name

macro equipment-sfp-transceiver-link-get-config transceiver-link-name <A>

**Command Description:**

Retrieve configuration data of the transceiver-link

**Input Parameters:**

Parameter	Description
A	The name of transceiver-link

## 7.2 system commands

### 7.2.1 Command Tree

- |-- [macro system-alarms-active-get](#)
- |-- [macro system-alarms-control-clearance-delay-edit alarm-type-id <A> alarm-type-ns <B> clearance-delay <C> system-clearance-delay <D>](#)
- |-- [macro system-alarms-control-clearance-delay-get-config](#)
- |-- [macro system-alarms-control-clearance-delay-remove disable-system-clearance-delay <A> alarm-type-id <B> alarm-type-ns <C>](#)
- |-- [macro system-alarms-inventory-get](#)
- |-- [macro system-alarms-summary-get](#)
- |-- [macro system-callhome-certificates-edit netconf-client-name <A> ca-name <B>](#)
- |-- [macro system-callhome-certificates-fingerprints-edit fingerprint <A> id <B> map-type <C> netconf-client-name <D> name <E>](#)
- |-- [macro system-callhome-certificates-fingerprints-get-config netconf-client-name <A>](#)
- |-- [macro system-callhome-certificates-fingerprints-remove id <A> netconf-client-name <B>](#)
- |-- [macro system-callhome-certificates-get-config](#)
- |-- [macro system-callhome-configure-certificate-keystore-callhome-edit asymmetric-key-name <A> certificate-name <B> netconf-client-name <C>](#)
- |-- [macro system-callhome-configure-est-certificate-edit netconf-client-name <A> client-auth-est-profile-name <B> server-auth-est-profile-name <C>](#)
- |-- [macro system-callhome-configure-pma-edit endpoint-name <A> ip-address <B> netconf-client-name <C> port <D>](#)
- |-- [macro system-callhome-disable-remove](#)
- |-- [macro system-callhome-duid-get](#)
- |-- [macro system-callhome-enable-edit](#)
- |-- [macro system-callhome-get](#)
- |-- [macro system-callhome-get-config](#)
- |-- [macro system-callhome-install-certificate netconf-client-name <A> server-certificate <B>](#)
- |-- [macro system-callhome-install-private-key netconf-client-name <A>](#)
- |-- [macro system-callhome-local-definition-edit netconf-client-name <A>](#)
- |-- [macro system-callhome-local-definition-remove netconf-client-name <A>](#)
- |-- [macro system-callhome-restart](#)
- |-- [macro system-callhome-tls-hello-params-ciphers-edit cipher-id <A> netconf-client-name <B>](#)
- |-- [macro system-callhome-tls-hello-params-ciphers-get-config netconf-client-name <A>](#)
- |-- [macro system-callhome-tls-hello-params-ciphers-remove cipher-id <A> netconf-client-name <B>](#)
- |-- [macro system-callhome-tls-hello-params-edit cipher-id <A> netconf-client-name <B> version-id <C>](#)
- |-- [macro system-callhome-tls-hello-params-get-config netconf-client-name <A>](#)
- |-- [macro system-callhome-tls-hello-params-remove netconf-client-name <A>](#)
- |-- [macro system-callhome-tls-hello-params-versions-edit netconf-client-name <A> version-id <B>](#)
- |-- [macro system-callhome-tls-hello-params-versions-get-config netconf-client-name <A>](#)
- |-- [macro system-callhome-tls-hello-params-versions-remove netconf-client-name <A> version-id <B>](#)
- |-- [macro system-certificate-pinned-ca-edit certificate-key <A> certificate-list-name <B> certificate-name <C>](#)
- |-- [macro system-certificate-pinned-ca-get-config](#)
- |-- [macro system-certificate-pinned-ca-remove certificate-list-name <A>](#)
- |-- [macro system-date-time-timezone-get-config](#)
- |-- [macro system-date-time-timezone-name-edit timezone-name <A>](#)
- |-- [macro system-date-time-timezone-offset-edit timezone-utc-offset <A>](#)
- |-- [macro system-dns-get](#)
- |-- [macro system-host-id-edit host-id <A>](#)
- |-- [macro system-host-id-get-config](#)
- |-- [macro system-hostname-edit host-name <A>](#)

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```
-- macro system-inband-interface-lt-create interface-name <A> vlan-id <B>
-- macro system-inband-interface-lt-delete interface-name <A>
-- macro system-inband-ip-route-get interface-name <A>
-- macro system-inband-ip-route-get-config interface-name <A>
-- macro system-inband-ipv4-route-edit control-plane-protocol-name <A> interface-name <B> ipv4-address <C>
netmask <D> route-dest-prefix <E> route-next-hop <F> l2-term-interface <G> vlan-id <H> vlan-sub-interface <I>
-- macro system-inband-ipv4-route-remove control-plane-protocol-name <A> interface-name <B> ipv4-address <C>
route-dest-prefix <D>
-- macro system-inband-ipv6-route-edit control-plane-protocol-name <A> interface-name <B> ipv6-address <C>
prefix-length <D> route6-dest-prefix <E> route6-next-hop <F> l2-term-interface <G> vlan-id <H> vlan-sub-interface <I>
-- macro system-inband-ipv6-route-remove control-plane-protocol-name <A> interface-name <B> ipv6-address <C>
route6-dest-prefix <D>
-- macro system-info-system-mac-address-get
-- macro system-management-cli-ssh-ipitf-edit cli-ssh-ipitf-enabled <A>
-- macro system-management-debug-ssh-ipitf-edit debug-ssh-ipitf-enabled <A>
-- macro system-management-netconf-ssh-ipitf-edit netconf-ssh-ipitf-enabled <A>
-- macro system-persistent-connectivity-data-fetch-management-channel-information
-- macro system-persistent-connectivity-data-save
-- macro system-software-abort component <A> download-software-name <B> software-name <C>
-- macro system-software-abort-config-download component <A> downloaded-software-name <B> software-name <C>
-- macro system-software-abort-download-verify component <A> download-software-name <B> software-name <C>
-- macro system-software-activate component <A> download-software-name <B> software-name <C> default-datastore <D>
-- macro system-software-activation-history-get component <A> download-software-name <B>
-- macro system-software-activation-prediction-get component <A> download-software-name <B>
-- macro system-software-commit component <A> download-software-name <B> software-name <C>
-- macro system-software-config-download component <A> config-url <B> downloaded-software-name <C> mode-HTTPS <D> software-name <E> client-auth-est-profile-name <F> client-key-reference <G> client-public-key-reference <H> key-name <I> mTLS-with-EST <J> server-auth-est-profile-name <K> server-public-key <L>
-- macro system-software-config-download-status-get
-- macro system-software-details-get component <A> download-software-name <B>
-- macro system-software-download component <A> download-software-name <B> mode-HTTPS <C> software-name <D> url <E> client-auth-est-profile-name <F> client-key-reference <G> client-public-key-reference <H> key-name <I> mTLS-with-EST <J> server-auth-est-profile-name <K> server-public-key <L> verify-enable <M>
-- macro system-software-download-status-get component <A> software-name <B>
-- macro system-software-download-verify component <A> download-software-name <B> software-name <C>
-- macro system-software-edit enable <A> time <B>
-- macro system-software-get-config
-- macro system-software-software\_release-get
-- macro system-software-status-get component <A> software-name <B>
-- macro system-software-verify-revision-status-get component <A>
-- macro system-ssh-server-edit kex <A> serverhostkey <B>
-- macro system-ssh-server-get-config
-- macro system-ssh-server-keys-generate-hidden-key algorithm <A> host-key-name <B>
-- macro system-ssh-server-public-keys-get host-key-name <A>
-- macro system-ssh-server-remove
-- macro system-sztp-disable-edit
-- macro system-sztp-enable-edit
-- macro system-sztp-get
-- macro system-sztp-get-config
```

## 7.2.2 Commands

macro system-alarms-active-get

### Command Description:

Retrieve active alarms

macro system-alarms-control-clearance-delay-edit alarm-type-id <A> alarm-type-ns <B>  
clearance-delay <C> system-clearance-delay <D>

### Command Description:

Configure alarm clearance delay

### Input Parameters:

Parameter	Description
A	Identifies an alarm type. Only identities of concrete alarm types (present in the alarm inventory) can be configured. Usage of an abstract alarm type will be rejected. Refer to alarms guide or alarm-inventory for the available alarm types as well as for their namespaces. This parameter must be configured in combination with alarm-type-ns.
B	The namespace of configured alarm-type-id. Refer to alarms guide or alarm-inventory for the applicable namespace per alarm type id. This parameter must be configured in combination with alarm-type-id.
C	Define the minimum timeframe (range of 1..180 seconds) without toggling from cleared to active state for an alarm. Whenever such a transition is detected, the clearance of the alarm will be postponed. This value controls the delay of alarms clearance for a specific alarm-type, also could overrule the clearance delay configuration on system level. If there is no value in clearance-daley, clearance-delay-disable will be configured.
D	Define the minimum time (range of 1..180 seconds) without toggling from cleared to active state for an alarm. Whenever such a transition is detected, the clearance of the alarm will be postponed. This value have system wide impact (affects all the alarm type ids), in case that it is not configured it is considered as disabled on system level.

macro system-alarms-control-clearance-delay-get-config

### Command Description:

Retrieve alarm clearance delay

macro system-alarms-control-clearance-delay-remove disable-system-clearance-delay <A>  
alarm-type-id <B> alarm-type-ns <C>

**Command Description:**

Remove alarm clearance delay

**Input Parameters:**

Parameter	Description
A	Disable alarm clearance delay on system level, if it is set to true.
B	Identifies an alarm type. Only identities of concrete alarm types (present in the alarm inventory) can be configured. Usage of an abstract alarm type will be rejected. Refer to alarms guide or alarm-inventory for the available alarm types as well as for their namespaces. This parameter must be configured in combination with alarm-type-ns.
C	The namespace of configured alarm-type-id. Refer to alarms guide or alarm-inventory for the applicable namespace per alarm type id. This parameter must be configured in combination with alarm-type-id.

macro system-alarms-inventory-get

**Command Description:**

Retrieve alarm inventory

macro system-alarms-summary-get

**Command Description:**

Retrieve alarm summary

macro system-callhome-certificates-edit netconf-client-name <A> ca-name <B>

**Command Description:**

Configure client CA certificate information for callhome

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list
B	Name of pinned certificates list

macro system-callhome-certificates-fingerprints-edit fingerprint <A> id <B> map-type <C>  
netconf-client-name <D> name <E>

**Command Description:**

Add TLS fingerprints

**Input Parameters:**

Parameter	Description
A	Fingerprint of the root, intermediate, or client certificate of the NETCONF client that will initiate the call-home. A tls-fingerprint value is composed of a 1-octet hashing algorithm identifier followed by the fingerprint value. The first octet value identifying the hashing algorithm is taken from the IANA 'TLS HashAlgorithm Registry' (RFC 5246). The remaining octets are filled using the results of the hashing algorithm. For example, for SHA-256 (identifier 04), SHA-384 (identifier 05), and SHA-512 (identifier 06), the fingerprint value should follow the format (04:YY:YY:YY:....:YY), (05:YY:YY:YY:....:YY), and (06:YY:YY:YY:....:YY) respectively.
B	Id of fingerprint
C	Specifies how the NETCONF username is derived from the certificate. If the value is 'specified', the username is taken from the name field that is explicitly configured. If the value is 'san-rfc822-name', the username is derived from the rfc822Name (i.e email) field in the certificate's subjectAltName.
D	Name of NETCONF clients list.
E	The NETCONF username that is only defined when map-type is 'specified', allowing 1-11 characters with alphanumeric characters, underscores (_), and plus signs (+) only.

macro system-callhome-certificates-fingerprints-get-config netconf-client-name <A>

**Command Description:**

Retrieve TLS fingerprints

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list.

macro system-callhome-certificates-fingerprints-remove id <A> netconf-client-name <B>

**Command Description:**

Remove fingerprint with specific id

**Input Parameters:**

Parameter	Description
A	The id of the configured fingerprint
B	Name of NETCONF clients list.

macro system-callhome-certificates-get-config

**Command Description:**

Retrieve configured callhome certificate details

macro system-callhome-configure-certificate-keystore-callhome-edit asymmetric-key-name <A>  
certificate-name <B> netconf-client-name <C>

**Command Description:**

Configure certificate and private key information for callhome using keystore

**Input Parameters:**

Parameter	Description
A	Reference to keystore asymmetric key's name
B	Reference to keystore certificate's name
C	Name of NETCONF clients list

macro system-callhome-configure-est-certificate-edit netconf-client-name <A> client-auth-est-profile-name <B> server-auth-est-profile-name <C>

**Command Description:**

Configure EST Certificate and CA information for callhome

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list
B	The EST CA profile name to be used for Mutual TLS with the CallHome server
C	The EST profile name to be used for Mutual TLS with the CallHome server

macro system-callhome-configure-pma-edit endpoint-name <A> ip-address <B> netconf-client-name <C> port <D>

**Command Description:**

Configure static pma parameters for callhome

**Input Parameters:**

Parameter	Description
A	The name of specific endpoint
B	The IP address or hostname of the endpoint
C	Name of NETCONF clients list

D	The IP port for this endpoint
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macro system-callhome-disable-remove

**Command Description:**

Disable PMA callhome

macro system-callhome-duid-get

**Command Description:**

Retrieve device DUID identifier

macro system-callhome-enable-edit

**Command Description:**

Enable PMA callhome

macro system-callhome-get

**Command Description:**

Retrieve callhome state parameters

macro system-callhome-get-config

**Command Description:**

Retrieve configured callhome parameters

macro system-callhome-install-certificate netconf-client-name <A> server-certificate <B>

**Command Description:**

Install device certificate for callhome

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list, when replacing key/certificate the 'certificate_endpoint' name MUST be used
B	Device Certificate value to be used

macro system-callhome-install-private-key netconf-client-name <A>

**Command Description:**

Install private key for callhome. This command requires the collection of sensitive data in interactive mode

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list

macro system-callhome-local-definition-edit netconf-client-name <A>

**Command Description:**

Create the local-definition node

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list

macro system-callhome-local-definition-remove netconf-client-name <A>

**Command Description:**

Delete the local-definition node

**Input Parameters:**

Parameter	Description
A	Name of NETCONF clients list

macro system-callhome-restart

**Command Description:**

Restart callhome

macro system-callhome-tls-hello-params-ciphers-edit cipher-id <A> netconf-client-name <B>

**Command Description:**

Add TLS ciphers

**Input Parameters:**

Parameter	Description
A	YANG identifier of a TLS cipher to add
B	Name of the NETCONF client

macro system-callhome-tls-hello-params-ciphers-get-config netconf-client-name <A>

**Command Description:**

Retrieve TLS ciphers

**Input Parameters:**

Parameter	Description
A	Name of the NETCONF client

macro system-callhome-tls-hello-params-ciphers-remove cipher-id <A> netconf-client-name <B>

**Command Description:**

Remove TLS ciphers

**Input Parameters:**

Parameter	Description
A	YANG identifier of a TLS cipher to remove
B	Name of the NETCONF client

macro system-callhome-tls-hello-params-edit cipher-id <A> netconf-client-name <B> version-id <C>

**Command Description:**

Configure Callhome TLS Handshake parameters

**Input Parameters:**

Parameter	Description
A	YANG identifier of a TLS cipher to add
B	Name of the NETCONF client
C	YANG identifier of a TLS protocol version to add

macro system-callhome-tls-hello-params-get-config netconf-client-name <A>

**Command Description:**

Retrieve Callhome TLS Handshake parameters

**Input Parameters:**

Parameter	Description
A	Name of the NETCONF client

macro system-callhome-tls-hello-params-remove netconf-client-name <A>

**Command Description:**

Remove Callhome TLS Handshake parameters and restore defaults

**Input Parameters:**

Parameter	Description
A	Name of the NETCONF client

macro system-callhome-tls-hello-params-versions-edit netconf-client-name <A> version-id <B>

**Command Description:**

Add TLS versions

**Input Parameters:**

Parameter	Description
A	Name of the NETCONF client
B	YANG identifier of a TLS protocol version to add

macro system-callhome-tls-hello-params-versions-get-config netconf-client-name <A>

**Command Description:**

Retrieve TLS versions

**Input Parameters:**

Parameter	Description
A	Name of the NETCONF client

macro system-callhome-tls-hello-params-versions-remove netconf-client-name <A> version-id <B>

**Command Description:**

Remove TLS versions

**Input Parameters:**

Parameter	Description
A	Name of the NETCONF client
B	YANG identifier of a TLS protocol version to remove

macro system-certificate-pinned-ca-edit certificate-key <A> certificate-list-name <B> certificate-name <C>

**Command Description:**

Configure CA certificate

**Input Parameters:**

Parameter	Description
A	Certificate string
B	Certificate list name
C	Certificate name

macro system-certificate-pinned-ca-get-config

**Command Description:**

Retrieve configured CA certificates

macro system-certificate-pinned-ca-remove certificate-list-name <A>

**Command Description:**

Remove CA certificate

**Input Parameters:**

Parameter	Description
A	Certificate list name

macro system-date-time-timezone-get-config

**Command Description:**

Retrieve system timezone

macro system-date-time-timezone-name-edit timezone-name <A>

**Command Description:**

Configure system timezone name

**Input Parameters:**

Parameter	Description
A	Time zone name as used by the Time Zone Database

macro system-date-time-timezone-offset-edit timezone-utc-offset <A>

**Command Description:**

Configure system timezone offset

**Input Parameters:**

Parameter	Description
A	The number of minutes to add to UTC time to identify the time zone for this system

macro system-dns-get

**Command Description:**

Retrieve current DNS servers and search domains

macro system-host-id-edit host-id <A>

**Command Description:**

Configure the host id

**Input Parameters:**

Parameter	Description
A	The DSLAM id of the host

macro system-host-id-get-config

**Command Description:**

Retrieve system host id

macro system-hostname-edit host-name <A>

**Command Description:**

Configure hostname

**Input Parameters:**

Parameter	Description
A	The name for the host

macro system-inband-interface-lt-create interface-name <A> vlan-id <B>

**Command Description:**

Create inband management interface

**Input Parameters:**

Parameter	Description
A	Name of IP interface
B	Value of vlan-id

macro system-inband-interface-lt-delete interface-name <A>

**Command Description:**

Delete inband management interface

**Input Parameters:**

Parameter	Description
A	Name of IP interface

macro system-inband-ip-route-get interface-name <A>

**Command Description:**

Retrieve inband interface IP and Route state information

**Input Parameters:**

Parameter	Description
A	Name of inband interface

macro system-inband-ip-route-get-config interface-name <A>

**Command Description:**

Retrieve inband management IP address and route configuration

**Input Parameters:**

Parameter	Description
A	Name of inband interface

macro system-inband-ipv4-route-edit control-plane-protocol-name <A> interface-name <B>  
ipv4-address <C> netmask <D> route-dest-prefix <E> route-next-hop <F> l2-term-interface  
<G> vlan-id <H> vlan-sub-interface <I>

**Command Description:**

Configure static inband management IPv4 address, route and VLAN

**Input Parameters:**

Parameter	Description
A	The name of the control-plane protocol instance
B	Name of inband interface
C	Inband interface IPv4 address
D	Subnet mask
E	IPv4 destination prefix
F	Route next-hop
G	Name of l2 termination interface
H	Vlan value
I	Name of vlan sub-interface

macro system-inband-ipv4-route-remove control-plane-protocol-name <A> interface-name <B>  
ipv4-address <C> route-dest-prefix <D>

**Command Description:**

Remove static inband management IPv4 address and route

**Input Parameters:**

Parameter	Description
A	The name of the control-plane protocol instance
B	Name of inband interface
C	Inband interface IPv4 address
D	Route next-hop

macro system-inband-ipv6-route-edit control-plane-protocol-name <A> interface-name <B>  
ipv6-address <C> prefix-length <D> route6-dest-prefix <E> route6-next-hop <F> l2-term-  
interface <G> vlan-id <H> vlan-sub-interface <I>

**Command Description:**

Configure static inband management IPv6 address, route and VLAN

**Input Parameters:**

Parameter	Description
A	The name of the control-plane protocol instance
B	Name of inband interface
C	Inband interface IPv6 address
D	The length of the subnet prefix
E	IPv6 destination prefix
F	Route next-hop
G	Name of l2 termination interface

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H	Vlan value
I	Name of vlan sub-interface

macro system-inband-ipv6-route-remove control-plane-protocol-name <A> interface-name <B>  
ipv6-address <C> route6-dest-prefix <D>

**Command Description:**

Remove static inband management IPv6 address and route

**Input Parameters:**

Parameter	Description
A	The name of the control-plane protocol instance
B	Name of inband interface
C	Inband interface IPv6 address
D	IPv6 destination prefix

macro system-info-system-mac-address-get

**Command Description:**

Get system mac address

macro system-management-cli-ssh-ipitf-edit cli-ssh-ipitf-enabled <A>

**Command Description:**

Configure enabling of CLI/SSH via IPitf

**Input Parameters:**

Parameter	Description
A	Enables (True) or disables (False) CLI via IPforward interface

macro system-management-debug-ssh-ipitf-edit debug-ssh-ipitf-enabled <A>

**Command Description:**

Configure enabling of DEBUG/SSH via IPitf

**Input Parameters:**

Parameter	Description
A	Enables (True) or disables (False) DEBUG access via IPforward interface

macro system-management-netconf-ssh-ipitf-edit netconf-ssh-ipitf-enabled <A>

**Command Description:**

Configure enabling of NETCONF/SSH via IPitf

**Input Parameters:**

Parameter	Description
A	Enables (True) or disables (False) NETCONF access over SSH via IPforward interface

macro system-persistent-connectivity-data-fetch-management-channel-information

**Command Description:**

Fetch management channel information

macro system-persistent-connectivity-data-save

**Command Description:**

Save persistent connectivity data for inband connectivity

macro system-software-abort component <A> download-software-name <B> software-name <C>

**Command Description:**

Stop ongoing software download

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the on-going software download
C	Name of the application software

macro system-software-abort-config-download component <A> downloaded-software-name <B> software-name <C>

**Command Description:**

Stop ongoing configuration download

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the passive software downloaded
C	Name of the application.

macro system-software-abort-download-verify component <A> download-software-name <B> software-name <C>

**Command Description:**

Stop ongoing verification of software

**Input Parameters:**

Parameter	Description
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A	Name of the component, default must be Chassis.
B	Name of the passive software downloaded
C	Name of the application.

macro system-software-activate component <A> download-software-name <B> software-name <C> default-datastore <D>

**Command Description:**

Activate downloaded software

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the software to be activated
C	Name of the application software
D	Activation of software along with configuration DB clean-up.

macro system-software-activation-history-get component <A> download-software-name <B>

**Command Description:**

Retrieve activation history details of software.

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the software for which activation history is needed.

macro system-software-activation-prediction-get component <A> download-software-name <B>

**Command Description:**

Retrieve activation prediction details of software.

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the software for which activation prediction is needed.

macro system-software-commit component <A> download-software-name <B> software-name <C>

**Command Description:**

Commit activated software

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the software which needs to be committed
C	Name of the application software

macro system-software-config-download component <A> config-url <B> downloaded-software-name <C> mode-HTTPS <D> software-name <E> client-auth-est-profile-name <F> client-key-reference <G> client-public-key-reference <H> key-name <I> mTLS-with-EST <J> server-auth-est-profile-name <K> server-public-key <L>

**Command Description:**

Download configuration

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.

B	URL from which configuration download should be triggered.This URL can use either an IP address or a Fully Qualified Domain Name (FQDN).
C	Name of the software to be downloaded
D	Mode selection for download using https
E	Name of the application software
F	The PKI EST profile name to be used for mTLS download and configuration file encryption. This profile will be used for client authentication.
G	The client-key-reference that is going to be used for mTLS download and configuration file encryption
H	The client-public-key-reference that is going to be used for mTLS download and configuration file encryption
I	SSH key name to be used for key-based sftp download.
J	Indicates if PKI EST profile names should be used with mTLS during HTTPS-based download.
K	The PKI EST profile name to be used for mTLS download and configuration file encryption. This profile will be used for server authentication.
L	CA certificate of the server

macro system-software-config-download-status-get

**Command Description:**

Retrieve downloaded configuration file status

macro system-software-details-get component <A> download-software-name <B>

**Command Description:**

Retrieve software details of software revision.

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the software for which software details are needed.

macro system-software-download component <A> download-software-name <B> mode-HTTPS <C> software-name <D> url <E> client-auth-est-profile-name <F> client-key-reference <G> client-public-key-reference <H> key-name <I> mTLS-with-EST <J> server-auth-est-profile-name <K> server-public-key <L> verify-enable <M>

**Command Description:**

Download new software

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Operator chosen name to the software revision to be downloaded
C	Mode selection for download using https
D	Name of the (predefined) target software type
E	URL from which download should be triggered. This URL can use either an IP address or a Fully Qualified Domain Name (FQDN).
F	The PKI EST profile name to be used for mTLS download. This profile will be used for client authentication.
G	The client-key-reference that is going to be used for mTLS download
H	The client-public-key-reference to be used for mTLS download
I	SSH key name to be used for key-based sftp download.
J	Indicates if PKI EST profile names should be used with mTLS during HTTPS-based download.
K	The PKI EST profile name to be used for mTLS download. This profile will be used for server authentication.
L	CA certificate of the server
M	Enable or Disable verification of software after download.

macro system-software-download-status-get component <A> software-name <B>

**Command Description:**

Retrieve downloaded software status

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the application software

macro system-software-download-verify component <A> download-software-name <B>  
software-name <C>

**Command Description:**

Verify downloaded software

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the software to be activated
C	Name of the application software

macro system-software-edit enable <A> time <B>

**Command Description:**

Configure software rollback options on system

**Input Parameters:**

Parameter	Description
A	enable or disable software rollback on connectivity loss, default should be enable.
B	Indicates the delay between detection of connectivity loss and the actual triggering of the Lightspan application software rollback. The time can be configured from 5 minutes up to 120 minutes as allowed range, default should be 20.

macro system-software-get-config

**Command Description:**

Retrieve software rollback on connectivity loss configuration status on system

macro system-software-software\_release-get

**Command Description:**

Get running version of Lightspan software

macro system-software-status-get component <A> software-name <B>

**Command Description:**

Retrieve status of all software versions

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.
B	Name of the application software

macro system-software-verify-revision-status-get component <A>

**Command Description:**

Retrieve downloaded software verification status

**Input Parameters:**

Parameter	Description
A	Name of the component, default must be Chassis.

macro system-ssh-server-edit kex <A> serverhostkey <B>

**Command Description:**

Configure SSH server encryption method and key exchange algorithms

**Input Parameters:**

Parameter	Description
A	The supported key exchange algorithms (as long as their hash functions are implemented in libcrypto) are 'diffie-hellman-group18-sha512', 'diffie-hellman-group14-sha256', 'diffie-hellman-group-exchange-sha256', 'diffie-hellman-group-exchange-sha1', 'diffie-hellman-group14-sha1' and 'diffie-hellman-group1-sha1'.
B	The supported serverHostKey algorithms (if implemented in libcrypto) are 'ssh-dss' and 'ssh-rsa', but for any SSH server, it is limited to those algorithms for which there is a host key installed in the directory given by /confdConfig/aaa/sshServerKeyDir.

macro system-ssh-server-get-config

**Command Description:**

Retrieve SSH server encryption method and SSH key exchange algorithm

macro system-ssh-server-keys-generate-hidden-key algorithm <A> host-key-name <B>

**Command Description:**

Generate ssh server key-pair

**Input Parameters:**

Parameter	Description
A	The algorithm to be used when generating the asymmetric key.
B	An arbitrary name for this host-key

macro system-ssh-server-public-keys-get host-key-name <A>

**Command Description:**

Get SSH server public keys

**Input Parameters:**

Parameter	Description
A	The name of the algorithm to display the public key

macro system-ssh-server-remove

**Command Description:**

Restore SSH server encryption method and key exchange algorithms

macro system-sztp-disable-edit

**Command Description:**

Disable sZTP

macro system-sztp-enable-edit

**Command Description:**

Enable sZTP

macro system-sztp-get

**Command Description:**

Retrieve the device serial number

macro system-sztp-get-config

**Command Description:**

Retrieve sZTP configuration

## 7.3 transport commands

### 7.3.1 Command Tree

```
-- macro transport-cross-lt-lag-crosslt-Lag-active-active-mode-secondarynode-intrarelayport-edit inter-link-port-name <A> lag-member-port-name <B>
-- macro transport-cross-lt-lag-crosslt-Lag-active-active-mode-secondarynode-intrarelayport-remove lag-member-port-name <A>
-- macro transport-cross-lt-lag-lt-ne-edit cross-lt-lag-name <A> is-cross-lt-aggregator <B> primary-port-location-port-id <C> primary-port-location-slot-id <D> access-node-id <E> lag-port-admin-key <F> port-usage <G>
-- macro transport-cross-lt-lag-lt-ne-get-config cross-lt-lag-name <A>
-- macro transport-cross-lt-lag-member-port-edit actor-admin-state <A> lag-member-port-name <B> actor-port-priority <C> actor-system-priority <D> lag-port-admin-key <E>
-- macro transport-cross-lt-lag-member-port-get-config
-- macro transport-cross-lt-lag-member-port-remove lag-member-port-name <A>
-- macro transport-ethernet-interface-get enet-name <A> detailed-output <B>
-- macro transport-ethernet-interface-get-config enet-name <A> detailed-output <B>
-- macro transport-ethernet-lag-interface-get-config lag-port-admin-key <A>
-- macro transport-ethernet-lag-member-port-edit actor-admin-state <A> lag-member-port-name <B> actor-port-priority <C> actor-system-priority <D> lag-port-admin-key <E>
-- macro transport-ethernet-lag-member-port-get-config
-- macro transport-ethernet-lag-member-port-remove lag-member-port-name <A>
-- macro transport-ethernet-reset enet-name <A>
```

### 7.3.2 Commands

macro transport-cross-lt-lag-crosslt-Lag-active-active-mode-secondarynode-intrarelayport-edit  
inter-link-port-name <A> lag-member-port-name <B>

#### Command Description:

Configure Cross-LT LAG Active-Active member port reference to an intra-relay port interface

#### Input Parameters:

Parameter	Description
A	Name of the intra relay port interface (of type channelized-virtual-ethernet).
B	Name of the member port interface.

macro transport-cross-lt-lag-crosslt-Lag-active-active-mode-secondarynode-intrarelayport-  
remove lag-member-port-name <A>

#### Command Description:

Remove Cross-LT LAG Active-Active member port reference to an intra-relay port interface

**Input Parameters:**

Parameter	Description
A	Name of the member port interface.

macro transport-cross-lt-lag-lt-ne-edit cross-lt-lag-name <A> is-cross-lt-aggregator <B> primary-port-location-port-id <C> primary-port-location-slot-id <D> access-node-id <E> lag-port-admin-key <F> port-usage <G>

**Command Description:**

Create Modify Cross-LT LAG interface

**Input Parameters:**

Parameter	Description
A	The cross-lt-lag name in LT, must be same with the lag name in NT and must ensure the uniqueness in shelf level.
B	Configures/removes cross-lt lag parameters.Setting 'true' create a cross LT LAG interface.Setting 'false' modifies a cross LT LAG interface to intra-LT LAG interface.
C	The port index of the primary port in a cross-lt lag. primary-port-location-slot must also be configured.
D	The slot-id of the board hosting the primary port in a cross-lt lag. primary-port-location-port must also be configured.
E	This is typically the access-node-id of the node which hosts the primary port, defined in bbf-subscriber-profiles.
F	Admin-key of the lag interface.
G	Lag port interface usage.

macro transport-cross-lt-lag-lt-ne-get-config cross-lt-lag-name <A>

**Command Description:**

Retrieve cross-lt LAG interface configuration data

**Input Parameters:**

Parameter	Description
A	Cross-LT Lag interface name.

macro transport-cross-lt-lag-member-port-edit actor-admin-state <A> lag-member-port-name <B> actor-port-priority <C> actor-system-priority <D> lag-port-admin-key <E>

**Command Description:**

Configure member port to cross lt LAG interface

**Input Parameters:**

Parameter	Description
A	The admin status of a Aggregation Port.
B	Name of the member port interface.
C	The priority value assigned to this Aggregation Port.
D	Defines the priority value associated with the Actors System ID.
E	Admin-key of a lag interface.

macro transport-cross-lt-lag-member-port-get-config

**Command Description:**

Retrieve member ports configuration data

macro transport-cross-lt-lag-member-port-remove lag-member-port-name <A>

**Command Description:**

Remove member port from cross lt LAG interface

**Input Parameters:**

Parameter	Description
-----------	-------------

---

A	Name of the member port interface.
---	------------------------------------

macro transport-ethernet-interface-get enet-name <A> detailed-output <B>

**Command Description:**

Retrieve ethernet interface operational data

**Input Parameters:**

Parameter	Description
A	Name of the port thats needs to be configured. (interface name should be ETH1~36)
B	provides detailed(operational data) when enabled and only interface names when disabled.

macro transport-ethernet-interface-get-config enet-name <A> detailed-output <B>

**Command Description:**

Retrieve ethernet interface configuration data

**Input Parameters:**

Parameter	Description
A	Name of the port thats needs to be configured. (interface name should be ETH-1~36)
B	provides detailed(operational data) when enabled and only interface names when disabled.

macro transport-ethernet-lag-interface-get-config lag-port-admin-key <A>

**Command Description:**

Retrieve LAG interface configuration data

**Input Parameters:**

Parameter	Description
A	Admin-key of a lag interface.This parameter is used to derive the lag interface name.

macro transport-ethernet-lag-member-port-edit actor-admin-state <A> lag-member-port-name <B> actor-port-priority <C> actor-system-priority <D> lag-port-admin-key <E>

**Command Description:**

Configure member port to LAG interface

**Input Parameters:**

Parameter	Description
A	The admin status of a Aggregation Port.
B	Name of the member port interface.
C	The priority value assigned to this Aggregation Port.
D	Defines the priority value associated with the Actors System ID.
E	Admin-key of a lag interface.

macro transport-ethernet-lag-member-port-get-config

**Command Description:**

Retrieve member ports configuration data

macro transport-ethernet-lag-member-port-remove lag-member-port-name <A>

**Command Description:**

Remove member port from LAG interface

**Input Parameters:**

Parameter	Description
A	Name of the member port interface.

macro transport-ethernet-reset enet-name <A>

**Command Description:**

Reset the statistics related to a interface

**Input Parameters:**

Parameter	Description
A	Name of the port thats needs to be configured. interface name should be ETH-1~36