Modicon

MCSESM, MCSESM-E Managed Switch
Command Line Interface (CLI) Reference Manual

QGH59098.00

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer must perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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Contents

Safety information

Note: Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Note: Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

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First login (Password change)

Perform the following steps:

- ☐ Open the Graphical User Interface, the Command Line Interface, or Schneider Electric Viewer the first time you log on to the device.
- ☐ Log on to the device with the default password “private”. The device prompts you to type in a new password.
- ☐ Type in your new password.
- ☐ To help increase security, choose a password that contains at least 8 characters which includes upper-case characters, lower-case characters, numerical digits, and special characters.
- ☐ The device prompts you to confirm you new password.
- ☐ Log on to the device again with your new password.

Note: If you lost your password, then use the System Monitor to reset the password.

About this Manual

The “Installation” user manual contains a device description, safety instructions, a description of the display, and the other information that you need to install the device.

The “Configuration” user manual contains the information you need to start operating the device. It takes you step by step from the first startup operation through to the basic settings for operation in your environment.

The “Graphical User Interface” reference manual contains detailed information on using the graphical user interface to operate the individual functions of the device.

The “Command Line Interface” reference manual contains detailed information on using the Command Line Interface to operate the individual functions of the device.

The ConneXium Network Manager Network Management software provides you with additional options for smooth configuration and monitoring:

- Auto-topology discovery
- Browser interface
- Client/server structure
- Event handling
- Event log
- Simultaneous configuration of multiple devices
- Graphical user interface with network layout
- SNMP/OPC gateway

1 Address Conflict Detection (ACD)

1.1 address-conflict

Configure the address conflict settings.

1.1.1 address-conflict operation

Enable or disable the address conflict detection for the management interface.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict operation`

no address-conflict operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no address-conflict operation`

1.1.2 address-conflict detection-mode

Configure the detection mode.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict detection-mode <P-1>`

Parameter	Value	Meaning
`P-1`	`active-and-passive`	Configure active and passive detection. During the IP address configuration, if you set the detection to 'active', then the device sends ARP or NDP probes into the network, and if you set the detection to 'passive', then the device listens continuously on the network.
	`active-only`	Configure only active detection. During IP address configuration 'active' the device sends only one ARP or NDP probe into the network.
	`passive-only`	Configure passive detection. The device listens passively on the network to verify that another device does not have the same IP address assigned.

1.1.3 address-conflict detection-ongoing

Enable or disable the ongoing detection. If enabled, the device sends periodic ARP or NDP probes.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict detection-ongoing`

no address-conflict detection-ongoing

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no address-conflict detection-ongoing`

1.1.4 address-conflict delay

The maximum detection delay time in milliseconds. Time gap between ARP or NDP probes.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict delay <P-1>`

Parameter	Value	Meaning
`P-1`	`20..500`	Time gap between consecutive ARP or NDP probes ([ms], default 200).

1.1.5 address-conflict release-delay

Delay in seconds to the next ARP or NDP probe cycle after an IP address conflict was detected.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict release-delay <P-1>`

Parameter	Value	Meaning
`P-1`	`3..3600`	Delay between consecutive probe cycles after a conflict was detected ([sec], default 15).

1.1.6 address-conflict max-protection

Maximum number of frequent address protections.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict max-protection <P-1>`

Parameter	Value	Meaning
`P-1`	`0..100`	Maximum number of frequent address protections (default 1).

1.1.7 address-conflict protect-interval

Delay in milliseconds between two consecutive address protections.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict protect-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`20..10000`	Delay between two consecutive protections ([ms], default 10000).

1.1.8 address-conflict trap-status

If enabled, this trap reports an address conflict.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `address-conflict trap-status`

no address-conflict trap-status

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no address-conflict trap-status`

1.2 show

Display device options and settings.

1.2.1 show address-conflict global

Display the component mode.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show address-conflict global`

1.2.2 show address-conflict detected

Display the last detected address conflict.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show address-conflict detected`

1.2.3 show address-conflict fault-state

Display the current conflict status.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show address-conflict fault-state`

2 Access Control List (ACL)

2.1 mac

Set MAC parameters.

2.1.1 mac access-list extended name

Create a MAC access-list.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac access-list extended name <P-1> deny src <P-2> dst <P-3> [ethertype <P-4>] [vlan <P-5> <P-6>] [cos <P-7>] [log] [time-range <P-8>] permit src <P-9> dst <P-10> [ethertype <P-11>] [vlan <P-12> <P-13>] [cos <P-14>] [time-range <P-15>] [assign-queue <P-16>] [mirror <P-17>] [rate-limit <P-18> <P-19>] [redirect <P-20>] [rate-limit <P-21> <P-22>]`

`deny`: Create a new rule for the current MAC access-list: Specify packets to reject.

`src`: Specify the source MAC and Mask.

`dst`: Specify the destination MAC and Mask

`[ethertype]`: Specify the EtherType

`[vlan]`: Configure a match condition based on a VLAN ID.

`[cos]`: Configure a match condition based on a COS value(VLAN priority).

`[log]`: Enable logging.

`[time-range]`: Activate the rule at an absolute time or periodically.

`permit`: Create a new rule for the current MAC access-list: Specify packets to forward.

`src`: Specify source MAC and Mask

`dst`: Specify the destination MAC and Mask

`[ethertype]`: Specify the Ethertype

`[vlan]`: Configure a match condition based on a VLAN ID.

`[cos]`: Set COS field

`[time-range]`: Activate the rule at an absolute time or periodically.

`[assign-queue]`: Configure the User Priority (VLAN priority)assignment attribute.

`[mirror]`: Set Mirror Interface.

`[rate-limit]`: Set rate limit and burst size.

[redirect]: Set Redirect Interface.

[rate-limit]: Set rate limit and burst size.

Parameter	Value	Meaning
P-1	string	<name> ACL name.
P-2	any	Enter for any source mac address and mask.
	srcmac-macmask	Enter source MAC and source MAC mask.
P-3	any	Enter for any destination mac address and mask.
	destmac-macmask	Enter destination MAC and destination MAC mask.
P-4	0x0600-0xffff	Ethertype value
	appletalk	Appletalk
	arp	ARP
	ibmsna	IBMSNA
	ipv4	IPv4
	ipv6	IPv6
	ipx-old	IPX-OLD
	mplsmcast	MPLS Multicast
	mplsucast	MPLS Unicast
	netbios	NetBIOS
	novell	NOVELL
	pppoe	PPPoE
	rarp	RARP
P-5	eq	Specify VLAN value.
P-6	1..4042	Enter the VLAN ID.
P-7	0..7	COS
P-8	string	<name> Time-range name
P-9	any	Enter for any source mac address and mask.
	srcmac-macmask	Enter source MAC and source MAC mask.
P-10	any	Enter for any destination mac address and mask.
	destmac-macmask	Enter destination MAC and destination MAC mask.
P-11	0x0600-0xffff	Ethertype value
	appletalk	Appletalk
	arp	ARP
	ibmsna	IBMSNA
	ipv4	IPv4
	ipv6	IPv6
	ipx-old	IPX-OLD
	mplsmcast	MPLS Multicast
	mplsucast	MPLS Unicast
	netbios	NetBIOS
	novell	NOVELL
	pppoe	PPPoE
	rarp	RARP
P-12	eq	Specify VLAN value.

Parameter	Value	Meaning
P-13	1..4042	Enter the VLAN ID.
P-14	0..7	COS
P-15	string	<name> Time-range name
P-16	0..7	User priority (VLAN priority).
P-17	slot no./port no.	
P-18	0..10000000	Committed rate value, specified in kbps.
P-19	0..128	Committed burst size value, specified in kbytes.
P-20	slot no./port no.	
P-21	0..10000000	Committed rate value, specified in kbps.
P-22	0..128	Committed burst size value, specified in kbytes.

2.1.2 mac access-list extended rename

Rename an existing MAC access-list
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac access-list extended rename <P-1> <P-2>`

Parameter	Value	Meaning
P-1	string	<name> ACL name.
P-2	string	<name> ACL name.

2.1.3 mac access-list extended del

Delete a MAC access-list.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac access-list extended del <P-1>`

Parameter	Value	Meaning
P-1	string	<name> ACL name.

2.1.4 mac access-group name

Associate an ACL identified by name with a VLAN ID.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac access-group name <P-1> vlan <P-2> <P-3> [sequence <P-4>]`

`vlan`: VLAN ID

`[sequence]`: Indicate the sequence number

Parameter	Value	Meaning
`P-1`	`string`	<name> ACL name.
`P-2`	`1..4042`	Enter the VLAN ID.
`P-3`	`in`	Inbound direction.
	`out`	Outbound direction.
`P-4`	`1..4294967295`	Sequence

no mac access-group name

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no mac access-group name <P-1> vlan [sequence]`

2.1.5 mac access-group del

Disassociate an ACL identified by name with a VLAN ID.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac access-group del <P-1> vlan <P-2> <P-3> [sequence <P-4>]`

`vlan`: VLAN ID

`[sequence]`: Indicate the sequence number

Parameter	Value	Meaning
`P-1`	`string`	<name> ACL name.
`P-2`	`1..4042`	Enter the VLAN ID.
`P-3`	`in`	Inbound direction.
	`out`	Outbound direction.
`P-4`	`1..4294967295`	Sequence

no mac access-group del

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no mac access-group del <P-1> vlan [sequence]`

2.2 mac

MAC interface commands.

2.2.1 mac access-group name

Associate a specific MAC access-list identified by name with an interface, in a given direction.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `mac access-group name <P-1> <P-2> [sequence <P-3>]`

`[sequence]`: Indicate the sequence number

Parameter	Value	Meaning
`P-1`	`string`	<name> ACL name.
`P-2`	`in`	Inbound direction.
	`out`	Outbound direction.
`P-3`	`1..4294967295`	Sequence

no mac access-group name

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no mac access-group name <P-1> [sequence]`

2.2.2 mac access-group del

Remove a specific MAC access-list identified by name from an interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `mac access-group del <P-1> <P-2> [sequence <P-3>]`

`[sequence]`: Indicate the sequence number

Parameter	Value	Meaning
`P-1`	`string`	<name> ACL name.
`P-2`	`in`	Inbound direction.
	`out`	Outbound direction.
`P-3`	`1..4294967295`	Sequence

no mac access-group del

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no mac access-group del <P-1> <P-2> [sequence]`

2.3 ip

Set IP parameters.

2.3.1 ip access-list extended name

Create an IP access-list.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `ip access-list extended name <P-1> deny src <P-2> [<P-3> <P-4>] dst <P-5> [<P-6> <P-7>] [proto <P-8>] [flag [<P-9>] [<P-10>] [<P-11>] [<P-12>] [<P-13>] [<P-14>] [<P-15>]] [icmp-type <P-16>] [icmp-code <P-17>] [igmp-type <P-18>] [fragments] [precedence <P-19>] [log] [time-range <P-20>] [assign-queue <P-21>] [tos <P-22> <P-23>] [log] [time-range <P-24>] [assign-queue <P-25>] [dscp <P-26>] [log] [time-range <P-27>] [assign-queue <P-28>] every [log] [time-range <P-29>] [assign-queue <P-30>] permit src <P-31> [<P-32> <P-33>] dst <P-34> [<P-35> <P-36>] [proto <P-37>] [flag [<P-38>] [<P-39>] [<P-40>] [<P-41>] [<P-42>] [<P-43>] [<P-44>]] [icmp-type <P-45>] [icmp-code <P-46>] [igmp-type <P-47>] [fragments] [precedence <P-48>] [time-range <P-49>] [mirror <P-50>] [rate-limit <P-51> <P-52>] [redirect <P-53>] [rate-limit <P-54> <P-55>] [tos <P-56> <P-57>] [time-range <P-58>] [assign-queue <P-59>] [mirror <P-60>] [rate-limit <P-61> <P-62>] [redirect <P-63>] [rate-limit <P-64> <P-65>] [dscp <P-66>] [time-range <P-67>] [assign-queue <P-68>] [mirror <P-69>] [rate-limit <P-70> <P-71>] [redirect <P-72>] [rate-limit <P-73> <P-74>] every [time-range <P-75>] [assign-queue <P-76>] [mirror <P-77>] [rate-limit <P-78> <P-79>] [redirect <P-80>] [rate-limit <P-81> <P-82>]`

`deny`: Create a new rule for the current IP access-list: Specify packets to reject.

`src`: Specify the source IP and Mask

`dst`: Specify the destination IP and Mask

`[proto]`: Specify the protocol

`[flag]`: Specify TCP flag.

`[icmp-type]`: Specify ICMP type.

`[icmp-code]`: Specify ICMP code

`[igmp-type]`: Specify IGMP type.

`[fragments]`: Specify if rule matches on fragmented IP packets.

`[precedence]`: Precedence

`[log]`: Enable logging

`[time-range]`: Activate the rule at an absolute time or periodically.

`[assign-queue]`: Configure the User Priority (VLAN priority)assignment attribute.

`[tos]`: TOS

[log]: Enable logging

[time-range]: Activate the rule at an absolute time or periodically.

[assign-queue]: Configure the User Priority (VLAN priority)assignment attribute.

[dscp]: DSCP

[log]: Enable logging

[time-range]: Activate the rule at an absolute time or periodically.

[assign-queue]: Configure the User Priority (VLAN priority)assignment attribute.

every: Every packet regardless the content.

[log]: Enable logging

[time-range]: Activate the rule at an absolute time or periodically.

[assign-queue]: Configure the User Priority (VLAN priority)assignment attribute.

permit: Create a new rule for the current IP access-list: Specify packets to forward.

src: Specify the source IP and Mask

dst: Specify destination IP and Mask

[proto]: Specify the protocol

[flag]: Specify TCP flag.

[icmp-type]: Specify ICMP type.

[icmp-code]: Specify ICMP code

[igmp-type]: Specify IGMP type.

[fragments]: Specify if rule matches on fragmented IP packets.

[precedence]: Precedence

[time-range]: Activate the rule at an absolute time or periodically.

[mirror]: Set Mirror Interface

[rate-limit]: Set rate limit and burst size.

[redirect]: Set Redirect Interface

[rate-limit]: Set rate limit and burst size.

[tos]: TOS

[time-range]: Activate the rule at an absolute time or periodically.

[assign-queue]: Configure the User Priority (VLAN priority)assignment attribute.

[mirror]: Set Mirror Interface

[rate-limit]: Set rate limit and burst size.

[redirect]: Set Redirect Interface

[rate-limit]: Set rate limit and burst size.

[dscp]: DSCP

[time-range]: Activate the rule at an absolute time or periodically.

[assign-queue]: Configure the User Priority (VLAN priority)assignment attribute.

[mirror]: Set Mirror Interface

[rate-limit]: Set rate limit and burst size.

[redirect]: Set Redirect Interface

[rate-limit]: Set rate limit and burst size.

every: Every packet regardless the content.

[time-range]: Activate the rule at an absolute time or periodically.

[assign-queue]: Configure the User Priority (VLAN priority)assignment attribute.

[mirror]: Set Mirror Interface

[rate-limit]: Set rate limit and burst size.

[redirect]: Set Redirect Interface

[rate-limit]: Set rate limit and burst size.

Parameter	Value	Meaning
P-1	string	<name> ACL name.
P-2	any	Enter for any source ip address and mask.
	a.b.c.d-e.f.g.h	Source IP address and mask (mask in wild-card notation) e.g 192.168.1.1-0.0.0.255.
P-3	eq	Specify value that port number must be equal to.
	neq	Specify value that port number must not be equal to.
	lt	Specify value that port number must be less than.
	gt	Specify value that port number must be greater than.
P-4	domain	Domain
	echo	Echo
	ftp	FTP
	ftpdata	FTP Data
	http	HTTP
	smtp	SMTP
	snmp	SNMP
	telnet	Telnet
	tftp	TFTP
	www	WWW
	1-65535	Port number
P-5	any	Enter for any destination ip address and mask.
	a.b.c.d-e.f.g.h	Destination IP address and mask (mask in wild-card notation) e.g 192.168.1.1-0.0.0.255.
P-6	eq	Specify value that port number must be equal to.
	neq	Specify value that port number must not be equal to.
	lt	Specify value that port number must be less than.
	gt	Specify value that port number must be greater than.
P-7	domain	Domain
	echo	Echo
	ftp	FTP
	ftpdata	FTP Data
	http	HTTP
	smtp	SMTP
	snmp	SNMP
	telnet	Telnet
	tftp	TFTP
	www	WWW
	1-65535	Port number

Parameter	Value	Meaning
P-8	icmp	ICMP
	igmp	IGMP
	ip-in-ip	IP-in-IP
	tcp	TCP
	udp	UDP
	ip	Any IP protocol
	1-255	Protocol number
P-9	-fin	Match occurs if fin flag is not set in the TCP header.
	+fin	Match occurs if fin flag is set in the TCP header.
P-10	-syn	Match occurs if syn flag is not set in the TCP header.
	+syn	Match occurs if syn flag is set in the TCP header.
P-11	-rst	Match occurs if rst flag is not set in the TCP header.
	+rst	Match occurs if rst flag is set in the TCP header.
P-12	-psh	Match occurs if psh flag is not set in the TCP header.
	+psh	Match occurs if psh flag is set in the TCP header.
P-13	-ack	Match occurs if ack flag is not set in the TCP header.
	+ack	Match occurs if ack flag is set in the TCP header.
P-14	-urg	Match occurs if urg flag is not set in the TCP header.
	+urg	Match occurs if urg flag is set in the TCP header.
P-15	established	Match occurs if the specified RST and ACK bits are set in TCP header.
P-16	0..255	ICMP type value.
P-17	0..255	ICMP code value.
P-18	0..255	IGMP code value.
P-19	0..7	IP Precedence
P-20	string	<name> Time-range name
P-21	0..7	User priority (VLAN priority).
P-22	0..255	TOS
P-23	0..255	TOS Mask
P-24	string	<name> Time-range name
P-25	0..7	User priority (VLAN priority).
P-26	0..63	DSCP
P-27	string	<name> Time-range name
P-28	0..7	User priority (VLAN priority).
P-29	string	<name> Time-range name
P-30	0..7	User priority (VLAN priority).
P-31	any	Enter for any source ip address and mask.
	a.b.c.d-e.f.g.h	Source IP address and mask (mask in wild-card notation) e.g 192.168.1.1-0.0.0.255.
P-32	eq	Specify value that port number must be equal to.
	neq	Specify value that port number must not be equal to.
	lt	Specify value that port number must be less than.
	gt	Specify value that port number must be greater than.

Parameter	Value	Meaning
P-33	domain	Domain
	echo	Echo
	ftp	FTP
	ftpdata	FTP Data
	http	HTTP
	smtp	SMTP
	snmp	SNMP
	telnet	Telnet
	tftp	TFTP
	www	WWW
	1-65535	Port number
P-34	any	Enter for any destination ip address and mask.
	a.b.c.d-e.f.g.h	Destination IP address and mask (mask in wild-card notation) e.g 192.168.1.1-0.0.0.255.
P-35	eq	Specify value that port number must be equal to.
	neq	Specify value that port number must not be equal to.
	lt	Specify value that port number must be less than.
	gt	Specify value that port number must be greater than.
P-36	domain	Domain
	echo	Echo
	ftp	FTP
	ftpdata	FTP Data
	http	HTTP
	smtp	SMTP
	snmp	SNMP
	telnet	Telnet
	tftp	TFTP
	www	WWW
	1-65535	Port number
P-37	icmp	ICMP
	igmp	IGMP
	ip-in-ip	IP-in-IP
	tcp	TCP
	udp	UDP
	ip	Any IP protocol
	1-255	Protocol number
P-38	-fin	Match occurs if fin flag is not set in the TCP header.
	+fin	Match occurs if fin flag is set in the TCP header.
P-39	-syn	Match occurs if syn flag is not set in the TCP header.
	+syn	Match occurs if syn flag is set in the TCP header.
P-40	-rst	Match occurs if rst flag is not set in the TCP header.
	+rst	Match occurs if rst flag is set in the TCP header.

Parameter	Value	Meaning
P-41	-psh	Match occurs if psh flag is not set in the TCP header.
	+psh	Match occurs if psh flag is set in the TCP header.
P-42	-ack	Match occurs if ack flag is not set in the TCP header.
	+ack	Match occurs if ack flag is set in the TCP header.
P-43	-urg	Match occurs if urg flag is not set in the TCP header.
	+urg	Match occurs if urg flag is set in the TCP header.
P-44	established	Match occurs if the specified RST and ACK bits are set in TCP header.
P-45	0..255	ICMP type value.
P-46	0..255	ICMP code value.
P-47	0..255	IGMP code value.
P-48	0..7	IP Precedence
P-49	string	<name> Time-range name
P-50	slot no./port no.	
P-51	0..10000000	Committed rate value, specified in kbps.
P-52	0..128	Committed burst size value, specified in kbytes.
P-53	slot no./port no.	
P-54	0..10000000	Committed rate value, specified in kbps.
P-55	0..128	Committed burst size value, specified in kbytes.
P-56	0..255	TOS
P-57	0..255	TOS Mask
P-58	string	<name> Time-range name
P-59	0..7	User priority (VLAN priority).
P-60	slot no./port no.	
P-61	0..10000000	Committed rate value, specified in kbps.
P-62	0..128	Committed burst size value, specified in kbytes.
P-63	slot no./port no.	
P-64	0..10000000	Committed rate value, specified in kbps.
P-65	0..128	Committed burst size value, specified in kbytes.
P-66	0..63	DSCP
P-67	string	<name> Time-range name
P-68	0..7	User priority (VLAN priority).
P-69	slot no./port no.	
P-70	0..10000000	Committed rate value, specified in kbps.
P-71	0..128	Committed burst size value, specified in kbytes.
P-72	slot no./port no.	
P-73	0..10000000	Committed rate value, specified in kbps.
P-74	0..128	Committed burst size value, specified in kbytes.
P-75	string	<name> Time-range name
P-76	0..7	User priority (VLAN priority).
P-77	slot no./port no.	
P-78	0..10000000	Committed rate value, specified in kbps.
P-79	0..128	Committed burst size value, specified in kbytes.

Parameter	Value	Meaning
P-80	slot no./port no.	
P-81	0..10000000	Committed rate value, specified in kbps.
P-82	0..128	Committed burst size value, specified in kbytes.

no ip access-list extended name

Disable the option

- Mode: Global Config Mode
- Privilege Level: Operator
- Format: no ip access-list extended name <P-1> deny src dst [proto] [flag] [icmp-type] [icmp-code] [igmp-type] [fragments] [precedence] [log] [time-range] [assign-queue] [tos] [log] [time-range] [assign-queue] [dscp] [log] [time-range] [assign-queue] every [log] [time-range] [assign-queue] permit src dst [proto] [flag] [icmp-type] [icmp-code] [igmp-type] [fragments] [precedence] [time-range] [mirror] [rate-limit] [redirect] [rate-limit] [tos] [time-range] [assign-queue] [mirror] [rate-limit] [redirect] [rate-limit] [dscp] [time-range] [assign-queue] [mirror] [rate-limit] [redirect] [rate-limit] every [time-range] [assign-queue] [mirror] [rate-limit] [redirect] [rate-limit]

2.3.2 ip access-list extended rename

Rename an existing IP access-list.

- Mode: Global Config Mode
- Privilege Level: Operator
- Format: ip access-list extended rename <P-1> <P-2>

Parameter	Value	Meaning
P-1	string	<name> ACL name.
P-2	string	<name> ACL name.

2.3.3 ip access-list extended del

Delete an IP access-list.

- Mode: Global Config Mode
- Privilege Level: Operator
- Format: ip access-list extended del <P-1>

Parameter	Value	Meaning
P-1	string	<name> ACL name.

2.3.4 ip access-group name

Associate an ACL identified by name with a VLAN ID.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `ip access-group name <P-1> vlan <P-2> <P-3> [sequence <P-4>]`

`vlan`: VLAN ID

`[sequence]`: Indicate the sequence number

Parameter	Value	Meaning
P-1	string	<name> ACL name.
P-2	1..4042	Enter the VLAN ID.
P-3	in	Inbound direction.
	out	Outbound direction.
P-4	1..4294967295	Sequence

no ip access-group name

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no ip access-group name <P-1> vlan [sequence]`

2.3.5 ip access-group del

Disassociate an ACL identified by name with a VLAN ID.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `ip access-group del <P-1> vlan <P-2> <P-3> [sequence <P-4>]`

`vlan`: VLAN ID

`[sequence]`: Indicate the sequence number

Parameter	Value	Meaning
P-1	string	<name> ACL name.
P-2	1..4042	Enter the VLAN ID.
P-3	in	Inbound direction.
	out	Outbound direction.
P-4	1..4294967295	Sequence

no ip access-group del

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no ip access-group del <P-1> vlan [sequence]`

2.4 ip

IP interface commands.

2.4.1 ip access-group name

Associate a specific IP access-list identified by name with an interface, in a given direction.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `ip access-group name <P-1> <P-2> [sequence <P-3>]`

`[sequence]`: Indicate the order

Parameter	Value	Meaning
`P-1`	`string`	<name> ACL name.
`P-2`	`in`	Inbound direction.
	`out`	Outbound direction.
`P-3`	`1..4294967295`	Sequence

no ip access-group name

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no ip access-group name <P-1> <P-2> [sequence]`

2.4.2 ip access-group del

Remove a specific IP access-list identified by name from an interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `ip access-group del <P-1> <P-2> [sequence <P-3>]`

`[sequence]`: Indicate the order

Parameter	Value	Meaning
`P-1`	`string`	<name> ACL name.
`P-2`	`in`	Inbound direction.
	`out`	Outbound direction.
`P-3`	`1..4294967295`	Sequence

no ip access-group del

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no ip access-group del <P-1> <P-2> [sequence]`

2.5 show

Display device options and settings.

2.5.1 show access-list global

Display the next free index for both MAC and IPv4 based access lists.
- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show access-list global`

2.5.2 show access-list mac

Display the information for a specific MAC based access list.
- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show access-list mac [<P-1> [<P-2>]]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	
`P-2`	`1..1023`	Access-list rule index.

2.5.3 show access-list ip

Display the information for a specific IP based access list.
- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show access-list ip [<P-1> [<P-2>]]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	
`P-2`	`1..1023`	Access-list rule index.

2.5.4 show access-list assignment ip

Display the assignments of existing IP ACLs.
- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show access-list assignment ip <P-1>`

Parameter	Value	Meaning
`P-1`	`1000..1099`	Access-list index.

2.5.5 show access-list assignment mac

Display the assignments of existing MAC ACLs.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show access-list assignment mac <P-1>`

Parameter	Value	Meaning
`P-1`	`10000..10099`	Access-list index.

3 Application Lists

3.1 appllists

Configure an application list.

3.1.1 appllists set-authlist

Set an authentication list reference that shall be used by given application.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `appllists set-authlist <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<application> Name of an application list.
`P-2`	`string`	<authlist_name> Name of referenced authentication list.

3.1.2 appllists enable

Activate a login application list.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `appllists enable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<application> Name of an application list.

3.1.3 appllists disable

Deactivate a login application list.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `appllists disable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<application> Name of an application list.

3.2 show

Display device options and settings.

3.2.1 show appllists

Display the ordered methods for application lists.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show appllists`

4 Authentication Lists

4.1 authlists

Configure an authentication list.

4.1.1 authlists add

Create a new login authentication list.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `authlists add <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<authlist_name> Name of an authentication list.

4.1.2 authlists delete

Delete an existing login authentication list.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `authlists delete <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<authlist_name> Name of an authentication list.

4.1.3 authlists set-policy

Set the policies of a login authentication list.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `authlists set-policy <P-1> <P-2> [<P-3> [<P-4> [<P-5> [<P-6>]]]]`

Parameter	Value	Meaning
`P-1`	`string`	<authlist_name> Name of an authentication list.
`P-2`	`reject`	Authentication is rejected / not allowed
	`local`	Authentication by local user DB
`P-3`	`reject`	Authentication is rejected / not allowed
	`local`	Authentication by local user DB
`P-4`	`reject`	Authentication is rejected / not allowed
	`local`	Authentication by local user DB
`P-5`	`reject`	Authentication is rejected / not allowed
	`local`	Authentication by local user DB
`P-6`	`reject`	Authentication is rejected / not allowed
	`local`	Authentication by local user DB

4.1.4 authlists enable

Activate a login authentication list.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `authlists enable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<authlist_name> Name of an authentication list.

4.1.5 authlists disable

Deactivate a login authentication list.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `authlists disable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<authlist_name> Name of an authentication list.

4.2 show

Display device options and settings.

4.2.1 show authlists

Display the ordered methods for authentication lists.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show authlists`

5 Auto Disable

5.1 auto-disable

Configure the Auto Disable condition settings.

5.1.1 auto-disable timer

Timer value in seconds after a deactivated port is activated again. Possible values are: 30-4294967295. A value of 0 disables the timer.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `auto-disable timer <P-1>`

Parameter	Value	Meaning
`P-1`	`30..4294967295`	Timer value in seconds.

5.1.2 auto-disable reset

Reset the specific interface and reactivate the port.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `auto-disable reset [<P-1>]`

Parameter	Value	Meaning
`P-1`	`port`	Press Enter to execute the command.

no auto-disable reset

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no auto-disable reset [<P-1>]`

5.2 show

Display device options and settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show`

6 Cabletest

6.1 cable-test

6.1.1 cable-test

Select port on which to perform the cable test.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `cable-test <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

7 Class Of Service

7.1 classofservice

Class of service configuration.

7.1.1 classofservice ip-dscp-mapping

ip-dscp-mapping configuration
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `classofservice ip-dscp-mapping <P-1> <P-2> <P-3>`

Parameter	Value	Meaning
P-1	af11	
	af12	
	af13	
	af21	
	af22	
	af23	
	af31	
	af32	
	af33	
	af41	
	af42	
	af43	
	be	
	cs0	
	cs1	
	cs2	
	cs3	
	cs4	
	cs5	
	cs6	
	cs7	
	ef	
	0..63	
P-2	0..7	Enter the Traffic Class value.
P-3	0..3	Enter the Traffic Class value.

7.1.2 classofservice dot1p-mapping

Enter a VLAN priority and the traffic class it should be mapped to.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `classofservice dot1p-mapping <P-1> <P-2> <P-3>`

Parameter	Value	Meaning
`P-1`	`0..7`	Enter the 802.1p priority.
`P-2`	`0..7`	Enter the Traffic Class value.
`P-3`	`0..3`	Enter a number in the given range.

7.2 classofservice

Interface classofservice configuration.

7.2.1 classofservice trust

trust configuration

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `classofservice trust <P-1>`

Parameter	Value	Meaning
`P-1`	`untrusted`	Sets the class of service trust mode to untrusted
	`dot1p`	Sets the class of service trust mode to dot1p.
	`ip-dscp`	Sets the class of service trust mode to IP DSCP.

7.3 cos-queue

COS queue configuration

7.3.1 cos-queue strict

strict priority scheduler (default)
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `cos-queue strict <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`0..7`	Enter a Queue Id from 0 to 7.
`P-2`	`0..3`	Enter a number in the given range.

7.3.2 cos-queue weighted

weighted scheduler
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `cos-queue weighted <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`0..7`	Enter a Queue Id from 0 to 7.
`P-2`	`0..3`	Enter a number in the given range.

7.3.3 cos-queue max-bandwidth

Maximum/shaped bandwidth for the queues
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `cos-queue max-bandwidth <P-1> <P-2> <P-3>`

Parameter	Value	Meaning
`P-1`	`0..3`	Enter a number in the given range.
`P-2`	`0..7`	Enter a Queue Id from 0 to 7.
`P-3`	`0..100`	Enter a number in the given range.

7.3.4 cos-queue min-bandwidth

Minimum/guaranteed bandwidth for the queues when in weighted mode

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `cos-queue min-bandwidth <P-1> <P-2> <P-3>`

Parameter	Value	Meaning
`P-1`	`0..3`	Enter a number in the given range.
`P-2`	`0..7`	Enter a Queue Id from 0 to 7.
`P-3`	`0..100`	Enter a number in the given range.

7.4 show

Display device options and settings.

7.4.1 show classofservice ip-dscp-mapping

Show ip-dscp-mapping configuration.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show classofservice ip-dscp-mapping`

7.4.2 show classofservice dot1p-mapping

Display a table containing the vlan priority to traffic class mappings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show classofservice dot1p-mapping`

7.4.3 show classofservice trust

Show a table containing the trust mode of all interfaces.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show classofservice trust`

7.4.4 show cos-queue

Show cosqueue parameters
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show cos-queue`

8 Command Line Interface (CLI)

8.1 cli

Set the CLI preferences.

8.1.1 cli serial-timeout

Set login timeout for serial line connection to CLI. Setting to 0 will disable the timeout. The value is active after next login.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `cli serial-timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`0..160`	Enter a number in the given range. Setting to 0 will disable the timeout.

8.1.2 cli prompt

Change the system prompt. Following wildcards are allowed:
%d date, %t time, %i IP address,%m MAC address ,%p product name.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `cli prompt <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters. Following wildcards are allowed: %d date, %t time, %i IP address, %m MAC address , %p product name

8.1.3 cli numlines

Screen size for 'more' (23 = default). Enter a 0 will disable the feature. The value is only valid for the current session.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `cli numlines <P-1>`

Parameter	Value	Meaning
`P-1`	`0..250`	Screen size for 'more' (23 = default). Enter a 0 will disable the feature. The value is only valid for the current session.

8.1.4 cli banner operation

Enable or disable the CLI login banner.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `cli banner operation`

no cli banner operation

Disable the option

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `no cli banner operation`

8.1.5 cli banner text

Set the text for the CLI login banner (C printf format syntax allowed: \\n \\t).

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `cli banner text <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 1024 characters (allowed characters are from ASCII 32 to 127).

8.2 show

Display device options and settings.

8.2.1 show cli global

Display the CLI preferences.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show cli global`

8.2.2 show cli command-tree

Display a list of every command.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show cli command-tree`

8.3 logging

Logging configuration.

8.3.1 logging cli-command

Enable or disable the CLI command logging.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging cli-command`

no logging cli-command

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no logging cli-command`

8.4 show

Display device options and settings.

8.4.1 show logging cli-command

Display the CLI command logging preferences.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging cli-command`

9 Clock

9.1 clock

Configure local and DST clock settings.

9.1.1 clock set

Edit current local time.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock set <P-1> <P-2>`

Parameter	Value	Meaning
P-1	YYYY-MM-DD	Local date (range: 2004-01-01 - 2037-12-31).
P-2	HH:MM:SS	Local time.

9.1.2 clock timezone offset

Local time offset (in minutes) with respect\nto UTC (positive values for locations east of\nGreenwich).

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock timezone offset <P-1>`

Parameter	Value	Meaning
P-1	-780..840	Edit the timezone offset (in minutes).

9.1.3 clock timezone zone

Edit the timezone acronym (max. 4 characters).

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock timezone zone <P-1>`

Parameter	Value	Meaning
P-1	string	Edit the timezone acronym (max 4 characters).

9.1.4 clock summer-time mode

Configure summer-time mode parameters.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock summer-time mode <P-1>`

Parameter	Value	Meaning
`P-1`	`disable`	Disable recurring summer-time mode.
	`recurring`	Enable recurring summer-time mode.
	`eu`	Enable recurring summer-time used in most parts of the European Union.
	`usa`	Enable recurring summer-time used in most parts of the USA.

9.1.5 clock summer-time recurring start

Edit the starting date and time for daylight saving time.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock summer-time recurring start <P-1> <P-2> <P-3> <P-4>`

Parameter	Value	Meaning
`P-1`	`none`	
	`first`	
	`second`	
	`third`	
	`fourth`	
	`last`	
`P-2`	`none`	
	`sun`	Sunday
	`mon`	Monday
	`tue`	Tuesday
	`wed`	Wednesday
	`thu`	Thursday
	`fri`	Friday
	`sat`	Saturday

Parameter	Value	Meaning
P-3	none	
	jan	January
	feb	February
	mar	March
	apr	April
	may	May
	jun	June
	jul	July
	aug	August
	sep	September
	oct	October
	nov	November
	dec	December
P-4	string	<hh:mm> Present time in hh:mm format (00:00-23:59).

9.1.6 clock summer-time recurring end

Edit the ending date and time for daylight saving time.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock summer-time recurring end <P-1> <P-2> <P-3> <P-4>`

Parameter	Value	Meaning
P-1	none	
	first	
	second	
	third	
	fourth	
	last	
P-2	none	
	sun	Sunday
	mon	Monday
	tue	Tuesday
	wed	Wednesday
	thu	Thursday
	fri	Friday
	sat	Saturday

Parameter	Value	Meaning
P-3	none	
	jan	January
	feb	February
	mar	March
	apr	April
	may	May
	jun	June
	jul	July
	aug	August
	sep	September
	oct	October
	nov	November
	dec	December
P-4	string	<hh:mm> Present time in hh:mm format (00:00-23:59).

9.1.7 clock summer-time zone

Edit timezone acronym for summer-time (max. 4 characters).

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `clock summer-time zone <P-1>`

Parameter	Value	Meaning
P-1	string	Edit the timezone acronym (max 4 characters).

9.2 show

Display device options and settings.

9.2.1 show clock

Display the current time information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show clock [summer-time]`

`[summer-time]`: Display the summer-time parameters.

10 Configuration

10.1 save

Save the configuration to the specified destination.

10.1.1 save profile

Save the configuration to the specific profile.

- Mode: `All Privileged Modes`
- Privilege Level: `Operator`
- Format: `save profile <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.

10.2 config

Configure the configuration saving settings.

10.2.1 config watchdog admin-state

Enable or disable the configuration undo feature.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `config watchdog admin-state`

no config watchdog admin-state

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no config watchdog admin-state`

10.2.2 config watchdog timeout

Configure the configuration undo timeout (unit: seconds).
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `config watchdog timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`30..600`	Enter a number in the given range.

10.2.3 config encryption password set

Set the configuration file password.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config encryption password set [<P-1>] [<P-2>]`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 64 characters.
`P-2`	`string`	Enter a user-defined text, max. 64 characters.

10.2.4 config encryption password clear

Clear the configuration file password.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config encryption password clear [<P-1>]`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 64 characters.

10.2.5 config envm auto-update

Allow automatic firmware updates with this memory device.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config envm auto-update <P-1>`

Parameter	Value	Meaning
`P-1`	`usb`	USB Storage Device

no config envm auto-update

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no config envm auto-update <P-1>`

10.2.6 config envm config-save

Allow the configuration to be saved to this memory device.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `config envm config-save <P-1>`

Parameter	Value	Meaning
`P-1`	`usb`	USB Storage Device

no config envm config-save

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no config envm config-save <P-1>`

10.2.7 config envm load-priority

Configure the order of configuration load attempts from memory devices at boot time. If one load is successful, then the device discards further attempts.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `config envm load-priority <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`usb`	USB Storage Device
`P-2`	`disable`	Config will not be loaded at all
	`first`	Config will be loaded first. If successful, no other config will be tried.

10.2.8 config profile select

Select a configuration profile to be the active configuration.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config profile select <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`nvm`	You can only select nvm for this command.
`P-2`	`1..20`	Index of the profile entry.

10.2.9 config profile delete

Delete a specific configuration profile.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config profile delete <P-1> num <P-2> profile <P-3>`

`num`: Select the index of a profile to delete.

`profile`: Select the name of a profile to delete.

Parameter	Value	Meaning
`P-1`	`nvm`	non-volatile memory
	`envm`	external non-volatile memory device
`P-2`	`1..20`	Index of the profile entry.
`P-3`	`string`	Enter a user-defined text, max. 32 characters.

10.2.10 config fingerprint verify nvm profile

Select the name of a profile to be verified.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config fingerprint verify nvm profile <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	Filename.
`P-2`	`string`	Enter hash as 40 hexa-decimal characters.

10.2.11 config fingerprint verify nvm num

Select the index number of a profile to be verified.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config fingerprint verify nvm num <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`1..20`	Index of the profile entry.
`P-2`	`string`	Enter hash as 40 hexa-decimal characters.

10.2.12 config fingerprint verify envm profile

Select the name of a profile to be verified.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config fingerprint verify envm profile <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	Filename.
`P-2`	`string`	Enter hash as 40 hexa-decimal characters.

10.2.13 config fingerprint verify envm num

Select the index number of a profile to be verified.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `config fingerprint verify envm num <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`1..20`	Index of the profile entry.
`P-2`	`string`	Enter hash as 40 hexa-decimal characters.

10.3 copy

Copy different kinds of items.

10.3.1 copy sysinfo system envm

Copy the system information to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy sysinfo system envm [filename <P-1>]`

`[filename]`: Enter the filename (format xyz.html) to be saved in external non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.

10.3.2 copy sysinfoall system envm

Copy the system information and the event log from the device to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy sysinfoall system envm`

10.3.3 copy firmware envm

Copy a firmware image to the device from external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy firmware envm <P-1> system`

`system`: Copy a firmware image to the device from external non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Filename.

10.3.4 copy firmware remote

Copy a firmware image to the device from a server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy firmware remote <P-1> system`

`system`: Copy a firmware image to the device from a file server.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

10.3.5 copy config running-config nvm

Copy the running-config to non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy config running-config nvm [profile <P-1>]`

`[profile]`: Save the configuration as a specific profile name.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.

10.3.6 copy config running-config remote

Copy the running-config to a file server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy config running-config remote <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

10.3.7 copy config nvm

Load a configuration from non-volatile memory to the running-config.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy config nvm [profile <P-1>] running-config remote <P-2>`

`[profile]`: Load a configuration from a specific profile name.

`running-config`: (Re)-load a configuration from non-volatile memory to the running-config.

`remote`: Copy a configuration from non-volatile memory to a server.

Parameter	Value	Meaning
`P-1`	`string`	Filename.
`P-2`	`string`	Enter a user-defined text, max. 128 characters.

10.3.8 copy config envm

Copy a configuration from external non-volatile memory to non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy config envm [profile <P-1>] nvm`

`[profile]`: Copy a specific configuration profile from external non-volatile memory to non-volatile memory.

`nvm`: Copy a specific profile from external non-volatile memory to non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Filename.

10.3.9 copy config remote

Copy a configuration file to the device from a server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy config remote <P-1> nvm [profile <P-2>] running-config`

`nvm`: Copy a configuration file from a server to non-volatile memory.

`[profile]`: Copy a configuration from a server to a specific profile in non-volatile memory.

`running-config`: Copy a configuration file from a server to the running-config.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.

10.3.10 copy sfp-white-list remote

Copy the SFP WhiteList from server to the device.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy sfp-white-list remote <P-1> nvm`

`nvm`: Copy the SFP WhiteList from server to the device.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters. Possible values: a..z, A..Z, 0..9, underscore (_), dash (-), dot (.)

10.3.11 copy sfp-white-list envm

Copy the SFP WhiteList from external non-volatile memory.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy sfp-white-list envm <P-1> nvm`

`nvm`: Copy the SFP WhiteList from external non-volatile memory to the device.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters. Possible values: a..z, A..Z, 0..9, underscore (_), dash (-), dot (.)

10.4 clear

Clear several items.

10.4.1 clear config

Clear the running configuration.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `clear config [<P-1>]`

Parameter	Value	Meaning
`P-1`	`keep-ip`	Keep the IP parameters for management at clear configuration.

10.4.2 clear factory

Set the device back to the factory settings (use with care).
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `clear factory`

10.4.3 clear sfp-white-list

Clear the SFP WhiteList.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear sfp-white-list`

10.5 show

Display device options and settings.

10.5.1 show config envm settings

Display the settings of the external non-volatile memory.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show config envm settings`

10.5.2 show config envm properties

Display the properties of the external non-volatile memory.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show config envm properties`

10.5.3 show config watchdog

Display the Auto Configuration Undo settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show config watchdog`

10.5.4 show config encryption

Display the settings for configuration encryption.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show config encryption`

10.5.5 show config profiles

Display the configuration profiles.
- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show config profiles <P-1> [<P-2>]`

Parameter	Value	Meaning
`P-1`	`nvm`	non-volatile memory
	`envm`	external non-volatile memory device
`P-2`	`1..20`	Index of the profile entry.

10.5.6 show config status

Display the synchronization status of the running configuration with the non-volatile memory and the EAM.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show config status`

10.6 swap

Swap software images.

10.6.1 swap firmware system backup

Swap the main and backup images.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `swap firmware system backup`

11 Debugging

11.1 debug

Different tools to assist in debugging the device.

11.1.1 debug tcpdump help

Display the help file for the tcpdump tool.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `debug tcpdump help`

11.1.2 debug tcpdump start cpu

Start capture with default values.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `debug tcpdump start cpu [filter <P-1>] [parms <P-2>]`

`[filter]`: Start capture with values from a filter file.

`[parms]`: Start capture with the tcpdump parameters (for details see tcpdump help).

Parameter	Value	Meaning
`P-1`	`string`	<filename> Enter a valid filename.
`P-2`	`string`	Enter a user-defined text, max. 255 characters.

11.1.3 debug tcpdump stop

Abort capture of network traffic.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `debug tcpdump stop`

11.1.4 debug tcpdump filter show

Display a known filter file.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `debug tcpdump filter show <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<filename> Enter a valid filename.

11.1.5 debug tcpdump filter list

Display every available filter file.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `debug tcpdump filter list`

11.1.6 debug tcpdump filter delete

Delete a known filter file.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `debug tcpdump filter delete <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<filename> Enter a valid filename.

11.2 copy

Copy different kinds of items.

11.2.1 copy tcpdumpcap nvm envm

Copy the capture file from non-volatile memory to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy tcpdumpcap nvm envm [<P-1>]`

Parameter	Value	Meaning
`P-1`	`string`	<filename> Enter a valid filename.

11.2.2 copy tcpdumpcap nvm remote

Copy the capture file from the device to a server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy tcpdumpcap nvm remote <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

11.2.3 copy tcpdumpfilter remote

Copy the filter file from a server to the specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy tcpdumpfilter remote <P-1> nvm <P-2>`

`nvm`: Copy the filter file from a server to non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.
`P-2`	`string`	<filename> Enter a valid filename.

11.2.4 copy tcpdumpfilter envm

Copy the capture filter from external non-volatile memory to the specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy tcpdumpfilter envm <P-1> nvm [<P-2>]`

`nvm`: Copy the capture filter from external non-volatile memory to non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	<filename> Enter a valid filename.
`P-2`	`string`	<filename> Enter a valid filename.

11.2.5 copy tcpdumpfilter nvm

Copy the capture filter from non-volatile memory to the specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy tcpdumpfilter nvm <P-1> envm [<P-2>] remote <P-3>`

`envm`: Copy the capture filter from non-volatile memory to external non-volatile memory.

`remote`: Copy the capture file from non-volatile memory to a server.

Parameter	Value	Meaning
`P-1`	`string`	Filename.
`P-2`	`string`	<filename> Enter a valid filename.
`P-3`	`string`	Enter a user-defined text, max. 128 characters.

12 Device Monitoring

12.1 device-status

Configure various device conditions to be monitored.

12.1.1 device-status monitor link-failure

Enable or disable monitor state of network connection(s).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status monitor link-failure`

no device-status monitor link-failure

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no device-status monitor link-failure`

12.1.2 device-status monitor temperature

Enable or disable monitoring of the device temperature.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status monitor temperature`

no device-status monitor temperature

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no device-status monitor temperature`

12.1.3 device-status monitor envm-removal

Enable or disable monitoring the presence of the external non-volatile memory.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status monitor envm-removal`

no device-status monitor envm-removal

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Administrator`
- Format: `no device-status monitor envm-removal`

12.1.4 device-status monitor envm-not-in-sync

Enable or disable monitoring synchronization between the external non-volatile memory\n and the running configuration.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status monitor envm-not-in-sync`

no device-status monitor envm-not-in-sync

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no device-status monitor envm-not-in-sync`

12.1.5 device-status monitor ring-redundancy

Enable or disable monitoring if ring-redundancy is present.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status monitor ring-redundancy`

no device-status monitor ring-redundancy

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no device-status monitor ring-redundancy`

12.1.6 device-status monitor power-supply

Enable or disable monitoring the condition of the power supply(s).

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status monitor power-supply <P-1>`

Parameter	Value	Meaning
`P-1`	`1..2`	Number of power supply.

no device-status monitor power-supply

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no device-status monitor power-supply <P-1>`

12.1.7 device-status trap

Configure the device to send a trap when the device status changes.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `device-status trap`

no device-status trap

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no device-status trap`

12.2 device-status

Configure various device conditions to be monitored.

12.2.1 device-status link-alarm

Configure the monitor settings of the port link.
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `device-status link-alarm`

no device-status link-alarm

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `no device-status link-alarm`

12.3 show

Display device options and settings.

12.3.1 show device-status monitor

Display the device monitoring configurations.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show device-status monitor`

12.3.2 show device-status state

Display the current state of the device.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show device-status state`

12.3.3 show device-status trap

Display the device trap information and configurations.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show device-status trap`

12.3.4 show device-status events

Display occurred device status events.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show device-status events`

12.3.5 show device-status link-alarm

Display the monitor configurations of the network ports.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show device-status link-alarm`

12.3.6 show device-status all

Display the configurable device status settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show device-status all`

13 Device Security

13.1 security-status

Configure the security status settings.

13.1.1 security-status monitor pwd-change

Sets the monitoring of default password change for\n'user' and 'admin'.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor pwd-change`

no security-status monitor pwd-change

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor pwd-change`

13.1.2 security-status monitor pwd-min-length

Sets the monitoring of minimum length of the password\n(smaller 8).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor pwd-min-length`

no security-status monitor pwd-min-length

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor pwd-min-length`

13.1.3 security-status monitor pwd-policy-config

Sets the monitoring whether the minimum password policy is configured.\n The device changes the security status to the value "error" if the value for at least one of the following password rules is 0:"minimum upper cases","minimum lower cases","minimum numbers","minimum special characters".
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor pwd-policy-config`

no security-status monitor pwd-policy-config

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor pwd-policy-config`

13.1.4 security-status monitor pwd-policy-inactive

Sets the monitoring whether at least one user is\nconfigured with inactive policy check.\nThe device changes the security status to the value "error" if the function "policy check" is inactive for at least 1 user account.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor pwd-policy-inactive`

no security-status monitor pwd-policy-inactive

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor pwd-policy-inactive`

13.1.5 security-status monitor telnet-enabled

Sets the monitoring of the activation of telnet on\nthe switch.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor telnet-enabled`

no security-status monitor telnet-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor telnet-enabled`

13.1.6 security-status monitor http-enabled

Sets the monitoring of the activation of http on the switch.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor http-enabled`

no security-status monitor http-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor http-enabled`

13.1.7 security-status monitor snmp-unsecure

Sets the monitoring of SNMP security\n(SNMP v1/v2 is enabled or v3 encryption is disabled).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor snmp-unsecure`

no security-status monitor snmp-unsecure

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor snmp-unsecure`

13.1.8 security-status monitor sysmon-enabled

Sets the monitoring of the activation of System Monitor 1 on the switch.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor sysmon-enabled`

no security-status monitor sysmon-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor sysmon-enabled`

13.1.9 security-status monitor extnvm-upd-enabled

Sets the monitoring of activation of the configuration\n saving to external non volatile memory.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor extnvm-upd-enabled`

no security-status monitor extnvm-upd-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor extnvm-upd-enabled`

13.1.10 security-status monitor no-link-enabled

Sets the monitoring of no link detection.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor no-link-enabled`

no security-status monitor no-link-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor no-link-enabled`

13.1.11 security-status monitor esc-enabled

Sets the monitoring of Ethernet Switch Configurator.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor esc-enabled`

no security-status monitor esc-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor esc-enabled`

13.1.12 security-status monitor extnvm-load-unsecure

Sets the monitoring of security of the configuration loading from extnvm.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor extnvm-load-unsecure`

no security-status monitor extnvm-load-unsecure

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor extnvm-load-unsecure`

13.1.13 security-status monitor iec61850-mms-enabled

Sets the monitoring of the activation of IEC 61850 MMS on the switch.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor iec61850-mms-enabled`

no security-status monitor iec61850-mms-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor iec61850-mms-enabled`

13.1.14 security-status monitor https-certificate

Sets the monitoring whether auto generated self-signed HTTPS certificate is in use.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor https-certificate`

no security-status monitor https-certificate

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor https-certificate`

13.1.15 security-status monitor modbus-tcp-enabled

Sets the monitoring of the activation of Modbus/TCP server on the switch.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor modbus-tcp-enabled`

no security-status monitor modbus-tcp-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor modbus-tcp-enabled`

13.1.16 security-status monitor ethernet-ip-enabled

Sets the monitoring of the activation of EtherNet/IP protocol on the switch.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status monitor ethernet-ip-enabled`

no security-status monitor ethernet-ip-enabled

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status monitor ethernet-ip-enabled`

13.1.17 security-status trap

Configure if a trap is sent when the security status\nchanges.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `security-status trap`

no security-status trap

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no security-status trap`

13.2 security-status

Configure the security status interface settings.

13.2.1 security-status no-link

Configure the monitoring of the specific ports.
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `security-status no-link`

no security-status no-link

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `no security-status no-link`

13.3 show

Display device options and settings.

13.3.1 show security-status monitor

Display the security status monitoring settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show security-status monitor`

13.3.2 show security-status state

Display the current security status.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show security-status state`

13.3.3 show security-status no-link

Display the settings of the monitoring of the specific network ports.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show security-status no-link`

13.3.4 show security-status trap

Display the security status trap information and settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show security-status trap`

13.3.5 show security-status events

Display the occurred security status events.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show security-status events`

13.3.6 show security-status all

Display the security status settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show security-status all`

14 Dynamic Host Configuration Protocol (DHCP)

14.1 dhcp-server

Modify DHCP Server parameters.

14.1.1 dhcp-server operation

Enable or disable the DHCP server on this port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dhcp-server operation`

no dhcp-server operation

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-server operation`

14.2 dhcp-server

Modify DHCP Server parameters.

14.2.1 dhcp-server operation

Enable or disable the DHCP server globally.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dhcp-server operation`

no dhcp-server operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-server operation`

14.2.2 dhcp-server pool add

Add a pool
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dhcp-server pool add <P-1> dynamic <P-2> <P-3> static <P-4>`

`dynamic`: Add a dynamic pool (one or more IPs).

`static`: Add a static pool (one IP).

Parameter	Value	Meaning
`P-1`	`1..128`	Pool ID.
`P-2`	`A.B.C.D`	IP address.
`P-3`	`A.B.C.D`	IP address.
`P-4`	`A.B.C.D`	IP address.

14.2.3 dhcp-server pool modify

Modify the dynamic address pool
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dhcp-server pool modify <-1> mode interface <-2> mac <-3> clientid <-4> remoteid <-5> circuitid <-6> relay <-7> vlan <-8> leasetime <-9> option configpath <-10> gateway <-11> netmask <-12> wins <-13> dns <-14> hostname <-15> schneider electric-device`

`mode`: Pool mode settings.

`interface`: Interface mode.

`mac`: MAC mode.

`clientid`: Clientid mode.

`remoteid`: Remoteid mode.

`circuitid`: Circuitid mode.

`relay`: Relay mode.

`vlan`: VLAN mode.

`leasetime`: Enter the leasetime in seconds.

`option`: Configuration option.

`configpath`: Configpath in 'tftp://<servername>/<file>' format.

`gateway`: Default gateway.

`netmask`: Option netmask.

`wins`: Option wins.

`dns`: Option dns.

`hostname`: Option hostname.

`schneider electric-device`: Set this pool to Schneider Electric devices only.

Parameter	Value	Meaning
P-1	1..128	Pool ID.
P-2	slot no./port no.	
P-3	none	Remove MAC mode.
	aa:bb:cc:dd:ee:ff	MAC address.
P-4	none	Remove ID mode.
	xx:xx:...:xx	Enter ID in hexadecimal format.
P-5	none	Remove ID mode.
	xx:xx:...:xx	Enter ID in hexadecimal format.
P-6	none	Remove ID mode.
	xx:xx:...:xx	Enter ID in hexadecimal format.
P-7	none	Remove relay mode.
	ipaddr	Enter IP address of the relay.
P-8	-1..4042	VLAN ID. A value of -1 corresponds to management vlan (the default), any other value (1-4042) represents a specific VLAN
P-9	infinite	Infinite leasetime.
	seconds	Leasetime in seconds.
P-10	tftp://%*s	tftp://<servername>/<file> Configuration path; empty string ("") to clear value.
P-11	A.B.C.D	IP address.
P-12	a.b.c.d	IP subnet mask.
P-13	A.B.C.D	IP address.
P-14	A.B.C.D	IP address.
P-15	string	Enter a user-defined text, max. 64 characters.

no dhcp-server pool modify

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-server pool modify <-1> mode interface mac clientid remoteid circuitid relay vlan leasetime option configpath gateway netmask wins dns hostname schneider electric-device`

14.2.4 dhcp-server pool mode

Pool enable.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dhcp-server pool mode <P-1>`

Parameter	Value	Meaning
`P-1`	`1..128`	Pool ID.

no dhcp-server pool mode

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-server pool mode <P-1>`

14.2.5 dhcp-server pool delete

Pool delete.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dhcp-server pool delete <P-1>`

Parameter	Value	Meaning
`P-1`	`1..128`	Pool ID.

14.3 show

Display device options and settings.

14.3.1 show dhcp-server operation

Display the DHCP Server global information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dhcp-server operation`

14.3.2 show dhcp-server pool

Display the DHCP Server pool entries.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dhcp-server pool [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..128`	Pool ID.

14.3.3 show dhcp-server interface

Display the DHCP server information per interface.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dhcp-server interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

14.3.4 show dhcp-server lease

Display the DHCP server lease entries.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dhcp-server lease`

15 DHCP Layer 2 Relay

15.1 dhcp-l2relay

Configure DHCP Layer 2 Relay.

15.1.1 dhcp-l2relay mode

Enables or disables DHCP Layer 2 Relay globally.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay mode`

no dhcp-l2relay mode

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-l2relay mode`

15.2 dhcp-l2relay

Group of commands that configure DHCP Layer 2 Relay on existing VLANs.

15.2.1 dhcp-l2relay mode

Enables or disables DHCP Layer 2 Relay on a VLAN.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay mode <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

no dhcp-l2relay mode

Disable the option
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-l2relay mode <P-1>`

15.2.2 dhcp-l2relay circuit-id

This commands enables setting the Option-82 Circuit ID in DHCP messages to an interface descriptor.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay circuit-id <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

no dhcp-l2relay circuit-id

Disable the option
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-l2relay circuit-id <P-1>`

15.2.3 dhcp-l2relay remote-id ip

Specifies the IP address of device as DHCP Option 82 Remote ID.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay remote-id ip <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

15.2.4 dhcp-l2relay remote-id mac

Specifies the MAC address of device as DHCP Option 82 Remote ID.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay remote-id mac <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

15.2.5 dhcp-l2relay remote-id client-id

Specifies the system name of device as DHCP Option 82 Remote ID.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay remote-id client-id <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

15.2.6 dhcp-l2relay remote-id other

Allows you to specify the DHCP Option-82 Remote ID manually. If you omit the Remote ID, then only the Circuit ID is inserted into a relayed DHCP message.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay remote-id other <P-1> [<P-2>]`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.
`P-2`	`string2`	<remote-id> Option 82 Remote ID.

15.3 dhcp-l2relay

Configure DHCP Layer 2 Relay for an interface (list/range)

15.3.1 dhcp-l2relay mode

Enables or disables DHCP Layer 2 Relay on an interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay mode`

no dhcp-l2relay mode

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-l2relay mode`

15.3.2 dhcp-l2relay trust

This command configures an interface as trusted (typically connected to a DHCP server) or untrusted.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dhcp-l2relay trust`

no dhcp-l2relay trust

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dhcp-l2relay trust`

15.4 clear

Clear several items.

15.4.1 clear dhcp-l2relay statistics

This command clears the DHCP Layer 2 Relay statistics.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear dhcp-l2relay statistics`

15.5 show

Display device options and settings.

15.5.1 show dhcp-l2relay global

This command displays the global DHCP Layer 2 Relay configuration.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show dhcp-l2relay global`

15.5.2 show dhcp-l2relay statistics

This command displays interface statistics specific to DHCP Layer 2 Relay.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show dhcp-l2relay statistics`

15.5.3 show dhcp-l2relay interfaces

This command displays the DHCP Layer 2 Relay status of all interfaces.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show dhcp-l2relay interfaces`

15.5.4 show dhcp-l2relay vlan

This command displays the VLAN based DHCP Layer 2 Relay status.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show dhcp-l2relay vlan`

16 DoS Mitigation

16.1 dos

Manage DoS Mitigation

16.1.1 dos tcp-null

Enables TCP Null scan protection - all TCP flags and TCP sequence number zero.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos tcp-null`

no dos tcp-null

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos tcp-null`

16.1.2 dos tcp-xmas

Enables TCP XMAS scan protection - TCP FIN, URG, PSH equal 1 and SEQ equals 0.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos tcp-xmas`

no dos tcp-xmas

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos tcp-xmas`

16.1.3 dos tcp-syn-fin

Enables TCP SYN/FIN scan protection - TCP with SYN and FIN flags set.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos tcp-syn-fin`

no dos tcp-syn-fin

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no dos tcp-syn-fin`

16.1.4 dos icmp-fragmented

Enables fragmented ICMP protection.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos icmp-fragmented`

no dos icmp-fragmented

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos icmp-fragmented`

16.1.5 dos icmp payload-check

Enables ICMP max payload size protection for IPv4 and IPv6.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos icmp payload-check`

no dos icmp payload-check

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos icmp payload-check`

16.1.6 dos icmp payload-size

Configures maximum ICMP payload size (default: 512).
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos icmp payload-size <P-1>`

Parameter	Value	Meaning
`P-1`	`0..1472`	Max. ICMP payload size (default: 512)

16.1.7 dos ip-land

Enables LAND attack protection - source IP equals destination IP.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos ip-land <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable the option.
	`disable`	Disable the option.

16.1.8 dos tcp-offset

Enables TCP offset check - ingress TCP packets with fragment offset 1 are dropped.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos tcp-offset`

no dos tcp-offset

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos tcp-offset`

16.1.9 dos tcp-syn

Enables TCP source port smaller than 1024 protection.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos tcp-syn`

no dos tcp-syn

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos tcp-syn`

16.1.10 dos l4-port

Enables UDP or TCP source port equals destination port check.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos l4-port`

no dos l4-port

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos l4-port`

16.1.11 dos icmp-smurf-attack

Enables ICMP smurf attack protection check.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dos icmp-smurf-attack`

no dos icmp-smurf-attack

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dos icmp-smurf-attack`

16.2 show

Display device options and settings.

16.2.1 show dos

Display the DoS Mitigation parameters.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dos`

17 IEEE 802.1x (Dot1x)

17.1 dot1x

Configure 802.1X parameters.

17.1.1 dot1x dynamic-vlan

Creates VLANs dynamically when a RADIUS-assigned VLAN does not exist.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x dynamic-vlan`

no dot1x dynamic-vlan

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dot1x dynamic-vlan`

17.1.2 dot1x system-auth-control

Enable or disable 802.1X authentication support on the switch.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x system-auth-control`

no dot1x system-auth-control

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no dot1x system-auth-control`

17.1.3 dot1x monitor

Enable or disable 802.1X monitor mode.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x monitor`

no dot1x monitor

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no dot1x monitor`

17.1.4 dot1x mac-authentication-bypass format group-size

Specify group-size for MAB.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x mac-authentication-bypass format group-size <P-1>`

Parameter	Value	Meaning
`P-1`	`1`	
	`2`	
	`4`	
	`12`	

17.1.5 dot1x mac-authentication-bypass format group-separator

Specify group-separator for MAB.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x mac-authentication-bypass format group-separator <P-1>`

Parameter	Value	Meaning
`P-1`	`-`	Use hyphen for MAB formatting.
	`:`	Use colon for MAB formatting.
	`.`	Use dot for MAB formatting.

17.1.6 dot1x mac-authentication-bypass format letter-case

Specify letter case for MAB.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x mac-authentication-bypass format letter-case <P-1>`

Parameter	Value	Meaning
`P-1`	`lower-case`	Use lower-case for MAB formatting.
	`upper-case`	Use upper-case for MAB formatting.

17.1.7 dot1x mac-authentication-bypass password

Specify global password for MAB.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `dot1x mac-authentication-bypass password <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<password> Enter a valid password for MAB.

17.2 dot1x

Configure 802.1X interface parameters.

17.2.1 dot1x guest-vlan

Configure a VLAN as 802.1X guest VLAN.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x guest-vlan <P-1>`

Parameter	Value	Meaning
`P-1`	`0..4042`	Enter the VLAN ID. Entering of ID 0 disables the feature.

17.2.2 dot1x max-req

Configure the maximum number of requests to be sent.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x max-req <P-1>`

Parameter	Value	Meaning
`P-1`	`1..10`	Maximum number of requests (default: 2).

17.2.3 dot1x port-control

Set the authentication mode on the specified port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x port-control <P-1>`

Parameter	Value	Meaning
`P-1`	`auto`	Port is actually controlled by protocol.
	`force-authorized`	Port is authorized unconditionally (default).
	`force-unauthorized`	Port is unauthorized unconditionally.

17.2.4 dot1x re-authentication

Enable or disable re-authentication for the given interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x re-authentication`

no dot1x re-authentication

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dot1x re-authentication`

17.2.5 dot1x unauthenticated-vlan

Configure a VLAN as 802.1X unauthenticated VLAN.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x unauthenticated-vlan <P-1>`

Parameter	Value	Meaning
`P-1`	`0..4042`	Enter the VLAN ID. Entering of ID 0 disables the feature.

17.2.6 dot1x timeout guest-vlan-period

Configure the guest-vlan period value.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x timeout guest-vlan-period <P-1>`

Parameter	Value	Meaning
`P-1`	`1..300`	Guest-vlan timeout in seconds (default: 90).

17.2.7 dot1x timeout reauth-period

Configure the re-authentication period.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x timeout reauth-period <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Timeout in seconds.

17.2.8 dot1x timeout quiet-period

Configure the quiet period value.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x timeout quiet-period <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Quiet period in seconds (default: 60).

17.2.9 dot1x timeout tx-period

Configure the transmit timeout period.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x timeout tx-period <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Timeout in seconds.

17.2.10 dot1x timeout supp-timeout

Configure the supplicant timeout period.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x timeout supp-timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Timeout in seconds.

17.2.11 dot1x timeout server-timeout

Configure the server timeout period.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x timeout server-timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Timeout in seconds.

17.2.12 dot1x initialize

Begins the initialization sequence on the specified port (port-control mode must be 'auto').
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x initialize`

no dot1x initialize

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dot1x initialize`

17.2.13 dot1x mac-auth-bypass

Configure MAC-Authentication bypass for the port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x mac-auth-bypass`

no dot1x mac-auth-bypass

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dot1x mac-auth-bypass`

17.2.14 dot1x re-authenticate

Begins the re-authentication sequence on the specified port (port-control mode must be 'auto').
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `dot1x re-authenticate`

no dot1x re-authenticate

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no dot1x re-authenticate`

17.3 show

Display device options and settings.

17.3.1 show dot1x global

Display the global 802.1X configuration.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dot1x global`

17.3.2 show dot1x auth-history

Display the 802.1X authentication events and information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dot1x auth-history [<P-1> [<P-2>]]`

Parameter	Value	Meaning
P-1	slot no./port no.	
P-2	1..4294967294	802.1X history log entry index. This can be specified only if interface is provided.\nParameter Usage:[<slot/port> [index]]

17.3.3 show dot1x detail

Display the detailed 802.1X configuration for the specified port.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dot1x detail <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

17.3.4 show dot1x summary

Display the summary information about the 802.1X configuration for a specified port or all ports.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dot1x summary [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

17.3.5 show dot1x clients

Display the 802.1X client information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dot1x clients [<P-1>]`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	MAC address.

17.3.6 show dot1x statistics

Display the 802.1X statistics for the specified port.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show dot1x statistics <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

17.4 clear

Clear several items.

17.4.1 clear dot1x statistics port

Resets the 802.1X statistics for specified port.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear dot1x statistics port <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

17.4.2 clear dot1x statistics all

Resets the 802.1X statistics for all ports.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear dot1x statistics all`

17.4.3 clear dot1x auth-history port

Clears the 802.1X authentication history for specified port.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear dot1x auth-history port <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

17.4.4 clear dot1x auth-history all

Clears the 802.1X authentication history for all ports.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear dot1x auth-history all`

18 IEEE 802.3ad (Dot3ad)

18.1 link-aggregation

Configure 802.3ad link aggregation parameters to increase bandwidth and provide redundancy by combining connections.

18.1.1 link-aggregation add

Create a new Link Aggregation Group to increase bandwidth and provide link redundancy. If desired, enter a name up to 15 alphanumeric characters in length.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `link-aggregation add <P-1>`

Parameter	Value	Meaning
`P-1`	`lag/%*u`	lag/<lagport> Enter a lag interface in lag/lagport format.

18.1.2 link-aggregation modify

Modify the parameters for the specified Link Aggregation Group.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `link-aggregation modify <P-1> name <P-2> addport <P-3> deleteport <P-4> adminmode linktrap static min-links <P-5>`

`name`: Modify the name of the specified Link Aggregation Group.

`addport`: Add the specified port to the Link Aggregation Group.

`deleteport`: Delete the specified port from the Link Aggregation Group.

`adminmode`: Modify the administration mode of the specified Link Aggregation Group. To activate the group, enable the administration mode.

`linktrap`: Enable/Disable link trap notifications for the specified Link Aggregation Group

`static`: Enable or disable static capability for the specified Link Aggregation Group on a device. When enabled, LACP automatically helps prevent loops and allows non-link aggregation partners to support LACP.

`min-links`: Set the minimum links for the specified Link Aggregation Group.

Parameter	Value	Meaning
P-1	slot no./port no.	
P-2	string	Enter a user-defined text, max. 15 characters.
P-3	slot no./port no.	
P-4	slot no./port no.	
P-5	slot no./port no.	

no link-aggregation modify

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no link-aggregation modify <P-1> name addport deleteport adminmode linktrap static min-links`

18.1.3 link-aggregation delete

Delete the Link Aggregation Group to divide the group into individual connections.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `link-aggregation delete <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

18.2 lacp

Configure lacp parameters.

18.2.1 lacp admin-key

Configure the administrative value of the key on this LAG.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp admin-key <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.2 lacp collector-max-delay

Configure the collector max delay on this LAG (default is 0).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp collector-max-delay <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.3 lacp lacpmode

Activate/deactivate LACP on an interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp lacpmode`

no lacp lacpmode

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp lacpmode`

18.2.4 lacp actor admin key

Configure the value of the LACP actor admin key on this port (default 0).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp actor admin key <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.5 lacp actor admin state lacp-activity

Enable/disable the LACP activity on the actor admin state.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp actor admin state lacp-activity`

no lacp actor admin state lacp-activity

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp actor admin state lacp-activity`

18.2.6 lacp actor admin state lacp-timeout

Enable/disable the LACP timeout on the actor admin state.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp actor admin state lacp-timeout`

no lacp actor admin state lacp-timeout

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp actor admin state lacp-timeout`

18.2.7 lacp actor admin state aggregation

Enable/disable the aggregation on the actor admin state.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp actor admin state aggregation`

no lacp actor admin state aggregation

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp actor admin state aggregation`

18.2.8 lacp actor admin port priority

Set LACP actor port priority value (default 128).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp actor admin port priority <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.9 lacp partner admin key

Configure the administrative value of the LACP key for the protocol partner on this LAG (default 0).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin key <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.10 lacp partner admin state lacp-activity

Enable/disable the LACP activity on the partner admin state.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin state lacp-activity`

no lacp partner admin state lacp-activity

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp partner admin state lacp-activity`

18.2.11 lacp partner admin state lacp-timeout

Enable/disable the LACP timeout on the partner admin state.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin state lacp-timeout`

no lacp partner admin state lacp-timeout

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp partner admin state lacp-timeout`

18.2.12 lacp partner admin state aggregation

Enable/disable the state aggregation on the partner admin state.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin state aggregation`

no lacp partner admin state aggregation

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lacp partner admin state aggregation`

18.2.13 lacp partner admin port priority

Set LACP partner port priority value (default 128).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin port priority <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.14 lacp partner admin port id

Set LACP partner port value (default 0).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin port id <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.15 lacp partner admin system-priority

Configure the partner system priority.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin system-priority <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter a number between 0 and 65535

18.2.16 lacp partner admin system-id

Configure the MAC address representing the administrative value of the LAG ports protocol partner system ID default (00:00:00:00:00:00).
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lacp partner admin system-id <P-1>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	MAC address.

18.3 show

Display device options and settings.

18.3.1 show link-aggregation port

Display the LAG configuration of a single port.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show link-aggregation port [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.2 show link-aggregation statistics

Display the ports LAG statistics.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show link-aggregation statistics [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.3 show link-aggregation members

Display the member ports for the specified LAG.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show link-aggregation members <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.4 show lacp interface

Display the LAG interfaces attributes.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lacp interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.5 show lacp mode

Display the LACP mode.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lacp mode [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.6 show lacp actor

Display the Link Aggregation control protocol actor attributes.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lacp actor [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.7 show lacp partner operational

Display the Link Aggregation control protocol operational partner attributes.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lacp partner operational [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

18.3.8 show lacp partner admin

Display the Link Aggregation control protocol administrative partner attributes.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lacp partner admin [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

19 Filtering Database (FDB)

19.1 mac-filter

19.1.1 mac-filter

Static MAC filter configuration.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac-filter <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	MAC address.
`P-2`	`1..4042`	Enter the VLAN ID.

no mac-filter

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no mac-filter <P-1> <P-2>`

19.2 bridge

Bridge configuration.

19.2.1 bridge aging-time

Aging time configuration.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `bridge aging-time <P-1>`

Parameter	Value	Meaning
`P-1`	`10..500000`	Enter a number in the given range.

19.3 show

Display device options and settings.

19.3.1 show mac-filter-table static

Display the MAC address filter table.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mac-filter-table static`

19.4 show

Display device options and settings.

19.4.1 show bridge aging-time

Address aging time.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show bridge aging-time`

19.5 show

Display device options and settings.

19.5.1 show mac-addr-table

Display the MAC address table.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mac-addr-table [<P-1>]`

Parameter	Value	Meaning
`P-1`	`a:b:c:d:e:f`	Enter a MAC address.
	`1..4042`	Enter a VLAN ID.

19.6 clear

Clear several items.

19.6.1 clear mac-addr-table

Clears the MAC address table.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear mac-addr-table`

20 GARP VLAN and Multicast Registration Protocol (GVRP and GMRP)

20.1 garp

Configure GARP protocols, GVRP for dynamic VLAN registration and GMRP for dynamic MAC registration.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `garp`

20.2 garp

Configure GARP parameters and protocols, GVRP for dynamic VLAN registration and GMRP for dynamic MAC registration on a port.

20.2.1 garp interface join-time

Set the GARP join time-interval. The join timer controls the interval between join message transmissions sent to applicant state machines. An instance of this timer is required on a per-Port, per-GARP participant basis.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `garp interface join-time <P-1>`

Parameter	Value	Meaning
`P-1`	`10..100`	Join time-interval in centiseconds.

20.2.2 garp interface leave-time

Set the GARP leave time-interval. The leave timer controls the period of time that the registrar state machine waits in the leave state before transiting to the empty state. An instance of the timer is required for each state machine in the leave state.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `garp interface leave-time <P-1>`

Parameter	Value	Meaning
`P-1`	`20..600`	Leave time-interval in centiseconds.

20.2.3 garp interface leave-all-time

Set the GARP leave-all time-interval. The leave all timer controls the frequency with which the leaveall state machine generates leaveall PDUs. The timer is required on a per-Port, per-GARP Participant basis.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `garp interface leave-all-time <P-1>`

Parameter	Value	Meaning
`P-1`	`200..6000`	Leave-All time-interval in centiseconds.

20.3 show

Display device options and settings.

20.3.1 show garp interface

Display the global configuration of GARP per interface.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show garp interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

20.4 show

Display device options and settings.

20.4.1 show mac-filter-table

Display MAC Address Filter information (unicast and multicast entries from protocols or from static entries).

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mac-filter-table`

21 Ethernet IP

21.1 ethernet-ip

Enable or disable the EtherNet/IP operation on this device. If disabled, the EtherNet/IP protocol is deactivated, but the EtherNet/IP MIBs can be accessed.

21.1.1 ethernet-ip operation

Enable or disable the EtherNet-IP(TM) operation on this device. If disabled, the EtherNet/IP protocol is deactivated, but the EtherNet/IP MIBs can be accessed.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `ethernet-ip operation`

no ethernet-ip operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no ethernet-ip operation`

21.1.2 ethernet-ip write-access

Enable or disable the write-access of the EtherNet/IP protocol. - Possible security risk, as EtherNet/IP communication is not authenticated - .

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `ethernet-ip write-access`

no ethernet-ip write-access

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no ethernet-ip write-access`

21.2 show

Display device options and settings.

21.2.1 show ethernet-ip

Display the Ethernet-IP settings.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show ethernet-ip`

21.3 copy

Copy different kinds of items.

21.3.1 copy eds-ethernet-ip system remote

Copy the EDS file from the device to a file server
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy eds-ethernet-ip system remote <P-1> [source-interface <P-2>]`

`[source-interface]`: Specify the source-interface to be used (physical or logical). The frames will not necessarily be sent on this interface, only the IP address of the interface will be used as source IP.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.
`P-2`	`slot no./port no.`	

21.3.2 copy eds-ethernet-ip system envm

Copy the EDS file from the device to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy eds-ethernet-ip system envm`

22 Ethernet Switch Configurator

22.1 network

Configure the inband and outband connectivity.

22.1.1 network ethernet-switch-conf operation

Enable/disable the Ethernet Switch Configurator protocol on this device.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network ethernet-switch-conf operation <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable the Ethernet Switch Configurator protocol.
	`disable`	Disable the Ethernet Switch Configurator protocol.

no network ethernet-switch-conf operation

Disable the option
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `no network ethernet-switch-conf operation <P-1>`

22.1.2 network ethernet-switch-conf mode

Set the access level for Ethernet Switch Configurator.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network ethernet-switch-conf mode <P-1>`

Parameter	Value	Meaning
`P-1`	`read-write`	Allow detection and configuration.
	`read-only`	Allow only detection, no configuration.

22.1.3 network ethernet-switch-conf blinking

Enable/disable the Ethernet Switch Configurator blinking sequence on this device. This preference is not saved in configuration
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network ethernet-switch-conf blinking`

no network ethernet-switch-conf blinking

Disable the option

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `no network ethernet-switch-conf blinking`

22.2 show

Display device options and settings.

22.2.1 show network ethernet-switch-conf

Display the Ethernet Switch Configurator settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show network ethernet-switch-conf`

23 Hypertext Transfer Protocol (HTTP)

23.1 http

Set HTTP parameters.

23.1.1 http port

Set the HTTP port number.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `http port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of the HTTP server (default: 80).

23.1.2 http server

Enable or disable the HTTP server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `http server`

no http server

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no http server`

23.2 show

Display device options and settings.

23.2.1 show http

Display the HTTP server information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show http`

24 HTTP Secure (HTTPS)

24.1 https

Set HTTPS parameters.

24.1.1 https server

Enable or disable the HTTPS server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `https server`

no https server

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no https server`

24.1.2 https port

Set the HTTPS port number.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `https port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of the web server (default: 443).

24.1.3 https fingerprint-type

Configure fingerprint type.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `https fingerprint-type <P-1>`

Parameter	Value	Meaning
`P-1`	`sha1`	Configure sha1 fingerprint
	`sha256`	Configure sha256 fingerprint

24.1.4 https certificate

Generate/Delete HTTPS X509/PEM certificate.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `https certificate <P-1>`

Parameter	Value	Meaning
`P-1`	`generate`	Generates the item
	`delete`	Deletes the item

24.2 copy

Copy different kinds of items.

24.2.1 copy httpscert remote

Copy X509/PEM certificate from a server to the specified destination.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy httpscert remote <P-1> nvm`

`nvm`: Copy HTTPS certificate (PEM) from a server to the device.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

24.3 show

Display device options and settings.

24.3.1 show https

Display the HTTPS server information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show https`

25 Integrated Authentification Server (IAS)

25.1 ias-users

Manage IAS Users and User Accounts.

25.1.1 ias-users add

Add a new IAS user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ias-users add <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

25.1.2 ias-users delete

Delete an existing IAS user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ias-users delete <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

25.1.3 ias-users enable

Enable IAS user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ias-users enable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

25.1.4 ias-users disable

Disable IAS user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ias-users disable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

25.1.5 ias-users password

Change IAS user password.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ias-users password <P-1> [<P-2>]`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`string`	Enter a user-defined text, max. 64 characters.

25.2 show

Display device options and settings.

25.2.1 show ias-users

Display the IAS users and user accounts information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show ias-users`

26 IEC 61850 MMS Server

26.1 iec61850-mms

Configure the IEC61850 MMS Server settings.

26.1.1 iec61850-mms operation

Enable or disable the IEC61850 MMS Server. The MMS server facilitates real-time distribution of data and supervisory control functions for substations.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `iec61850-mms operation`

no iec61850-mms operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no iec61850-mms operation`

26.1.2 iec61850-mms write-access

Enable or disable the Write-Access on IEC61850 bridge objects via MMS. Write services allow the MMS client to access application content. - Possible security risk, as MMS communication is not authenticated -

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `iec61850-mms write-access`

no iec61850-mms write-access

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no iec61850-mms write-access`

26.1.3 iec61850-mms port

Defines the port number of the IEC61850 MMS server (default: 102).

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `iec61850-mms port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of the IEC61850 MMS server (default: 102).

26.1.4 iec61850-mms max-sessions

Defines the maximum number of concurrent IEC61850 MMS sessions (default: 5).

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `iec61850-mms max-sessions <P-1>`

Parameter	Value	Meaning
`P-1`	`1..15`	Maximum number of concurrent IEC61850 MMS sessions (default: 5).

26.1.5 iec61850-mms technical-key

Defines the IEC61850 MMS Technical Key (default: KEY).

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `iec61850-mms technical-key <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a IEC61850-7-2 Ed. VisibleString, max. 32 characters. The following characters are allowed: VisibleString (FROM ('A'|'a'|'B'|'b'|'C'|'c'|'D'|'d'|'E'|'e'|'F'|'f'| 'G'|'g'|'H'|'h'|'I'|'i'|'J'|'j'|'K'|'k'|'L'|'l'| 'M'|'m'|'N'|'n'|'O'|'o'|'P'|'p'|'Q'|'q'|'R'|'r'| 'S'|'s'|'T'|'t'|'U'|'u'|'V'|'v'|'W'|'w'|'X'|'x'| 'Y'|'y'|'Z'|'z'|'_'|'0'|'1'|'2'|'3'|'4'|'5'|'6'| '7'|'8'|'9')

26.2 show

Display device options and settings.

26.2.1 show iec61850-mms

Display the IEC61850 MMS server settings.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show iec61850-mms`

27 IGMP Snooping

27.1 igmp-snooping

Configure IGMP snooping.

27.1.1 igmp-snooping mode

Enable or disable IGMP snooping.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping mode`

no igmp-snooping mode

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no igmp-snooping mode`

27.1.2 igmp-snooping querier mode

Enable or disable IGMP snooping querier on the system.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping querier mode`

no igmp-snooping querier mode

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no igmp-snooping querier mode`

27.1.3 igmp-snooping querier query-interval

Sets the IGMP querier query interval time (1-1800) in seconds.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping querier query-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`1..1800`	Enter a number in the given range.

27.1.4 igmp-snooping querier timer-expiry

Sets the IGMP querier timer expiration period (60-300) in seconds.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping querier timer-expiry <P-1>`

Parameter	Value	Meaning
`P-1`	`60..300`	Enter a number in the given range.

27.1.5 igmp-snooping querier version

Sets the IGMP version (1-3) of the query.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping querier version <P-1>`

Parameter	Value	Meaning
`P-1`	`1..3`	IGMP snooping querier's protocol version(1 to 3,default: 2).

27.1.6 igmp-snooping forward-unknown

Configure if and how unknown multicasts are forwarded.The setting can be discard, flood or query-ports.The default is flood.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping forward-unknown <P-1>`

Parameter	Value	Meaning
`P-1`	`discard`	Unknown multicast frames will be discarded.
	`flood`	Unknown multicast frames will be flooded.

27.2 igmp-snooping

Configure IGMP snooping.

27.2.1 igmp-snooping vlan-id

Configure the VLAN parameters.
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping vlan-id <P-1> mode fast-leave groupmembership-interval <P-2> maxresponse <P-3> mcrtrexpiretime <P-4> querier mode address <P-5> forward-known <P-6> forward-all <P-7> static-query-port <P-8> automatic-mode <P-9>`

`mode`: Enable or disable IGMP snooping per VLAN.

`fast-leave`: Enable or disable IGMP snooping fast-leave per VLAN.

`groupmembership-interval`: Set IGMP group membership interval time (2-3600) in seconds per VLAN.

`maxresponse`: Set the igmp maximum response time (1-25) in seconds per VLAN.

`mcrtrexpiretime`: Sets the multicast router present expiration time (0-3600) in seconds per VLAN.

`querier`: Set IGMP snooping querier on the system.

`mode`: Enable or disable IGMP snooping querier per VLAN.

`address`: Set IGMP snooping querier address on the system using a VLAN.

`forward-known`: Sets the mode how known multicast packets will be treated.The default value is registered-ports-only(2).

`forward-all`: Enable or disable IGMP snooping forward-all.

`static-query-port`: Enable or disable IGMP snooping static-query-port.

`automatic-mode`: Enable or disable IGMP snooping automatic-mode.

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.
`P-2`	`2..3600`	Enter a number in the given range.
`P-3`	`1..25`	Enter a number in the given range.
`P-4`	`0..3600`	Enter a number in the given range.
`P-5`	`a.b.c.d`	IP address.
`P-6`	`query-and-registered-ports`	Addition of query ports to multicast filter portmasks.
	`registered-ports-only`	No addition of query ports to multicast filter portmasks.
`P-7`	`slot no./port no.`	
`P-8`	`slot no./port no.`	
`P-9`	`slot no./port no.`	

no igmp-snooping vlan-id

Disable the option

- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `no igmp-snooping vlan-id <P-1> mode fast-leave groupmembership-interval maxresponse mcrtrexpiretime querier mode address forward-known forward-all <P-7> static-query-port <P-8> automatic-mode <P-9>`

27.3 igmp-snooping

Configure IGMP snooping.

27.3.1 igmp-snooping mode

Enable or disable IGMP snooping per interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping mode`

no igmp-snooping mode

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no igmp-snooping mode`

27.3.2 igmp-snooping fast-leave

Enable or disable IGMP snooping fast-leave per interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping fast-leave`

no igmp-snooping fast-leave

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no igmp-snooping fast-leave`

27.3.3 igmp-snooping groupmembership-interval

Set IGMP group membership interval time (2-3600) in seconds per interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping groupmembership-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`2..3600`	Enter a number in the given range.

27.3.4 igmp-snooping maxresponse

Set the igmp maximum response time (1-25) in seconds per interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping maxresponse <P-1>`

Parameter	Value	Meaning
`P-1`	`1..25`	Enter a number in the given range.

27.3.5 igmp-snooping mcrtrexpiretime

Sets the multicast router present expiration time (0-3600) in seconds per interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping mcrtrexpiretime <P-1>`

Parameter	Value	Meaning
`P-1`	`0..3600`	Enter a number in the given range.

27.3.6 igmp-snooping static-query-port

Configures the interface as a static query interface in all VLANs.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `igmp-snooping static-query-port`

no igmp-snooping static-query-port

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no igmp-snooping static-query-port`

27.4 show

Display device options and settings.

27.4.1 show igmp-snooping global

Display the IGMP snooping global information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping global`

27.4.2 show igmp-snooping interface

Display the IGMP snooping interface information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

27.4.3 show igmp-snooping vlan

Display the IGMP snooping VLAN information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping vlan [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

27.4.4 show igmp-snooping querier global

Display the IGMP snooping querier information per VLAN.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping querier global`

27.4.5 show igmp-snooping querier vlan

Display the IGMP snooping querier VLAN information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping querier vlan [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

27.4.6 show igmp-snooping enhancements vlan

Display the IGMP snooping VLAN information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping enhancements vlan [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

27.4.7 show igmp-snooping enhancements unknown-filtering

Display the unknown multicast filtering information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping enhancements unknown-filtering`

27.4.8 show igmp-snooping statistics global

Display the number of control packets processed by CPU.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping statistics global`

27.4.9 show igmp-snooping statistics interface

Display the number of control packets processed by CPU per interface.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show igmp-snooping statistics interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

27.5 show

Display device options and settings.

27.5.1 show mac-filter-table igmp-snooping

Display the IGMP snooping entries in the MFDB table.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mac-filter-table igmp-snooping`

27.6 clear

Clear several items.

27.6.1 clear igmp-snooping

Clear all IGMP snooping entries.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear igmp-snooping`

28 Interface

28.1 shutdown

28.1.1 shutdown

Enable or disable the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `shutdown`

no shutdown

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no shutdown`

28.2 auto-negotiate

28.2.1 auto-negotiate

Enable or disable automatic negotiation on the interface. The cable crossing settings have no effect if auto-negotiation is enabled. In this case cable crossing is always set to auto. Cable crossing is set to the value chosen by the user if auto-negotiation is disabled.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `auto-negotiate`

no auto-negotiate

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no auto-negotiate`

28.3 auto-power-down

28.3.1 auto-power-down

Set the auto-power-down mode on the interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `auto-power-down <P-1>`

Parameter	Value	Meaning
`P-1`	`auto-power-save`	The port goes in a low power mode.
	`no-power-save`	The port does not use the automatic power save mode.

28.4 cable-crossing

28.4.1 cable-crossing

Cable crossing settings on the interface. The cable crossing settings have no effect if auto-negotiation is enabled. In this case cable crossing is always set to auto. Cable crossing is set to the value chosen by the user if auto-negotiation is disabled.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `cable-crossing <P-1>`

Parameter	Value	Meaning
`P-1`	`mdi`	The port does not use the crossover mode.
	`mdix`	The port uses the crossover mode.
	`auto-mdix`	The port uses the auto crossover mode.

28.5 linktraps

28.5.1 linktraps

Enable/disable link up/down traps on the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `linktraps`

no linktraps

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no linktraps`

28.6 speed

28.6.1 speed

Sets the speed and duplex setting for the interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `speed <P-1> [<P-2>]`

Parameter	Value	Meaning
`P-1`	`10`	10 MBit/s.
	`100`	100 MBit/s.
	`1000`	1000 MBit/s.
`P-2`	`full`	full duplex.
	`half`	half duplex.

28.7 name

28.7.1 name

Set or remove a descriptive name for the interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `name <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 64 characters.

28.8 power-state

28.8.1 power-state

Enable or disable the power state on the interface. The interface power state settings have no effect if the interface admin state is enabled.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `power-state`

no power-state

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no power-state`

28.9 mac-filter

28.9.1 mac-filter

static mac filter configuration
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `mac-filter <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	MAC address.
`P-2`	`1..4042`	Enter the VLAN ID.

no mac-filter

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no mac-filter <P-1> <P-2>`

28.10 show

Display device options and settings.

28.10.1 show port

Display the interface parameters.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

28.11 show

Display device options and settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show`

28.12 show

Display device options and settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show`

29 Interface Statistics

29.1 utilization

Configure the interface utilization parameters.

29.1.1 utilization control-interval

Add interval time to monitor the bandwidth utilization of the interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `utilization control-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`1..3600`	Add interval time to monitor the bandwidth utilization.

29.1.2 utilization alarm-threshold lower

Lower threshold value

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `utilization alarm-threshold lower <P-1>`

Parameter	Value	Meaning
`P-1`	`0..10000`	Add alarm threshold lower value for monitoring bandwidth utilization in hundredths of a percent.

29.1.3 utilization alarm-threshold upper

Upper threshold value

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `utilization alarm-threshold upper <P-1>`

Parameter	Value	Meaning
`P-1`	`0..10000`	Add alarm threshold upper value for monitoring bandwidth utilization in hundredths of a percent.

29.2 clear

Clear several items.

29.2.1 clear port-statistics

Clear all statistics counter.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear port-statistics`

29.3 show

Display device options and settings.

29.3.1 show interface counters

Display the interface counters.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show interface counters`

29.3.2 show interface utilization

Display the interface utilization.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show interface utilization [<P-1>]`

Parameter	Value	Meaning
P-1	slot no./port no.	

29.3.3 show interface statistics

Display the summary interface statistics.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show interface statistics [<P-1>]`

Parameter	Value	Meaning
P-1	slot no./port no.	

29.3.4 show interface ether-stats

Display the detailed interface statistics.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show interface ether-stats [<P-1>]`

Parameter	Value	Meaning
P-1	slot no./port no.	

30 Intern

30.1 help

Display the help text for various special keys.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `help`

30.2 logout

Exit this session.

- Mode: `The command is in every mode available.`
- Privilege Level: `any`
- Format: `logout`

30.3 history

Display a list of previously run commands.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `history`

30.4 vlan-mode

30.4.1 vlan-mode

Enter VLAN Configuration Mode.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `vlan-mode <P-1>`

Parameter	Value	Meaning
`P-1`	`all`	Select all VLAN configured.
	`vlan`	Enter single VLAN.
	`vlan range`	Enter VLAN range separated by hyphen e.g 1-4.
	`vlan list`	Enter VLAN list separated by comma e.g 2,4,6,... .
	`complex range`	Enter VLAN range and several VLAN separated by comma for a list and hyphen for ranges e.g 2-4,6-9,11.

30.4.2 vlan database

Enter VLAN database mode.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `vlan database`

30.5 exit

Exit from vlan mode.

- Mode: `VLAN Mode`
- Privilege Level: `Operator`
- Format: `exit`

30.6 end

Exit to exec mode.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `end`

30.7 serviceshell

Enter system mode.

30.7.1 serviceshell start

Start serviceshell prompt
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `serviceshell start`

30.7.2 serviceshell debug switch

Start switch debug shell.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `serviceshell debug switch`

30.7.3 serviceshell deactivate

Disable the service shell access permanently (Cannot be undone).
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `serviceshell deactivate`

30.8 traceroute

Trace route to a specified host.

30.8.1 traceroute maxttl

Set max TTL value.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `traceroute maxttl <P-1> [initttl <P-2>] [interval <P-3>] [count <P-4>] [size <P-5>] [port <P-6>]`

`[initttl]`: Initial TTL value.

`[interval]`: Timeout until probe failure.

`[count]`: Number of probes for each TTL.

`[size]`: Size of payload in bytes.

`[port]`: UDP destination port.

Parameter	Value	Meaning
P-1	1..255	Enter a number in the given range.
P-2	0..255	Enter a number in the given range.
P-3	1..60	Enter a number in the given range.
P-4	1..10	Enter a number in the given range.
P-5	0..65507	Enter a number in the given range.
P-6	1..65535	Enter port number between 1 and 65535

30.9 reboot

Reset the device (cold start).

30.9.1 reboot after

Schedule reboot after specified time.

- Mode: `All Privileged Modes`
- Privilege Level: `any`
- Format: `reboot after <P-1>`

Parameter	Value	Meaning
`P-1`	`0..2147483`	Enter Seconds Between 0 to 2147483. Setting 0 will clear scheduled Reboot if configured.

30.10 ping

Send ICMP echo packets to a specified IP address.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `ping`

30.11 show

Display device options and settings.

30.11.1 show reboot

Display the configured reboot in seconds.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show reboot`

30.11.2 show serviceshell

Display the service shell access.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show serviceshell`

31 Digital IO Module

31.1 digital-input

Digital Input related configuration.

31.1.1 digital-input admin-state

Enable or disable the polling for digital inputs.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `digital-input admin-state`

no digital-input admin-state

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no digital-input admin-state`

31.1.2 digital-input refresh-interval

Set refresh interval in milliseconds for digital inputs.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `digital-input refresh-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`1000..10000`	Refresh interval in milliseconds.

31.1.3 digital-input log-event io

Configure a single IO port.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `digital-input log-event io <P-1>`

Parameter	Value	Meaning
`P-1`	`MU/input`	Enter a Digital IO input on the power supply module in MU/input format.

no digital-input log-event io

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no digital-input log-event io <P-1>`

31.1.4 digital-input log-event all

Configure all IO ports.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `digital-input log-event all`

no digital-input log-event all

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no digital-input log-event all`

31.1.5 digital-input snmp-trap io

Configure a single IO port.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `digital-input snmp-trap io <P-1>`

Parameter	Value	Meaning
`P-1`	`MU/input`	Enter a Digital IO input on the power supply module in MU/input format.

no digital-input snmp-trap io

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no digital-input snmp-trap io <P-1>`

31.1.6 digital-input snmp-trap all

Configure all IO ports.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `digital-input snmp-trap all`

no digital-input snmp-trap all

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no digital-input snmp-trap all`

31.2 show

Display device options and settings.

31.2.1 show digital-input config

Display the global information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show digital-input config`

31.2.2 show digital-input io

Display the details about a single IO input port.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show digital-input io`

32 Internet Protocol Version 4 (IPv4)

32.1 network

Configure the inband and outband connectivity.

32.1.1 network protocol

Select DHCP, BOOTP or none as the network configuration protocol.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network protocol <P-1>`

Parameter	Value	Meaning
P-1	none	No network config protocol
	bootp	BOOTP
	dhcp	DHCP

32.1.2 network parms

Set network address, netmask and gateway
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network parms <P-1> <P-2> [<P-3>]`

Parameter	Value	Meaning
P-1	A.B.C.D	IP address.
P-2	A.B.C.D	IP address.
P-3	A.B.C.D	IP address.

32.1.3 network dhcp config-load

Enables/disables the DHCP options 4/42 (time servers) and 66/67 (Load config over TFTP on boot)on DHCP/BOOTP client.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network dhcp config-load <P-1>`

Parameter	Value	Meaning
P-1	enable	Enable the option.
	disable	Disable the option.

32.2 clear

Clear several items.

32.2.1 clear arp-table-switch

Clear the agent's ARP table (cache).

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear arp-table-switch`

32.3 show

Display device options and settings.

32.3.1 show network parms

Display the network settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show network parms`

32.3.2 show network dhcp

Display the additional settings for the DHCP/BOOTP client

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show network dhcp`

32.4 show

Display device options and settings.

32.4.1 show arp

Display the ARP table.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show arp`

33 Link Backup

33.1 link-backup

Configure Link Backup parameters.

33.1.1 link-backup operation

Enable or disable Link Backup.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `link-backup operation`

no link-backup operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no link-backup operation`

33.2 link-backup

Configure Link Backup parameters.

33.2.1 link-backup add

Add a Link Backup interface pair.
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `link-backup add <P-1> [failback-time <P-2>] [description <P-3>]`

`[failback-time]`: FailBack time in seconds for the interface pair.

`[description]`: Description for the interface pair.

Parameter	Value	Meaning
P-1	slot no./port no.	
P-2	0..3600	FailBack time interval.(default: 30)
P-3	string	Enter a user-defined text, max. 256 characters.

33.2.2 link-backup delete

Delete the associated backup interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `link-backup delete <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

33.2.3 link-backup modify

Modify a Link Backup interface pair.
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `link-backup modify <P-1> [failback-status <P-2>] [failback-time <P-3>] [description <P-4>] [status <P-5>]`

`[failback-status]`: Modify failback status.(default: enabled)

`[failback-time]`: Modify failback time.(default: 30)

`[description]`: Description for the interface pair.

`[status]`: Enable or disable a Link Backup interface pair entry.

Parameter	Value	Meaning
P-1	slot no./port no.	
P-2	enable	Enable the option.
	disable	Disable the option.
P-3	0..3600	FailBack time interval.(default: 30)
P-4	string	Enter a user-defined text, max. 256 characters.
P-5	enable	Enable the option.
	disable	Disable the option.

33.3 show

Display device options and settings.

33.3.1 show link-backup operation

Display the Link Backup global information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show link-backup operation`

33.3.2 show link-backup pairs

Display the Link Backup interface pairs.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show link-backup pairs [<P-1>] [<P-2>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	
`P-2`	`slot no./port no.`	

34 Link Layer Discovery Protocol (LLDP)

34.1 lldp

Configure of Link Layer Discovery Protocol.

34.1.1 lldp operation

Enable or disable the LLDP operational state.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp operation`

no lldp operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no lldp operation`

34.1.2 lldp config chassis admin-state

Enable or disable the LLDP operational state.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp config chassis admin-state <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable the option.
	`disable`	Disable the option.

34.1.3 lldp config chassis notification-interval

Enter the LLDP notification interval in seconds.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp config chassis notification-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`5..3600`	Enter a number in the given range.

34.1.4 lldp config chassis re-init-delay

Enter the LLDP re-initialization delay in seconds.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp config chassis re-init-delay <P-1>`

Parameter	Value	Meaning
`P-1`	`1..10`	Enter a number in the given range.

34.1.5 lldp config chassis tx-delay

Enter the LLDP transmit delay in seconds (tx-delay smaller than (0.25 × tx-interval))
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp config chassis tx-delay <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8192`	Enter a number in the given range (tx-delay smaller than (0.25 × tx-interval)

34.1.6 lldp config chassis tx-hold-multiplier

Enter the LLDP transmit hold multiplier.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp config chassis tx-hold-multiplier <P-1>`

Parameter	Value	Meaning
`P-1`	`2..10`	Enter a number in the given range.

34.1.7 lldp config chassis tx-interval

Enter the LLDP transmit interval in seconds.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp config chassis tx-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`5..32768`	Enter a number in the given range.

34.2 show

Display device options and settings.

34.2.1 show lldp global

Display the LLDP global configurations.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp global`

34.2.2 show lldp port

Display the port specific LLDP configurations.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp port [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

34.2.3 show lldp remote-data

Remote information collected with LLDP.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp remote-data [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

34.3 lldp

Configure of Link Layer Discovery Protocol on a port.

34.3.1 lldp admin-state

Configure how the interface processes LLDP frames.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp admin-state <P-1>`

Parameter	Value	Meaning
`P-1`	`tx-only`	Interface will only transmit LLDP frames. Received frames are not processed.
	`rx-only`	Interface will only receive LLDP frames. Frames are not transmitted.
	`tx-and-rx`	Interface will transmit and receive LLDP frames. This is the default setting.
	`disable`	Interface will neither transmit nor process received LLDP frames.

34.3.2 lldp fdb-mode

Configure the LLDP FDB mode for this interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp fdb-mode <P-1>`

Parameter	Value	Meaning
`P-1`	`lldp-only`	Collected remote data will be based on received LLDP frames only.
	`mac-only`	Collected remote data will be based on the switch's FDB entries only.
	`both`	Collected remote data will be based on received LLDP frames as well as on the switch's FDB entries.
	`auto-detect`	As long as no LLDP frames are received, the collected remote data will be based on the switch's FDB entries only. After the first LLDP frame is received, the remote data will be based on received LLDP frames only. This is the default setting.

34.3.3 lldp max-neighbors

Enter the LLDP max neighbors for interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp max-neighbors <P-1>`

Parameter	Value	Meaning
`P-1`	`1..50`	Enter a number in the given range.

34.3.4 lldp notification

Enable or disable the LLDP notification operation for interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp notification`

no lldp notification

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp notification`

34.3.5 lldp tlv inline-power

Enable or disable inline-power TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv inline-power`

no lldp tlv inline-power

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv inline-power`

34.3.6 lldp tlv link-aggregation

Enable or disable link-aggregation TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv link-aggregation`

no lldp tlv link-aggregation

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv link-aggregation`

34.3.7 lldp tlv mac-phy-config-state

Enable or disable mac-phy-config-state TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv mac-phy-config-state <P-1>`

Parameter	Value	Meaning
`P-1`	`[cr]`	Enable the Bit.

no lldp tlv mac-phy-config-state

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv mac-phy-config-state <P-1>`

34.3.8 lldp tlv max-frame-size

Enable or disable max-frame-size TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv max-frame-size <P-1>`

Parameter	Value	Meaning
`P-1`	`[cr]`	Enable the Bit.

no lldp tlv max-frame-size

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv max-frame-size <P-1>`

34.3.9 lldp tlv mgmt-addr

Enable or disable mgmt-addr TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv mgmt-addr`

no lldp tlv mgmt-addr

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv mgmt-addr`

34.3.10 lldp tlv port-desc

Enable or disable port description TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv port-desc <P-1>`

Parameter	Value	Meaning
`P-1`	`[cr]`	Enable the Bit.

no lldp tlv port-desc

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv port-desc <P-1>`

34.3.11 lldp tlv port-vlan

Enable or disable port-vlan TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv port-vlan`

no lldp tlv port-vlan

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv port-vlan`

34.3.12 lldp tlv protocol

Enable or disable protocol TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv protocol`

no lldp tlv protocol

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv protocol`

34.3.13 lldp tlv sys-cap

Enable or disable system capabilities TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv sys-cap <P-1>`

Parameter	Value	Meaning
`P-1`	`[cr]`	Enable the Bit.

no lldp tlv sys-cap

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv sys-cap <P-1>`

34.3.14 lldp tlv sys-desc

Enable or disable system description TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv sys-desc <P-1>`

Parameter	Value	Meaning
`P-1`	`[cr]`	Enable the Bit.

no lldp tlv sys-desc

Disable the option
- Mode: `Interface Range Mode`

- Privilege Level: `Operator`
- Format: `no lldp tlv sys-desc <P-1>`

34.3.15 lldp tlv sys-name

Enable or disable system name TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv sys-name <P-1>`

Parameter	Value	Meaning
`P-1`	`[cr]`	Enable the Bit.

no lldp tlv sys-name

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv sys-name <P-1>`

34.3.16 lldp tlv vlan-name

Enable or disable vlan name TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv vlan-name`

no lldp tlv vlan-name

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv vlan-name`

34.3.17 lldp tlv protocol-based-vlan

Enable or disable protocol-based vlan TLV transmission.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp tlv protocol-based-vlan`

no lldp tlv protocol-based-vlan

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp tlv protocol-based-vlan`

35 Media Endpoint Discovery LLDP-MED

35.1 lldp

Configure of Link Layer Discovery Protocol on a port.

35.1.1 lldp med confignotification

Enable or disable LLDP-MED notification send for this interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp med confignotification`

no lldp med confignotification

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp med confignotification`

35.1.2 lldp med transmit-tlv capabilities

Include/Exclude LLDP MED capabilities TLV.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp med transmit-tlv capabilities`

no lldp med transmit-tlv capabilities

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no lldp med transmit-tlv capabilities`

35.1.3 lldp med transmit-tlv network-policy

Include/Exclude LLDP network policy TLV.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `lldp med transmit-tlv network-policy`

no lldp med transmit-tlv network-policy

Disable the option
- Mode: `Interface Range Mode`

- Privilege Level: `Operator`
- Format: `no lldp med transmit-tlv network-policy`

35.2 lldp

Configure of Link Layer Discovery Protocol.

35.2.1 lldp med faststartrepeatcount

Configure LLDP-MED fast start repeat count.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `lldp med faststartrepeatcount <P-1>`

Parameter	Value	Meaning
`P-1`	`1..10`	Enter a value representing the number of LLDP PDUs that will be transmitted.Default is 3.

35.3 show

Display device options and settings.

35.3.1 show lldp med global

Display a summary of the current LLDP-MED configuration.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp med global`

35.3.2 show lldp med interface

Display the current LLDP-MED configuration on a specific port.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp med interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

35.3.3 show lldp med local-device

Display detailed information about the LLDP-MED data
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp med local-device <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

35.3.4 show lldp med remote-device detail

Display the LLDP-MED detail configuration for a remote device.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp med remote-device detail <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

35.3.5 show lldp med remote-device summary

Display the LLDP-MED summary configuration for a remote device.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show lldp med remote-device summary [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

36 Logging

36.1 logging

Logging configuration.

36.1.1 logging audit-trail

Add a comment for the audit trail.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging audit-trail <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 80 characters.

36.1.2 logging buffered severity

Configure the minimum severity level to be logged to the high priority buffer.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging buffered severity <P-1>`

Parameter	Value	Meaning
`P-1`	`emergency`	System is unusable. System failure has occurred.
	`alert`	Action must be taken immediately. Unrecoverable failure of a component. System failure likely.
	`critical`	Recoverable failure of a component that may lead to system failure.
	`error`	Error conditions. Recoverable failure of a component.
	`warning`	Minor failure, e.g. misconfiguration of a component.
	`notice`	Normal but significant conditions.
	`informational`	Informational messages.
	`debug`	Debug-level messages.
	`0`	Same as emergency
	`1`	Same as alert
	`2`	Same as critical
	`3`	Same as error
	`4`	Same as warning
	`5`	Same as notice
	`6`	Same as informational
	`7`	Same as debug

36.1.3 logging host add

Add a new logging host.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging host add <P-1> addr <P-2>`

`addr`: Enter the IP address of the server.

Parameter	Value	Meaning
`P-1`	`1..8`	Syslog server entry index
`P-2`	`a.b.c.d`	IP address.

36.1.4 logging host delete

Delete a logging host.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging host delete <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	Syslog server entry index

36.1.5 logging host enable

Enable a logging host.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging host enable <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	Syslog server entry index

36.1.6 logging host disable

Disable a logging host.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging host disable <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	Syslog server entry index

36.1.7 logging host modify

Modify an existing logging host.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging host modify <P-1> [addr <P-2>]`

`[addr]`: Enter the IP address of the server.

Parameter	Value	Meaning
`P-1`	`1..8`	Syslog server entry index
`P-2`	`a.b.c.d`	IP address.

36.1.8 logging syslog operation

Enable or disable the syslog client.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging syslog operation`

no logging syslog operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no logging syslog operation`

36.1.9 logging current-console operation

Enable or disable logging messages to the current remote console.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging current-console operation`

no logging current-console operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no logging current-console operation`

36.1.10 logging current-console severity

Configure the minimum severity level to be sent to the current remote console.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging current-console severity <P-1>`

Parameter	Value	Meaning
`P-1`	`emergency`	System is unusable. System failure has occurred.
	`alert`	Action must be taken immediately. Unrecoverable failure of a component. System failure likely.
	`critical`	Recoverable failure of a component that may lead to system failure.
	`error`	Error conditions. Recoverable failure of a component.
	`warning`	Minor failure, e.g. misconfiguration of a component.
	`notice`	Normal but significant conditions.
	`informational`	Informational messages.
	`debug`	Debug-level messages.
	`0`	Same as emergency
	`1`	Same as alert
	`2`	Same as critical
	`3`	Same as error
	`4`	Same as warning
	`5`	Same as notice
	`6`	Same as informational
	`7`	Same as debug

36.1.11 logging console operation

Enable or disable logging to the local V.24 console.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging console operation`

no logging console operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no logging console operation`

36.1.12 logging console severity

Configure the minimum severity level to be logged to the V.24 console.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging console severity <P-1>`

Parameter	Value	Meaning
`P-1`	`emergency`	System is unusable. System failure has occurred.
	`alert`	Action must be taken immediately. Unrecoverable failure of a component. System failure likely.
	`critical`	Recoverable failure of a component that may lead to system failure.
	`error`	Error conditions. Recoverable failure of a component.
	`warning`	Minor failure, e.g. misconfiguration of a component.
	`notice`	Normal but significant conditions.
	`informational`	Informational messages.
	`debug`	Debug-level messages.
	`0`	Same as emergency
	`1`	Same as alert
	`2`	Same as critical
	`3`	Same as error
	`4`	Same as warning
	`5`	Same as notice
	`6`	Same as informational
	`7`	Same as debug

36.2 show

Display device options and settings.

36.2.1 show logging buffered

Display the buffered (in-memory) log entries.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging buffered [<P-1>]`

Parameter	Value	Meaning
`P-1`	`string`	<filter> Enter a comma separated list of severity ranges, numbers or enum strings are allowed. Example: 0-1,informational-debug

36.2.2 show logging traplogs

Display the trap log entries.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging traplogs`

36.2.3 show logging console

Display the console logging configurations.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging console`

36.2.4 show logging persistent

Display the persistent logging configurations.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging persistent [logfiles]`

`[logfiles]`: List the persistent log files.

36.2.5 show logging syslog

Display the current syslog operational setting.
- Mode: `The command is in every mode available.`

- Privilege Level: `Guest`
- Format: `show logging syslog`

36.2.6 show logging host

Display a list of logging hosts currently configured.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging host`

36.3 copy

Copy different kinds of items.

36.3.1 copy eventlog buffered envm

Copy a buffered log from the device to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy eventlog buffered envm <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.

36.3.2 copy eventlog buffered remote

Copy a buffered log from the device to a file server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy eventlog buffered remote <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

36.3.3 copy eventlog persistent

Copy the persistent logs from the device to an envm or a file server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy eventlog persistent <P-1> envm <P-2> remote <P-3>`

`envm`: Copy the persistent log from the device to external non-volatile memory.

`remote`: Copy the persistent logs from the device to a file server.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.
`P-3`	`string`	Enter a user-defined text, max. 128 characters.

36.3.4 copy traplog system envm

Copy the traplog from the device to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy traplog system envm <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.

36.3.5 copy traplog system remote

Copy the traplog from the device to a file server
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `copy traplog system remote <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

36.3.6 copy audittrail system envm

Copy the audit trail from the device to external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator, Auditor`
- Format: `copy audittrail system envm <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 32 characters.

36.3.7 copy audittrail system remote

Copy the audit trail from the device to a file server.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator, Auditor`
- Format: `copy audittrail system remote <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

36.4 clear

Clear several items.

36.4.1 clear logging buffered

Clear buffered log from memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `clear logging buffered`

36.4.2 clear logging persistent

Clear persistent log from memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `clear logging persistent`

36.4.3 clear eventlog

Clear the event log entries from memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `clear eventlog`

37 MAC Notification

37.1 mac

Set MAC parameters.

37.1.1 mac notification operation

Enable or disable MAC notification globally.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac notification operation`

no mac notification operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no mac notification operation`

37.1.2 mac notification interval

Set MAC notification interval in seconds.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mac notification interval <P-1>`

Parameter	Value	Meaning
`P-1`	`0..2147483647`	Enter a number in the given range.

37.2 mac

MAC interface commands.

37.2.1 mac notification operation

Enable or disable MAC notification on this interface.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `mac notification operation`

no mac notification operation

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no mac notification operation`

37.3 show

Display device options and settings.

37.3.1 show mac notification global

Display the MAC notification global information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mac notification global`

37.3.2 show mac notification interface

Display the MAC notification interface information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mac notification interface`

38 Management Access

38.1 network

Configure the inband and outband connectivity.

38.1.1 network management access web timeout

Set the web interface idle timeout.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `network management access web timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`0..160`	Idle timeout of a session in minutes (default: 5).

38.1.2 network management access add

Add a new entry with index.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `network management access add <P-1> [ip <P-2>] [mask <P-3>] [http <P-4>] [https <P-5>] [snmp <P-6>] [telnet <P-7>] [iec61850-mms <P-8>] [modbus-tcp <P-9>] [ssh <P-10>] [ethernet-ip <P-11>]`

`[ip]`: Configure IP address which should have access to management.

`[mask]`: Configure network mask to allow a subnet for management access.

`[http]`: Configure if HTTP is allowed to have management access.

`[https]`: Configure if HTTPS is allowed to have management access.

`[snmp]`: Configure if SNMP is allowed to have management access.

`[telnet]`: Configure if TELNET is allowed to have management access.

`[modbus-tcp]`: Configure if Modbus TCP/IP is allowed to have management access.

`[ssh]`: Configure if SSH is allowed to have management access.

`[ethernet-ip]`: Configure if EtherNet/IP is allowed to have management access.

Parameter	Value	Meaning
`P-1`	`1..16`	Pool entry index.
`P-2`	`a.b.c.d`	IP address.
`P-3`	`0..32`	Prefix length netmask.
`P-4`	`enable`	Enable the option.
	`disable`	Disable the option.

Parameter	Value	Meaning
P-5	enable	Enable the option.
	disable	Disable the option.
P-6	enable	Enable the option.
	disable	Disable the option.
P-7	enable	Enable the option.
	disable	Disable the option.
P-8	enable	Enable the option.
	disable	Disable the option.
P-9	enable	Enable the option.
	disable	Disable the option.
P-10	enable	Enable the option.
	disable	Disable the option.
P-11	enable	Enable the option.
	disable	Disable the option.

38.1.3 network management access delete

Delete an entry with index.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `network management access delete <P-1>`

Parameter	Value	Meaning
P-1	1..16	Pool entry index.

38.1.4 network management access modify

Modify an entry with index.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `network management access modify <P-1> ip <P-2> mask <P-3> http <P-4> https <P-5> snmp <P-6> telnet <P-7> iec61850-mms <P-8> modbus-tcp <P-9> ssh <P-10> ethernet-ip <P-11>`

`ip`: Configure ip-address which should have access to management.

`mask`: Configure network mask to allow a subnet for management access.

`http`: Configure if HTTP is allowed to have management access.

`https`: Configure if HTTPS is allowed to have management access.

`snmp`: Configure if SNMP is allowed to have management access.

`telnet`: Configure if TELNET is allowed to have management access.

`iec61850-mms`: Configure if IEC61850-MMS is allowed to have management access.

`modbus-tcp`: Configure if Modbus TCP/IP is allowed to have management access.

`ssh`: Configure if SSH is allowed to have management access.

`ethernet-ip`: Configure if EtherNet/IP is allowed to have management access.

Parameter	Value	Meaning
`P-1`	`1..16`	Pool entry index.
`P-2`	`a.b.c.d`	IP address.
`P-3`	`0..32`	Prefix length netmask.
`P-4`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-5`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-6`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-7`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-8`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-9`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-10`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-11`	`enable`	Enable the option.
	`disable`	Disable the option.

38.1.5 network management access operation

Enable/Disable operation for RMA.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `network management access operation`

no network management access operation

Disable the option
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `no network management access operation`

38.1.6 network management access status

Activate/Deactivate an entry.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `network management access status <P-1>`

Parameter	Value	Meaning
`P-1`	`1..16`	Pool entry index.

no network management access status

Disable the option
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `no network management access status <P-1>`

38.2 show

Display device options and settings.

38.2.1 show network management access global

Display the global restricted management access preferences.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show network management access global`

38.2.2 show network management access rules

Display the restricted management access rules.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show network management access rules [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..16`	Pool entry index.

39 Management Address

39.1 network

Configure the inband and outband connectivity.

39.1.1 network management

Configure management access, VLAN and address.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network management`

39.2 show

Display device options and settings.

39.2.1 show network management

Show configuration of management access, VLAN and address.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show network management`

40 Modbus

40.1 modbus-tcp

Configure Modbus TCP/IP server settings.

40.1.1 modbus-tcp operation

Enable or disable the Modbus TCP/IP server.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `modbus-tcp operation`

no modbus-tcp operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no modbus-tcp operation`

40.1.2 modbus-tcp write-access

Enable or disable the write-access on Modbus TCP/IP registers. - Possible security risk, as Modbus TCP/IP communication is not authenticated - .
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `modbus-tcp write-access`

no modbus-tcp write-access

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no modbus-tcp write-access`

40.1.3 modbus-tcp port

Defines the port number of the Modbus TCP/IP server (default: 502).
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `modbus-tcp port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Enter port number between 1 and 65535

40.1.4 modbus-tcp max-sessions

Defines the maximum number of concurrent Modbus TCP/IP sessions (default: 5).

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `modbus-tcp max-sessions <P-1>`

Parameter	Value	Meaning
`P-1`	`1..5`	Maximum number of concurrent Modbus TCP/IP server sessions (default: 5).

40.2 show

Display device options and settings.

40.2.1 show modbus-tcp

Display the Modbus TCP/IP server settings.

- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show modbus-tcp`

41 Media Redundancy Protocol (MRP)

41.1 mrp

Configure the MRP settings.

41.1.1 mrp domain modify advanced-mode

Configure the MRM Advanced Mode.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify advanced-mode <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable the option.
	`disable`	Disable the option.

41.1.2 mrp domain modify manager-priority

Configure the MRM priority.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify manager-priority <P-1>`

Parameter	Value	Meaning
`P-1`	`0..65535`	Enter the MRM priority (default: 32768).

41.1.3 mrp domain modify mode

Configure the role of the MRP device.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify mode <P-1>`

Parameter	Value	Meaning
`P-1`	`client`	The device will be in the role of a ring client (MRC).
	`manager`	The device will be in the role of a ring manager (MRM).

41.1.4 mrp domain modify name

Configure the logical name of the MRP domain.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify name <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 255 characters.

41.1.5 mrp domain modify operation

Enable or disable the MRP function.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify operation <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable the option.
	`disable`	Disable the option.

41.1.6 mrp domain modify port primary

Configure the primary ring port.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify port primary <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

41.1.7 mrp domain modify port secondary

Configure the secondary ring port.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify port secondary <P-1> [fixed-backup <P-2>]`

`[fixed-backup]`: Enable or disable the secondary ring port of the manager to be the backup port permanently.

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	
`P-2`	`enable`	Enable the option.
	`disable`	Disable the option.

41.1.8 mrp domain modify recovery-delay

Configure the MRM Recovery Delay.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify recovery-delay <P-1>`

Parameter	Value	Meaning
`P-1`	`500ms`	Maximum recovery delay of 500ms in the MRP domain.
	`200ms`	Maximum recovery delay of 200ms in the MRP domain.

41.1.9 mrp domain modify round-trip-delay

Configure the round-trip-delay counters.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify round-trip-delay <P-1>`

Parameter	Value	Meaning
`P-1`	`reset`	Reset the round-trip-delay counters.

41.1.10 mrp domain modify vlan

Configure the VLAN identifier of the MRP domain.\n(VLAN ID 0 means that no VLAN is used).
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain modify vlan <P-1>`

Parameter	Value	Meaning
`P-1`	`0..4042`	VLAN identifier of the MRP domain.\n(VLAN ID 0 means that no VLAN is used).

41.1.11 mrp domain add default-domain

Default MRP domain ID.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain add default-domain`

41.1.12 mrp domain add domain-id

MRP domain ID. Format: 16 bytes in decimal notation.\n(Example: 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16).

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain add domain-id <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<domain id> MRP domain ID. Format: 16 bytes in decimal notation.\n(Example: 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16).

41.1.13 mrp domain delete

Delete the current MRP domain.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp domain delete`

41.1.14 mrp operation

Enable or disable MRP.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `mrp operation`

no mrp operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no mrp operation`

41.2 show

Display device options and settings.

41.2.1 show mrp

Display the MRP settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show mrp`

42 Out-of-band Management

42.1 network

Configure the inband and outband connectivity.

42.1.1 network usb operation

Enable or disable the USB out-of-band management.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network usb operation`

no network usb operation

Disable the option
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `no network usb operation`

42.1.2 network usb parms

Set USB out-of-band IP address and subnet mask.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network usb parms <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`<a.b.c.d>`	IP address.
`P-2`	`<a.b.c.d>`	Netmask.

42.2 show

Display device options and settings.

42.2.1 show network usb

Show USB out-of-band management configuration.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Guest`
- Format: `show network usb`

43 Port Monitor

43.1 port-monitor

Configure the Port Monitor condition settings.

43.1.1 port-monitor operation

Enable or disable the port monitor.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `port-monitor operation`

no port-monitor operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no port-monitor operation`

43.2 port-monitor

Configure the Port Monitor condition settings.

43.2.1 port-monitor condition crc-fragments interval

Configure the measure interval in seconds (5-180s) for CRC-Fragment detection. Default 10.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition crc-fragments interval <P-1>`

Parameter	Value	Meaning
`P-1`	`5..180`	Enter a number in the given range.

43.2.2 port-monitor condition crc-fragments count

Configure the CRC-Fragment counter in parts per million (1-1000000 [ppm]). Default 1000 [ppm].
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition crc-fragments count <P-1>`

Parameter	Value	Meaning
`P-1`	`1..1000000`	Enter a number in the given range.

43.2.3 port-monitor condition crc-fragments mode

Enable or disable CRC-Fragments condition to trigger an action.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition crc-fragments mode`

no port-monitor condition crc-fragments mode

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no port-monitor condition crc-fragments mode`

43.2.4 port-monitor condition link-flap interval

Configure the measure interval in seconds (1-180s) for Link Flap detection. Default 10.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition link-flap interval <P-1>`

Parameter	Value	Meaning
`P-1`	`1..180`	Enter a number in the given range.

43.2.5 port-monitor condition link-flap count

Configure the Link Flap counter (1-100). Default 5.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition link-flap count <P-1>`

Parameter	Value	Meaning
`P-1`	`1..100`	Enter a number in the given range.

43.2.6 port-monitor condition link-flap mode

Enable or disable link-flap condition to trigger an action.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition link-flap mode`

no port-monitor condition link-flap mode

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no port-monitor condition link-flap mode`

43.2.7 port-monitor condition duplex-mismatch mode

Enable or disable duplex mismatch detection condition to trigger an action.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition duplex-mismatch mode`

no port-monitor condition duplex-mismatch mode

Disable the option
- Mode: `Interface Range Mode`

- Privilege Level: `Operator`
- Format: `no port-monitor condition duplex-mismatch mode`

43.2.8 port-monitor condition overload-detection traffic-type

Configure Overload detection condition traffic type.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition overload-detection traffic-type <P-1>`

Parameter	Value	Meaning
`P-1`	`all`	All packets.
	`bc`	Broadcast packets.
	`bc-mc`	Broadcast and multicast packets.

43.2.9 port-monitor condition overload-detection unit

Configure Overload detection condition threshold type.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition overload-detection unit <P-1>`

Parameter	Value	Meaning
`P-1`	`pps`	Packets per second.
	`kbps`	Kilobits per second.

43.2.10 port-monitor condition overload-detection upper-threshold

Configure Overload detection condition threshold type upper-threshold.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition overload-detection upper-threshold <P-1>`

Parameter	Value	Meaning
`P-1`	`0..10000000`	Enter a number in the given range.

43.2.11 port-monitor condition overload-detection lower-threshold

Configure Overload detection condition threshold type lower-threshold.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition overload-detection lower-threshold <P-1>`

Parameter	Value	Meaning
`P-1`	`0..10000000`	Enter a number in the given range.

43.2.12 port-monitor condition overload-detection polling-interval

Configure Overload detection condition detection interval.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition overload-detection polling-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`1..20`	Enter a number in the given range.

43.2.13 port-monitor condition overload-detection mode

Enable or disable Overload-Detection condition to trigger an action.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition overload-detection mode`

no port-monitor condition overload-detection mode

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no port-monitor condition overload-detection mode`

43.2.14 port-monitor condition speed-duplex mode

Enable or disable link speed and duplex condition to trigger an action.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition speed-duplex mode`

no port-monitor condition speed-duplex mode

Disable the option
- Mode: `Interface Range Mode`

- Privilege Level: `Operator`
- Format: `no port-monitor condition speed-duplex mode`

43.2.15 port-monitor condition speed-duplex speed

Set speed-duplex combination.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition speed-duplex speed [<P-1>] [<P-2>] [<P-3>] [<P-4>] [<P-5>] [<P-6>]`

Parameter	Value	Meaning
`P-1`	`[hdx10]`	10 Mbit/s - half duplex
`P-2`	`[fdx10]`	10 Mbit/s - full duplex
`P-3`	`[hdx100]`	100 Mbit/s - half duplex
`P-4`	`[fdx100]`	100 Mbit/s - full duplex
`P-5`	`[fdx-1000]`	1000 Mbit/s - full duplex
`P-6`	`[fdx-2500]`	2500 Mbit/s - full duplex

43.2.16 port-monitor condition speed-duplex clear

Clear the allowed speed-duplex combination list.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor condition speed-duplex clear`

43.2.17 port-monitor action

Enable or disable interface on port condition.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor action <P-1>`

Parameter	Value	Meaning
`P-1`	`port-disable`	Disable interface on port condition.
	`trap-only`	Send only a trap.
	`auto-disable`	Enable or disable interface on port condition by AUTODIS.

43.2.18 port-monitor reset

Reset the port monitor.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-monitor reset [<P-1>]`

Parameter	Value	Meaning
`P-1`	`port`	Press Enter to execute the command.

no port-monitor reset

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no port-monitor reset [<P-1>]`

43.3 show

Display device options and settings.

43.3.1 show port-monitor operation

Display the Port Monitor operation.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor operation`

43.3.2 show port-monitor brief

Display the Port Monitor summary.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor brief`

43.3.3 show port-monitor overload-detection counters

Display the overload-detection counters of last interval.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor overload-detection counters`

43.3.4 show port-monitor overload-detection port

Display the Port Monitor overload detection interface details.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor overload-detection port [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

43.3.5 show port-monitor speed-duplex

Display the Port Monitor link speed and duplex interface settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor speed-duplex [<P-1>]`

Parameter	Value	Meaning
P-1	slot no./port no.	

43.3.6 show port-monitor port

Display the Port Monitor interface details.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor port <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

43.3.7 show port-monitor link-flap

Display the link-flaps counts for a specific interface.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor link-flap <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

43.3.8 show port-monitor crc-fragments

Display CRC-Fragments counts for a specific interface.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-monitor crc-fragments <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

44 Port Security

44.1 port-security

Port MAC locking/security

44.1.1 port-security mode ip-based

Port security is based on given, allowed source IP addresses.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `port-security mode mac-based`

no port-security mode ip-ba

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no port-security mode ip-based`

44.1.2 port-security mode mac-based

Port security is based on given, allowed source MAC addresses.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `port-security mode mac-based`

no port-security mode mac-based

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no port-security mode mac-based`

44.1.3 port-security operation

Enable/Disable Port MAC locking/security
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `port-security operation`

no port-security operation

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no port-security operation`

44.2 port-security

Port security

44.2.1 port-security ip-address add

Add Static IP address to the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security ip-address add <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	IP address.
`P-2`	`1..4042`	VLAN ID

44.2.2 port-security ip-address delete

Remove Static IP address from the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security ip-address delete <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	IP address.
`P-2`	`1..4042`	VLAN ID

44.2.3 port-security operation

Enable/Disable port security on the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security operation`

no port-security operation

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no port-security operation`

44.2.4 port-security max-dynamic

Set dynamic limit for the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security max-dynamic <P-1>`

Parameter	Value	Meaning
`P-1`	`0..600`	maximum number of dynamically locked MAC addresses allowed

44.2.5 port-security max-static

Set Static Limit for the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security max-static <P-1>`

Parameter	Value	Meaning
`P-1`	`0..64`	maximum number of statically locked MAC addresses allowed

44.2.6 port-security mac-address add

Add Static MAC address to the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security mac-address add <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	MAC address.
`P-2`	`1..4042`	VLAN ID

44.2.7 port-security mac-address move

Make dynamic MAC addresses static for the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security mac-address move`

44.2.8 port-security mac-address delete

Remove Static MAC address from the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security mac-address delete <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`aa:bb:cc:dd:ee:ff`	MAC address.
`P-2`	`1..4042`	VLAN ID

44.2.9 port-security violation-traps

SNMP violation traps for the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `port-security violation-traps operation [frequency <P-1>]`

`operation`: Enable/Disable SNMP violation traps for the interface.

`[frequency]`: The minimum seconds between two successive violation traps on this port.

Parameter	Value	Meaning
`P-1`	`0..3600`	time in seconds

no port-security violation-traps

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no port-security violation-traps operation [frequency]`

44.3 show

Display device options and settings.

44.3.1 show port-security global

Port Security global status
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-security global`

44.3.2 show port-security interface

Display the port security information for the interface.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-security interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

44.3.3 show port-security dynamic

Display the dynamically learned MAC addresses.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-security dynamic <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

44.3.4 show port-security static

Display the statically locked MAC addresses.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-security static <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

44.3.5 show port-security violation

Display the port security violation information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show port-security violation <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

45 Password Management

45.1 passwords

Manage password policies and options.

45.1.1 passwords min-length

Set minimum password length for user passwords.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords min-length <P-1>`

Parameter	Value	Meaning
`P-1`	`1..64`	Enter a number in the given range.

45.1.2 passwords max-login-attempts

Set maximum login attempts for the users.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords max-login-attempts <P-1>`

Parameter	Value	Meaning
`P-1`	`0..5`	Enter a number in the given range.

45.1.3 passwords min-uppercase-chars

Set minimum upper case characters for user passwords.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords min-uppercase-chars <P-1>`

Parameter	Value	Meaning
`P-1`	`0..16`	Enter a number in the given range.

45.1.4 passwords min-lowercase-chars

Set minimum lower case characters for user passwords.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords min-lowercase-chars <P-1>`

Parameter	Value	Meaning
`P-1`	`0..16`	Enter a number in the given range.

45.1.5 passwords min-numeric-chars

Set minimum numeric characters for user passwords.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords min-numeric-chars <P-1>`

Parameter	Value	Meaning
`P-1`	`0..16`	Enter a number in the given range.

45.1.6 passwords min-special-chars

Set minimum special characters for user passwords.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords min-special-chars <P-1>`

Parameter	Value	Meaning
`P-1`	`0..16`	Enter a number in the given range.

45.1.7 passwords login-attempt-period

The time period [minutes] in which the number of failed authentication attempts is counted. Value 0 disables this functionality.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `passwords login-attempt-period <P-1>`

Parameter	Value	Meaning
`P-1`	`<0>`	Disables the counting.
	`<1..60>`	Enter a number in the given range.

45.2 show

Display device options and settings.

45.2.1 show passwords

Display the password policies and options.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show passwords`

46 Radius

46.1 authorization

Configure authorization parameters.

46.1.1 authorization network radius

Enable or disable the switch to accept VLAN assignment by the RADIUS server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `authorization network radius`

no authorization network radius

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no authorization network radius`

46.2 radius

Configure RADIUS parameters.

46.2.1 radius server attribute 4

Specifies the RADIUS client to use the NAS-IP Address attribute in the RADIUS requests.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server attribute 4 <P-1>`

Parameter	Value	Meaning
`P-1`	`A.B.C.D`	IP address.

46.2.2 radius server acct add

Add a RADIUS accounting server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server acct add <P-1> ip [name <P-2>] [port <P-3>]`

`ip`: RADIUS accounting server IP address.

`[name]`: RADIUS accounting server name.

`[port]`: RADIUS accounting server port (default: 1813).

Parameter	Value	Meaning
`P-1`	`1..8`	Next RADIUS server valid index (it can be seen with '#show radius global' command).
`P-2`	`string`	Enter a user-defined text, max. 32 characters.
`P-3`	`1..65535`	Enter port number between 1 and 65535

46.2.3 radius server acct delete

Delete a RADIUS accounting server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server acct delete <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.

46.2.4 radius server acct modify

Change a RADIUS accounting server parameters.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server acct modify <P-1> [name <P-2>] [port <P-3>] [status <P-4>] [secret [<P-5>]] [encrypted <P-6>]`

`[name]`: RADIUS accounting server name.

`[port]`: RADIUS accounting server port (default: 1813).

`[status]`: Enable or disable a RADIUS accounting server entry.

`[secret]`: Configure the shared secret for the RADIUS accounting server.

`[encrypted]`: Configure the encrypted shared secret.

Parameter	Value	Meaning
P-1	1..8	RADIUS server index.
P-2	string	Enter a user-defined text, max. 32 characters.
P-3	1..65535	Enter port number between 1 and 65535
P-4	enable	Enable the option.
	disable	Disable the option.
P-5	string	Enter a user-defined text, max. 128 characters.
P-6	string	Enter a user-defined text, max. 128 characters.

46.2.5 radius server auth add

Add a RADIUS authentication server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server auth add <P-1> ip [name <P-2>] [port <P-3>]`

`ip`: RADIUS authentication server IP address.

`[name]`: RADIUS authentication server name.

`[port]`: RADIUS authentication server port (default: 1812).

Parameter	Value	Meaning
P-1	1..8	Next RADIUS server valid index (it can be seen with '#show radius global' command).
P-2	string	Enter a user-defined text, max. 32 characters.
P-3	1..65535	Enter port number between 1 and 65535

46.2.6 radius server auth delete

Delete a RADIUS authentication server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server auth delete <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.

46.2.7 radius server auth modify

Change a RADIUS authentication server parameters.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server auth modify <P-1> [name <P-2>] [port <P-3>] [msgauth <P-4>] [primary <P-5>] [status <P-6>] [secret [<P-7>]] [encrypted <P-8>]`

`[name]`: RADIUS authentication server name.

`[port]`: RADIUS authentication server port (default: 1812).

`[msgauth]`: Enable or disable the message authenticator attribute for this server.

`[primary]`: Configure the primary RADIUS server.

`[status]`: Enable or disable a RADIUS authentication server entry.

`[secret]`: Configure the shared secret for the RADIUS authentication server.

`[encrypted]`: Configure the encrypted shared secret.

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.
`P-3`	`1..65535`	Enter port number between 1 and 65535
`P-4`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-5`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-6`	`enable`	Enable the option.
	`disable`	Disable the option.
`P-7`	`string`	Enter a user-defined text, max. 128 characters.
`P-8`	`string`	Enter a user-defined text, max. 128 characters.

46.2.8 radius server retransmit

Configure the retransmit value for the RADIUS server.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server retransmit <P-1>`

Parameter	Value	Meaning
`P-1`	`1..15`	Maximum number of retransmissions (default: 4).

46.2.9 radius server timeout

Configure the RADIUS server timeout value.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `radius server timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`1..30`	Timeout in seconds (default: 5).

46.3 show

Display device options and settings.

46.3.1 show radius global

Display the global RADIUS configuration.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show radius global`

46.3.2 show radius auth servers

Display the configured RADIUS authentication servers.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show radius auth servers [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.

46.3.3 show radius auth statistics

Display the RADIUS authentication server statistics.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show radius auth statistics <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.

46.3.4 show radius acct statistics

Display the RADIUS accounting server statistics.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show radius acct statistics <P-1>`

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.

46.3.5 show radius acct servers

Display the configured RADIUS accounting servers.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show radius acct servers [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..8`	RADIUS server index.

46.4 clear

Clear several items.

46.4.1 clear radius

Clear the RADIUS statistics.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `clear radius <P-1>`

Parameter	Value	Meaning
`P-1`	`statistics`	Clear the RADIUS statistics.

47 Remote Monitoring (RMON)

47.1 rmon-alarm

Create a RMON alarm action.

47.1.1 rmon-alarm add

Add RMON alarm.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `rmon-alarm add <P-1> [mib-variable <P-2>] [rising-threshold <P-3>] [falling-threshold <P-4>]`

`[mib-variable]`: MIB variable

`[rising-threshold]`: Rising threshold

`[falling-threshold]`: Falling threshold

Parameter	Value	Meaning
`P-1`	`1..150`	Enter an index that uniquely identifies an entry in the alarm table.
`P-2`	`string`	Enter an object identifier of the particular variable to be sampled, max. 32 characters.
`P-3`	`1..2147483647`	Enter the rising threshold for the sampled statistic.
`P-4`	`1..2147483647`	Enter the falling threshold for the sampled statistic.

47.1.2 rmon-alarm enable

Enable RMON alarm.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `rmon-alarm enable <P-1>`

Parameter	Value	Meaning
`P-1`	`1..150`	Enter an index that uniquely identifies an entry in the alarm table.

47.1.3 rmon-alarm disable

Disable RMON alarm.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `rmon-alarm disable <P-1>`

Parameter	Value	Meaning
`P-1`	`1..150`	Enter an index that uniquely identifies an entry in the alarm table.

47.1.4 rmon-alarm delete

Delete RMON alarm.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `rmon-alarm delete <P-1>`

Parameter	Value	Meaning
`P-1`	`1..150`	Enter an index that uniquely identifies an entry in the alarm table.

47.1.5 rmon-alarm modify

Modify RMON alarm parameters.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `rmon-alarm modify <P-1> [mib-variable <P-2>] [rising-threshold <P-3>] [falling-threshold <P-4>] [interval <P-5>] [sample-type <P-6>] [startup-alarm <P-7>] [rising-event <P-8>] [falling-event <P-9>]`

`[mib-variable]`: Enter the alarm MIB variable.

`[rising-threshold]`: Enter the alarm rising threshold.

`[falling-threshold]`: Enter the alarm falling-threshold.

`[interval]`: Enter the alarm interval in seconds over which the data is sampled.

`[sample-type]`: Enter the alarm method of sampling the selected variable.

`[startup-alarm]`: Enter the alarm type.

`[rising-event]`: Enter the alarm rising-event index.

`[falling-event]`: Enter the alarm falling-event index.

Parameter	Value	Meaning
`P-1`	`1..150`	Enter an index that uniquely identifies an entry in the alarm table.
`P-2`	`string`	Enter an object identifier of the particular variable to be sampled, max. 32 characters.
`P-3`	`1..2147483647`	Enter the rising threshold for the sampled statistic.
`P-4`	`1..2147483647`	Enter the falling threshold for the sampled statistic.
`P-5`	`1..2147483647`	Enter the interval in seconds over which the data is sampled and compared with the rising and falling thresholds.
`P-6`	`absoluteValue`	Variable is compared directly with the thresholds.
	`deltaValue`	Variable is subtracted from the current value and the difference compared with the thresholds.

Parameter	Value	Meaning
P-7	risingAlarm	Single rising alarm generated when the sample is greater than or equal to the rising threshold.
	fallingAlarm	Single falling alarm generated when the sample is less than or equal to the falling threshold.
	risingOrFallingAlarm	Single Rising alarm generated when the sample is greater than or equal to rising threshold and single falling alarm generated when the sample is less than or equal to falling threshold.
P-8	1..65535	Enter the index of the event entry that is used when a rising threshold is crossed.
P-9	1..65535	Enter the index of the event entry that is used when a falling threshold is crossed.

47.2 show

Display device options and settings.

47.2.1 show rmon statistics

Display the RMON statistics configuration.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show rmon statistics [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

47.2.2 show rmon alarm

Display the configuration on RMON alarms.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show rmon alarm`

48 Script File

48.1 script

CLI Script File.

48.1.1 script apply

Executes the CLI script file available in the device.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `script apply <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Filename.

48.1.2 script validate

Only validates the CLI script file available in the device.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `script validate <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Filename.

48.1.3 script list system

List all the script files available in the device memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `script list system`

48.1.4 script list envm

List all the script files available in external non-volatile memory.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `script list envm`

48.1.5 script delete

Delete the CLI script files.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `script delete [<P-1>]`

Parameter	Value	Meaning
`P-1`	`string`	Filename.

48.2 copy

Copy different kinds of items.

48.2.1 copy script envm

Copy script file from external non-volatile memory to specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy script envm <P-1> running-config nvm <P-2>`

`running-config`: Copy script file from external non-volatile memory to the running-config.

`nvm`: Copy script file from external non-volatile memory to the non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Filename.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.

48.2.2 copy script remote

Copy script file from server to specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy script remote <P-1> running-config nvm <P-2>`

`running-config`: Copy script file from file server to running-config.

`nvm`: Copy script file to non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.

48.2.3 copy script nvm

Copy Script file from non-volatile memory to the specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy script nvm <P-1> running-config envm <P-2> remote <P-3>`

`running-config`: Copy Script file from non-volatile system memory to running-config.

`envm`: Copy Script file to external non-volatile memory device.

`remote`: Copy Script file to file server.

Parameter	Value	Meaning
`P-1`	`string`	Filename.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.
`P-3`	`string`	Enter a user-defined text, max. 128 characters.

48.3 show

Display device options and settings.

48.3.1 show script envm

Display the content of the CLI script file present in the envm.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show script envm <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Filename.

48.3.2 show script system

Display the content of the CLI script file present in the device.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show script system <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Filename.

49 Selftest

49.1 selftest

Configure the selftest settings.

49.1.1 selftest action

Configure the action that a selftest component should take.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `selftest action <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`task`	Configure the action for task errors.
	`resource`	Configure the action for lack of resources.
	`software`	Configure the action for broken software integrity.
	`hardware`	Configure the action for detected hardware errors.
`P-2`	`log-only`	Write a message to the logging file.
	`send-trap`	Send a trap to the management station.
	`reboot`	Reboot the device.

49.1.2 selftest ramtest

Enable or disable the RAM selftest on cold start of the device. When disabled the device booting time is reduced.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `selftest ramtest`

no selftest ramtest

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no selftest ramtest`

49.1.3 selftest system-monitor

Enable or disable the System Monitor 1 access during the boot phase. Please note: If the System Monitor is disabled it is possible to loose access to the device permanently in case of loosing administrator password or mis-configuration.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `selftest system-monitor`

no selftest system-monitor

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no selftest system-monitor`

49.1.4 selftest boot-default-on-error

Enable or disable loading of the default configuration in case there is any error loading the configuration during boot phase. If disabled the system will be halted.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `selftest boot-default-on-error`

no selftest boot-default-on-error

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no selftest boot-default-on-error`

49.2 show

Display device options and settings.

49.2.1 show selftest action

Display the actions the device takes if an error occurs.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show selftest action`

49.2.2 show selftest settings

Display the selftest settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show selftest settings`

50 Small Form-factor Pluggable (SFP)

50.1 show

Display device options and settings.

50.1.1 show sfp

Display the information about the plugged SFP modules.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show sfp [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

51 Signal Contact

51.1 signal-contact

Configure the signal contact settings.

51.1.1 signal-contact mode

Configure the Signal Contact mode setting.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> mode <P-2>`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	
`P-2`	`manual`	The signal contact's status is determined by the associated manual setting (subcommand 'state').
	`monitor`	The signal contact's status is determined by the associated monitor settings.
	`device-status`	The signal contact's status is determined by the device status.
	`security-status`	The signal contact's status is determined by the security status.
	`dev-sec-status`	The signal contact's status is determined by the device status and security status.

51.1.2 signal-contact monitor link-failure

Sets the monitoring of the network connection(s).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> monitor link-failure`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	

no signal-contact monitor link-failure

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> monitor link-failure`

51.1.3 signal-contact monitor envm-not-in-sync

Sets the monitoring whether the external non-volatile memory device\nis in sync with the running configuration.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> monitor envm-not-in-sync`

Parameter	Value	Meaning
P-1	signal contact no.	

no signal-contact monitor envm-not-in-sync

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> monitor envm-not-in-sync`

51.1.4 signal-contact monitor envm-removal

Sets the monitoring of the external non-volatile memory device removal.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> monitor envm-removal`

Parameter	Value	Meaning
P-1	signal contact no.	

no signal-contact monitor envm-removal

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> monitor envm-removal`

51.1.5 signal-contact monitor temperature

Sets the monitoring of the device temperature.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> monitor temperature`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	

no signal-contact monitor temperature

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> monitor temperature`

51.1.6 signal-contact monitor ring-redundancy

Sets the monitoring of the ring-redundancy.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> monitor ring-redundancy`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	

no signal-contact monitor ring-redundancy

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> monitor ring-redundancy`

51.1.7 signal-contact monitor power-supply

Sets the monitoring of the power supply(s).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> monitor power-supply <P-2>`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	
`P-2`	`1..2`	Number of power supply.

no signal-contact monitor power-supply

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> monitor power-supply <P-2>`

51.1.8 signal-contact state

Configure the Signal Contact manual state (only takes immediate effect in manual mode).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> state <P-2>`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	
`P-2`	`open`	Open the signal contact (only takes effect in the manual mode).
	`close`	Close the signal contact (only takes effect in the manual mode).

51.1.9 signal-contact trap

Configure if a trap is sent when the Signal Contact changes state (in monitor mode).

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> trap`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	

no signal-contact trap

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> trap`

51.2 signal-contact

Configure the signal contact interface settings.

51.2.1 signal-contact link-alarm

Configure the monitoring of the specific network ports.
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `signal-contact <P-1> link-alarm`

Parameter	Value	Meaning
`P-1`	`signal contact no.`	

no signal-contact link-alarm

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Administrator`
- Format: `no signal-contact <P-1> link-alarm`

51.3 show

Display device options and settings.

51.3.1 show signal-contact

Display the signal contact settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show signal-contact <P-1> mode monitor state trap link-alarm events all`

`mode`: Display the signal contact mode.

`monitor`: Display the signal contact monitor settings.

`state`: Display the signal contact state (open/close).\nNote: This covers the signal contact's administrative setting as well as its actual state.

`trap`: Display the signal contact trap information and settings.

`link-alarm`: Display the settings of the monitoring of the specific network ports.

`events`: Display the occurred device status events.

`all`: Display the signal contact settings for the specified signal contact.

Parameter	Value	Meaning
`P-1`	`signal contact no.`	

52 Switched Monitoring (SMON)

52.1 monitor

Configure port mirroring.

52.1.1 monitor session

Configure port mirroring.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `monitor session <P-1> destination interface <P-2> source interface <P-3> direction <P-4> operation mode allow-mgmt`

`destination`: Configure the probe interface.

`interface`: Configure interface.

`source`: Configure the source interface.

`interface`: Configure interface

`direction`: Select interface.

`operation`: Enable/disable mirroring on an interface.

`mode`: Enable/Disable port mirroring session. Note: does not affect the source or destination interfaces.

`allow-mgmt`: Enable/Disable port responsiveness while mirroring.\nNote: does not affect the source interfaces.

Parameter	Value	Meaning
`P-1`	`1`	Monitor session index.
`P-2`	`slot no./port no.`	
`P-3`	`slot no./port no.`	
`P-4`	`none`	None.
	`tx`	Packets that are transmitted on the source interfaces are copied to the destination interface.
	`rx`	Packets that are received on the source interfaces are copied to the destination interface.
	`txrx`	Packets that are transmitted or received on the source interfaces are copied to the destination interface.

no monitor session

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no monitor session <P-1> destination interface source interface <P-3> direction operation mode allow-mgmt`

52.2 show

Display device options and settings.

52.2.1 show monitor session

Display port monitor session settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show monitor session <P-1>`

Parameter	Value	Meaning
`P-1`	`1`	Monitor session index.

52.3 clear

Clear several items.

52.3.1 clear monitor session

Delete configuration for this session.

- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `clear monitor session <P-1>`

Parameter	Value	Meaning
`P-1`	`1`	Monitor session index.

53 Simple Network Management Protocol (SNMP)

53.1 snmp

Configure of SNMP versions and traps.

53.1.1 snmp access version v1

Enable or disable SNMP version V1.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp access version v1`

no snmp access version v1

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no snmp access version v1`

53.1.2 snmp access version v2

Enable or disable SNMP version V2.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp access version v2`

no snmp access version v2

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no snmp access version v2`

53.1.3 snmp access version v3

Enable or disable SNMP version V3.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp access version v3`

no snmp access version v3

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Administrator`
- Format: `no snmp access version v3`

53.1.4 snmp access port

Configure the SNMP access port.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp access port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of the SNMP server (default: 161).

53.1.5 snmp access snmp-over-802

Configure SNMPover802.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp access snmp-over-802`

no snmp access snmp-over-802

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no snmp access snmp-over-802`

53.2 show

Display device options and settings.

53.2.1 show snmp access

Display the SNMP access configuration settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show snmp access`

54 SNMP Community

54.1 snmp

Configure of SNMP versions and traps.

54.1.1 snmp community ro

SNMP v1/v2 read-only community.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp community ro`

54.1.2 snmp community rw

SNMP v1/v2 read-write community.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp community rw`

54.2 show

Display device options and settings.

54.2.1 show snmp community

Display the SNMP v1/2 community.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show snmp community`

55 SNMP Logging

55.1 logging

Logging configuration.

55.1.1 logging snmp-request get operation

Enable or disable logging of SNMP GET or SET requests.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging snmp-request get operation <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable logging of SNMP GET or SET requests.
	`disable`	Disable logging of SNMP GET or SET requests.

no logging snmp-request get operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no logging snmp-request get operation <P-1>`

55.1.2 logging snmp-request get severity

Define severity level.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging snmp-request get severity <P-1>`

Parameter	Value	Meaning
`P-1`	`emergency`	System is unusable. System failure has occurred.
	`alert`	Action must be taken immediately. Unrecoverable failure of a component. System failure likely.
	`critical`	Recoverable failure of a component that may lead to system failure.
	`error`	Error conditions. Recoverable failure of a component.
	`warning`	Minor failure, e.g. misconfiguration of a component.
	`notice`	Normal but significant conditions.
	`informational`	Informational messages.
	`debug`	Debug-level messages.
	`0`	Same as emergency
	`1`	Same as alert
	`2`	Same as critical
	`3`	Same as error
	`4`	Same as warning
	`5`	Same as notice
	`6`	Same as informational
	`7`	Same as debug

55.1.3 logging snmp-request set operation

Enable or disable logging of SNMP GET or SET requests.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging snmp-request set operation <P-1>`

Parameter	Value	Meaning
`P-1`	`enable`	Enable logging of SNMP GET or SET requests.
	`disable`	Disable logging of SNMP GET or SET requests.

no logging snmp-request set operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no logging snmp-request set operation <P-1>`

55.1.4 logging snmp-request set severity

Define severity level.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `logging snmp-request set severity <P-1>`

Parameter	Value	Meaning
`P-1`	`emergency`	System is unusable. System failure has occurred.
	`alert`	Action must be taken immediately. Unrecoverable failure of a component. System failure likely.
	`critical`	Recoverable failure of a component that may lead to system failure.
	`error`	Error conditions. Recoverable failure of a component.
	`warning`	Minor failure, e.g. misconfiguration of a component.
	`notice`	Normal but significant conditions.
	`informational`	Informational messages.
	`debug`	Debug-level messages.
	`0`	Same as emergency
	`1`	Same as alert
	`2`	Same as critical
	`3`	Same as error
	`4`	Same as warning
	`5`	Same as notice
	`6`	Same as informational
	`7`	Same as debug

55.2 show

Display device options and settings.

55.2.1 show logging snmp

Display the SNMP logging settings.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show logging snmp`

56 Simple Network Time Protocol (SNTP)

56.1 sntp

Configure SNTP settings.

56.1.1 sntp client operation

Enable or disable the SNTP client
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client operation`

no sntp client operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no sntp client operation`

56.1.2 sntp client operating-mode

Set the operating mode of the SNTP client. In unicast-mode, the client sends a request to the SNTP Server. In broadcast-mode, the client waits for a broadcast message from the SNTP Server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client operating-mode <P-1>`

Parameter	Value	Meaning
`P-1`	`unicast`	Set the operating mode to unicast.
	`broadcast`	Set the operating mode to broadcast.

56.1.3 sntp client request-interval

Set the SNTP client request interval in seconds. The request-interval is only used in the operating-mode unicast.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client request-interval <P-1>`

Parameter	Value	Meaning
`P-1`	`5..3600`	Enter a number in the given range.

56.1.4 sntp client broadcast-rcv-timeout

Set the SNTP client broadcast receive timeout in seconds. The broadcast receive timeout is only used in the operating-mode broadcast.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client broadcast-rcv-timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`128..2048`	Enter a number in the given range.

56.1.5 sntp client disable-after-sync

If this option is activated, the SNTP client disables itself \nonce it is synchronized to a SNTP server.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client disable-after-sync`

no sntp client disable-after-sync

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no sntp client disable-after-sync`

56.1.6 sntp client server add

Add a SNTP client server connection

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client server add <P-1> [port <P-2>] [description <P-3>]`

`[port]`: Set the port number of the external time server.

`[description]`: Description of the external time server

Parameter	Value	Meaning
`P-1`	`1..4`	Enter a number in the given range.
`P-2`	`1..65535`	Port number of SNTP Server (default 123).
`P-3`	`string`	Enter a user-defined text, max. 32 characters.

56.1.7 sntp client server delete

delete a SNTP client server connection
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client server delete <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4`	Enter a number in the given range.

56.1.8 sntp client server mode

Enable or disable a SNTP client server connection
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp client server mode <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4`	Enter a number in the given range.

no sntp client server mode

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no sntp client server mode <P-1>`

56.1.9 sntp server operation

Enable or disable the SNTP server
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server operation`

no sntp server operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no sntp server operation`

56.1.10 sntp server port

Set the local socket port number used to listen for client requests.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of SNTP Server (default 123).

56.1.11 sntp server only-if-synchronized

Set the disabling of the SNTP server function, if it is not synchronized to another external time reference
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server only-if-synchronized`

no sntp server only-if-synchronized

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no sntp server only-if-synchronized`

56.1.12 sntp server broadcast operation

Enable or disable the SNTP server broadcast mode
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server broadcast operation`

no sntp server broadcast operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no sntp server broadcast operation`

56.1.13 sntp server broadcast address

Set the SNTP server's broadcast or multicast IP address (default: 0.0.0.0 (none)).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server broadcast address <P-1>`

Parameter	Value	Meaning
`P-1`	`a.b.c.d`	IP address.

56.1.14 sntp server broadcast port

Set the destination socket port number used to send broadcast or multicast messages to the client.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server broadcast port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of SNTP Server (default 123).

56.1.15 sntp server broadcast interval

Set the SNTP server's interval in seconds for sending\nbroadcast or multicast messages.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server broadcast interval <P-1>`

Parameter	Value	Meaning
`P-1`	`64..1024`	Enter a number in the given range.

56.1.16 sntp server broadcast vlan

Set the SNTP server's broadcast VLAN ID used for sending\nbroadcast or multicast messages.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `sntp server broadcast vlan <P-1>`

Parameter	Value	Meaning
`P-1`	`0..4042`	Enter the VLAN ID. Entering of ID 0 uses the management VLAN ID.

56.2 show

Display device options and settings.

56.2.1 show sntp global

Display the SNTP configuration parameters and information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show sntp global`

56.2.2 show sntp client status

Display the SNTP client status.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show sntp client status`

56.2.3 show sntp client server

Display the SNTP client server connections.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show sntp client server [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..4`	Enter a number in the given range.

56.2.4 show sntp server status

Display the SNTP server configuration parameters and information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show sntp server status`

56.2.5 show sntp server broadcast

Display the SNTP server broadcast configuration parameters.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show sntp server broadcast`

57 Spanning Tree

57.1 spanning-tree

Enable or disable the Spanning Tree protocol.

57.1.1 spanning-tree operation

Enable or disable the function.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree operation`

no spanning-tree operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree operation`

57.1.2 spanning-tree bpdu-filter

Enable or disable the BPDU filter on the edge ports.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree bpdu-filter`

no spanning-tree bpdu-filter

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree bpdu-filter`

57.1.3 spanning-tree bpdu-guard

Enable or disable the BPDU guard on the edge ports.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree bpdu-guard`

no spanning-tree bpdu-guard

Disable the option
- Mode: `Global Config Mode`

- Privilege Level: `Operator`
- Format: `no spanning-tree bpdu-guard`

57.1.4 spanning-tree bpdu-migration-check

Force the specified port to transmit RST or MST BPDUs.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree bpdu-migration-check <P-1>`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

57.1.5 spanning-tree forceversion

Set the force protocol version parameter.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree forceversion <P-1>`

Parameter	Value	Meaning
`P-1`	`stp`	Spanning Tree Protocol (STP).
	`rstp`	Rapid Spanning Tree Protocol (RSTP).

57.1.6 spanning-tree forward-time

Set the Bridge Forward Delay parameter [s].
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree forward-time <P-1>`

Parameter	Value	Meaning
`P-1`	`4..30`	Enter the bridge forward delay as an integer.

57.1.7 spanning-tree hello-time

Set the Hello Time parameter [s].
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree hello-time <P-1>`

Parameter	Value	Meaning
`P-1`	`1..2`	Set the Hello Time parameter (unit: seconds).

57.1.8 spanning-tree hold-count

Set the bridge hold count parameter.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree hold-count <P-1>`

Parameter	Value	Meaning
`P-1`	`1..40`	Set bridge hold count parameter.

57.1.9 spanning-tree max-age

Set the bridge Max Age parameter.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree max-age <P-1>`

Parameter	Value	Meaning
`P-1`	`6..40`	Set the bridge Max Age parameter.

57.1.10 spanning-tree mst

MST instance related configuration.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree mst`

57.2 spanning-tree

Enable or disable the Spanning Tree protocol on a port.

57.2.1 spanning-tree mode

Enable or disable the function.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree mode`

no spanning-tree mode

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree mode`

57.2.2 spanning-tree bpdu-flood

Enable or disable BPDU flooding on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree bpdu-flood`

no spanning-tree bpdu-flood

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree bpdu-flood`

57.2.3 spanning-tree bpdu-filter

Enable or disable BPDU filter on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree bpdu-filter`

no spanning-tree bpdu-filter

Disable the option
- Mode: `Interface Range Mode`

- Privilege Level: `Operator`
- Format: `no spanning-tree bpdu-filter`

57.2.4 spanning-tree edge-auto

Enable or disable auto edge detection on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree edge-auto`

no spanning-tree edge-auto

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree edge-auto`

57.2.5 spanning-tree edge-port

Enable or disable edge port usage on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree edge-port`

no spanning-tree edge-port

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree edge-port`

57.2.6 spanning-tree guard-loop

Enable or disable the loop guard on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree guard-loop`

no spanning-tree guard-loop

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree guard-loop`

57.2.7 spanning-tree guard-root

Enable or disable the root guard on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree guard-root`

no spanning-tree guard-root

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree guard-root`

57.2.8 spanning-tree guard-tcn

Enable or disable the TCN guard on a port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree guard-tcn`

no spanning-tree guard-tcn

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no spanning-tree guard-tcn`

57.2.9 spanning-tree cost

Specify the port path cost for STP, RSTP and CIST.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree cost <P-1>`

Parameter	Value	Meaning
`P-1`	`0..200000000`	Specify the port path cost.

57.2.10 spanning-tree priority

Specify the port priority for STP, RSTP and CIST.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `spanning-tree priority <P-1>`

Parameter	Value	Meaning
`P-1`	`0..240`	Specify the port priority.

57.3 show

Display device options and settings.

57.3.1 show spanning-tree global

Display the Common and Internal Spanning Tree information and settings.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show spanning-tree global`

57.3.2 show spanning-tree mst instance

Display summarized information and settings for all ports in an MST instance.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show spanning-tree mst instance`

57.3.3 show spanning-tree mst port

Display summarized information and settings for all ports in an MST instance.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show spanning-tree mst port [<P-1>]`

Parameter	Value	Meaning
P-1	slot no./port no.	

57.3.4 show spanning-tree port

Spanning Tree information and settings for an interface.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show spanning-tree port <P-1>`

Parameter	Value	Meaning
P-1	slot no./port no.	

58 Subring Management

58.1 sub-ring

Sub-ring manager operations.

58.1.1 sub-ring operation

Enable or disable the global sub-ring manager functionality on this device.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `sub-ring operation`

no sub-ring operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no sub-ring operation`

58.1.2 sub-ring add

Creates a new sub-ring domain with the value id.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `sub-ring add <P-1> [mode <P-2>] [vlan <P-3>] [port <P-4>] [name <P-5>] [mrp-domain <P-6>]`

`[mode]`: Set operating mode for the sub-ring domain with the value id.

`[vlan]`: Set vlan id for the sub-ring domain with the value id.

`[port]`: Set the port for the sub-ring domain with the value id.

`[name]`: Set name for the sub-ring domain with the value id.

`[mrp-domain]`: MRP domain ID. Format: 16 bytes in decimal notation (Example: 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16).

Parameter	Value	Meaning
`P-1`	`1..40000`	SRM Domain Id.
`P-2`	`manager`	The entity takes on the role of a Sub-Ring Manager.
	`redundant-manager`	The entity takes on the role of the Sub-Ring Manager and blocks the ring port if the sub-ring is closed.
	`single-manager`	The single-manager has both ends of a sub-ring connected to its ports and blocks one of these ends if the sub-ring is closed.
`P-3`	`0..4042`	Enter the VLAN ID. Entering of ID 0 disables the feature.

Parameter	Value	Meaning
P-4	slot no./port no.	
P-5	string	Enter a user-defined text, max. 255 characters.
P-6	string	<domain id> MRP domain ID. Format: 16 bytes in decimal notation.\n(Example: 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16).

58.1.3 sub-ring delete

Deletes the subring domain with the value id.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `sub-ring delete <P-1>`

Parameter	Value	Meaning
P-1	1..40000	SRM Domain Id.

58.1.4 sub-ring enable

Enable the sub-ring domain with the value id.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `sub-ring enable <P-1>`

Parameter	Value	Meaning
P-1	1..40000	SRM Domain Id.

58.1.5 sub-ring disable

Disable the sub-ring domain with the value id.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `sub-ring disable <P-1>`

Parameter	Value	Meaning
P-1	1..40000	SRM Domain Id.

58.1.6 sub-ring modify

Modify parameters of the sub-ring domain with the value id.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `sub-ring modify <P-1> [mode <P-2>] [vlan <P-3>] [port <P-4>] [name <P-5>] [mrp-domain <P-6>]`

[mode]: Set operating mode for the sub-ring domain with the value id.

[vlan]: Set vlan id for the sub-ring domain with the value id.

[port]: Set the port for the sub-ring domain with the value id.

[name]: Set name for the sub-ring domain with the value id.

[mrp-domain]: MRP domain ID. Format: 16 bytes in decimal notation.\n(Example: 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16).

Parameter	Value	Meaning
P-1	1..40000	SRM Domain Id.
P-2	manager	The entity takes on the role of a Sub-Ring Manager.
	redundant-manager	The entity takes on the role of the Sub-Ring Manager and blocks the ring port if the sub-ring is closed.
	single-manager	The single-manager has both ends of a sub-ring connected to its ports and blocks one of these ends if the sub-ring is closed.
P-3	0..4042	Enter the VLAN ID. Entering of ID 0 disables the feature.
P-4	slot no./port no.	
P-5	string	Enter a user-defined text, max. 255 characters.
P-6	string	<domain id> MRP domain ID. Format: 16 bytes in decimal notation.\n(Example: 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16).

58.2 show

Display device options and settings.

58.2.1 show sub-ring global

Display the Sub-ring global parameters.
- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show sub-ring global`

58.2.2 show sub-ring ring

Display the Sub-ring detailed parameters.
- Mode: `Command is in all modes available.`
- Privilege Level: `Guest`
- Format: `show sub-ring ring [<P-1>]`

Parameter	Value	Meaning
`P-1`	`1..40000`	SRM Domain Id.

59 Secure Shell (SSH)

59.1 ssh

Set SSH parameters.

59.1.1 ssh server

Enable or disable the SSH server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ssh server`

no ssh server

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no ssh server`

59.1.2 ssh timeout

Set the SSH connection idle timeout in minutes (default: 5).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ssh timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`0..160`	Idle timeout of a session in minutes (default: 5).

59.1.3 ssh port

Set the SSH server port number (default: 22).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ssh port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Port number of the SSH server (default: 22).

59.1.4 ssh max-sessions

Set the maximum number of concurrent SSH sessions (default: 5).
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ssh max-sessions <P-1>`

Parameter	Value	Meaning
`P-1`	`1..5`	Maximum number of concurrent SSH sessions.

59.1.5 ssh key rsa

Generate or delete RSA key
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ssh key rsa <P-1>`

Parameter	Value	Meaning
`P-1`	`generate`	Generates the item
	`delete`	Deletes the item

59.1.6 ssh key fingerprint-type

Configure fingerprint type
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `ssh key fingerprint-type <P-1>`

Parameter	Value	Meaning
`P-1`	`md5`	Configure md5 fingerprint of the existing SSH host key
	`sha256`	Configure sha256 fingerprint of the existing SSH host key.

59.2 copy

Copy different kinds of items.

59.2.1 copy sshkey remote

Copy the SSH key from a server to the specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy sshkey remote <P-1> nvm`

`nvm`: Copy the SSH key from a server to non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

59.2.2 copy sshkey envm

Copy the SSH key from external non-volatile memory to the specified destination.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Administrator`
- Format: `copy sshkey envm <P-1> nvm`

`nvm`: Copy the SSH key from external non-volatile memory to non-volatile memory.

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 128 characters.

59.3 show

Display device options and settings.

59.3.1 show ssh

Display the SSH server and client information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show ssh`

60 Storm Control

60.1 storm-control

Configure the global storm-control settings.

60.1.1 storm-control flow-control

Enable or disable flow control globally.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `storm-control flow-control`

no storm-control flow-control

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no storm-control flow-control`

60.2 traffic-shape

Traffic shape commands.

60.2.1 traffic-shape bw

Set threshold value

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `traffic-shape bw <P-1>`

Parameter	Value	Meaning
`P-1`	`0..100`	Enter a number in the given range.

60.3 storm-control

Storm control commands

60.3.1 storm-control flow-control

Enable or disable flow control (802.3x) for this port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `storm-control flow-control`

no storm-control flow-control

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no storm-control flow-control`

60.3.2 storm-control ingress unit

Set unit.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `storm-control ingress unit <P-1>`

Parameter	Value	Meaning
`P-1`	`percent`	Metering unit expressed in percentage of bandwidth.
	`pps`	Metering unit expressed in packets per second.

60.3.3 storm-control ingress multicast operation

Enable/disable ingress storm control for multicast frames.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `storm-control ingress multicast operation`

no storm-control ingress multicast operation

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no storm-control ingress multicast operation`

60.3.4 storm-control ingress broadcast operation

Enable/disable ingress storm control for broadcast frames.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `storm-control ingress broadcast operation`

no storm-control ingress broadcast operation

Disable the option

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no storm-control ingress broadcast operation`

60.3.5 storm-control ingress broadcast threshold

Set the threshold value for broadcast frames.

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `storm-control ingress broadcast threshold <P-1>`

Parameter	Value	Meaning
`P-1`	`0..14880000`	Enter a number in the given range. If the configured unit is percent enter a number in (0..100) range.

60.4 show

Display device options and settings.

60.4.1 show storm-control flow-control

Global flow control status.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show storm-control flow-control`

60.4.2 show storm-control ingress

Show storm control ingress parameters.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show storm-control ingress [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

60.4.3 show storm-control ingress

Display the storm control ingress parameters.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show storm-control ingress [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

61 System

61.1 system

Set system related values e.g. name of the device, location of the device, contact data for the person responsible for the device, and pre-login banner text.

61.1.1 system name

Edit the name of the device. The system name consists of an alphanumeric ASCII character string with 0..255 characters.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `system name <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 255 characters.

61.1.2 system location

Edit the location of the device. The system location consists of an alphanumeric ASCII character string with 0..255 characters.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `system location <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 255 characters.

61.1.3 system contact

Edit the contact information for the person responsible for the device. The contact data consists of an alphanumeric ASCII character string with 0..255 characters.

- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `system contact <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 255 characters.

61.1.4 system pre-login-banner operation

Enable or disable the pre-login banner. You use the pre-login banner to display a greeting or information to users before they login to the device.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `system pre-login-banner operation`

no system pre-login-banner operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no system pre-login-banner operation`

61.1.5 system pre-login-banner text

Edit the text for the pre-login banner (C printf format syntax allowed: \\n\\t) The device allows you to edit an alphanumeric ASCII character string with up to 512 characters.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `system pre-login-banner text <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	Enter a user-defined text, max. 512 characters (allowed characters are from ASCII 32 to 127).

61.1.6 system resources operation

Enable or disable the measurement operation.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `system resources operation`

no system resources operation

Disable the option

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no system resources operation`

61.2 show

Display device options and settings.

61.2.1 show eventlog

Display the event log notice and warning entries with time stamp.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show eventlog`

61.2.2 show system info

Display the system related information.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show system info`

61.2.3 show system pre-login-banner

Display the pre-login banner status and text.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show system pre-login-banner`

61.2.4 show system flash-status

Display the flash memory statistics of the device.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show system flash-status`

61.2.5 show system resources

Display the system resources information (CPU utilization, memory and network CPU utilization).
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show system resources`

62 Telnet

62.1 telnet

Set Telnet parameters.

62.1.1 telnet server

Enable or disable the telnet server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `telnet server`

no telnet server

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no telnet server`

62.1.2 telnet timeout

Set the idle timeout for a telnet connection in minutes.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `telnet timeout <P-1>`

Parameter	Value	Meaning
`P-1`	`0..160`	Idle timeout of a session in minutes (default: 5).

62.1.3 telnet port

Set the listening port for the telnet server.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `telnet port <P-1>`

Parameter	Value	Meaning
`P-1`	`1..65535`	Set the listening port for the telnet server.

62.1.4 telnet max-sessions

Set the maximum number of sessions for the telnet server.

- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `telnet max-sessions <P-1>`

Parameter	Value	Meaning
`P-1`	`1..5`	Set the maximum number of connections for the telnet server.

62.2 show

Display device options and settings.

62.2.1 show telnet

Display the telnet server information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show telnet`

63 Traps

63.1 snmp

Configure of SNMP versions and traps.

63.1.1 snmp trap operation

Global enable/disable SNMP trap.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp trap operation`

no snmp trap operation

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no snmp trap operation`

63.1.2 snmp trap mode

Enable/disable SNMP trap entry.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp trap mode <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<name> Trap name (1 to 32 characters)

no snmp trap mode

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `no snmp trap mode <P-1>`

63.1.3 snmp trap delete

Delete SNMP trap entry.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp trap delete <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<name> Trap name (1 to 32 characters)

63.1.4 snmp trap add

Add SNMP trap entry.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `snmp trap add <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<name> Trap name (1 to 32 characters)
`P-2`	`a.b.c.d`	a.b.c.d Single IP address.
	`a.b.c.d:n`	a.b.c.d:n Address with port.

63.2 show

Display device options and settings.

63.2.1 show snmp traps

Display the SNMP traps.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show snmp traps`

64 User Management

64.1 show

Display device options and settings.

64.1.1 show custom-role global

Display the common information of custom role.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show custom-role global`

64.1.2 show custom-role commands

Display the included and excluded commands.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show custom-role commands`

65 Users

65.1 users

Manage Users and User Accounts.

65.1.1 users add

Add a new user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users add <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

65.1.2 users delete

Delete an existing user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users delete <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

65.1.3 users enable

Enable user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users enable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

65.1.4 users disable

Disable user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users disable <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

65.1.5 users password

Change user password.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users password <P-1> [<P-2>]`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`string`	Enter a user-defined text, max. 64 characters.

65.1.6 users snmpv3 authentication

Specify authentication setting for a user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users snmpv3 authentication <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`md5`	MD5 as SNMPv3 user authentication mode.
	`sha1`	SHA1 as SNMPv3 user authentication mode.

65.1.7 users snmpv3 encryption

Specify encryption settings for a user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users snmpv3 encryption <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`none`	SNMPv3 encryption method is none.
	`des`	DES as SNMPv3 encryption method.
	`aescfb128`	AES-128 as SNMPv3 encryption method.

65.1.8 users snmpv3 password authentication

Change the SNMPv3 authentication password.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users snmpv3 password authentication <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

65.1.9 users snmpv3 password encryption

Change the SNMPv3 encryption password.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users snmpv3 password encryption <P-1>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).

65.1.10 users access-role

Specify snmpv3 access role for a user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users access-role <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`slot no./port no.`	

65.1.11 users lock-status

Set the lockout status of a specified user.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users lock-status <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`unlock`	Unlock specific user. User can login again.

65.1.12 users password-policy-check

Set password policy check option. The device checks the "minimum password length", regardless of the setting for this option.
- Mode: `Global Config Mode`
- Privilege Level: `Administrator`
- Format: `users password-policy-check <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`string`	<user> User name (up to 32 characters).
`P-2`	`enable`	Enable the option.
	`disable`	Disable the option.

65.2 show

Display device options and settings.

65.2.1 show users

Display the users and user accounts information.

- Mode: `The command is in every mode available.`
- Privilege Level: `Administrator`
- Format: `show users`

66 Virtual LAN (VLAN)

66.1 name

66.1.1 name

Assign a name to a VLAN

- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `name <P-1> <P-2>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.
`P-2`	`string`	Enter a user-defined text, max. 32 characters.

66.2 vlan

Creation and configuration of VLANS.

66.2.1 vlan add

Create a VLAN
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `vlan add <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.2.2 vlan delete

Delete a VLAN
- Mode: `VLAN Database Mode`
- Privilege Level: `Operator`
- Format: `vlan delete <P-1>`

Parameter	Value	Meaning
`P-1`	`2..4042`	Enter VLAN ID. VLAN ID 1 can not be deleted or created

66.3 vlan

Configure 802.1Q port parameters for VLANs.

66.3.1 vlan acceptframe

Configure how to handle tagged/untagged frames received.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan acceptframe <P-1>`

Parameter	Value	Meaning
`P-1`	`all`	Untagged frames or priority frames received on this interface are accepted and \n assigned the value of the interface VLAN ID for this port.
	`vlanonly`	Only frames received with a VLAN tag will be forwarded. All other frames will be dropped.

66.3.2 vlan ingressfilter

Enable/Disable application of Ingress Filtering Rules.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan ingressfilter`

no vlan ingressfilter

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no vlan ingressfilter`

66.3.3 vlan priority

Configure the priority for untagged frames.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan priority <P-1>`

Parameter	Value	Meaning
`P-1`	`0..7`	Enter a number in the given range.

66.3.4 vlan pvid

Configure the VLAN id for a specific port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan pvid <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.3.5 vlan tagging

Enable or disable tagging for a specific VLAN port.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan tagging <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

no vlan tagging

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no vlan tagging <P-1>`

66.3.6 vlan participation include

vlan participation to include
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan participation include <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.3.7 vlan participation exclude

vlan participation to exclude
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan participation exclude <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.3.8 vlan participation auto

vlan participation to auto

- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `vlan participation auto <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.4 show

Display device options and settings.

66.4.1 show vlan id

Display the configuration of a single specified VLAN.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show vlan id <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.4.2 show vlan brief

Display the general VLAN parameters.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show vlan brief`

66.4.3 show vlan port

Display the VLAN configuration of a single port.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show vlan port [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	

66.4.4 show vlan member current

Display the membership of ports in static VLAN or dynamically created.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show vlan member current`

66.4.5 show vlan member static

Display the membership of ports in static VLAN.

- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show vlan member static`

66.5 network

Configure the inband and outband connectivity.

66.5.1 network management vlan

Configure the management VLAN ID of the switch.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network management vlan <P-1>`

Parameter	Value	Meaning
`P-1`	`1..4042`	Enter the VLAN ID.

66.5.2 network management priority dot1p

Configure the management VLAN priority of the switch.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network management priority dot1p <P-1>`

Parameter	Value	Meaning
`P-1`	`0..7`	Enter a number in the given range.

66.5.3 network management priority ip-dscp

Configure the management VLAN ip-dscp priority of the switch.
- Mode: `Privileged Exec Mode`
- Privilege Level: `Operator`
- Format: `network management priority ip-dscp <P-1>`

Parameter	Value	Meaning
`P-1`	`0..63`	Enter a number in the given range.

67 Voice VLAN

67.1 voice

Configure voice VLAN.

67.1.1 voice vlan

Enable or disable the voice VLAN feature.
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `voice vlan`

no voice vlan

Disable the option
- Mode: `Global Config Mode`
- Privilege Level: `Operator`
- Format: `no voice vlan`

67.2 voice

Configure voice VLAN.

67.2.1 voice vlan vlan-id

Set and configure the vlan-id interface mode.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan vlan-id <P-1> [dot1p <P-2>]`

`[dot1p]`: Set and configure the vlan id and dot1p interface mode.

Parameter	Value	Meaning
`P-1`	`0..4042`	Enter the VLAN ID. Entering of ID 0 disables the feature.
`P-2`	`0`	priority 0
	`1`	priority 1
	`2`	priority 2
	`3`	priority 3
	`4`	priority 4
	`5`	priority 5
	`6`	priority 6
	`7`	priority 7
	`255`	default

67.2.2 voice vlan dot1p

Set and configure the dot1p voice vlan interface mode.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan dot1p <P-1>`

Parameter	Value	Meaning
`P-1`	`0`	priority 0
	`1`	priority 1
	`2`	priority 2
	`3`	priority 3
	`4`	priority 4
	`5`	priority 5
	`6`	priority 6
	`7`	priority 7
	`255`	default

67.2.3 voice vlan dscp

Set and configure the Differentiated Services Code Point value.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan dscp <P-1>`

Parameter	Value	Meaning
`P-1`	`<0..63>af11af12af13af21af22af23af31af32af33af41af42af43cs1cs2cs3cs4cs5cs6cs7defaultef`	Differentiated Services Code Point value.Match packets with AF11 dscp.Match packets with AF12 dscp.Match packets with AF13 dscp.Match packets with AF21 dscp.Match packets with AF22 dscp.Match packets with AF23 dscp.Match packets with AF31 dscp.Match packets with AF32 dscp.Match packets with AF33 dscp.Match packets with AF41 dscp.Match packets with AF42 dscp.Match packets with AF43 dscp.Match packets with CS1 dscp.Match packets with CS2 dscp.Match packets with CS3 dscp.Match packets with CS4 dscp.Match packets with CS5 dscp.Match packets with CS6 dscp.Match packets with CS7 dscp.Match packets with default dscp.Match packets with EF dscp.

67.2.4 voice vlan none

Configure the none voice VLAN interface mode.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan none`

67.2.5 voice vlan untagged

Configure the untagged voice VLAN interface mode.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan untagged`

67.2.6 voice vlan disable

Disable voice VLAN on the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan disable`

67.2.7 voice vlan auth

Set voice VLAN Authentication Mode on the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan auth`

no voice vlan auth

Disable the option
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `no voice vlan auth`

67.2.8 voice vlan data priority

Trust/Untrust data traffic on the interface.
- Mode: `Interface Range Mode`
- Privilege Level: `Operator`
- Format: `voice vlan data priority <P-1>`

Parameter	Value	Meaning
`P-1`	`trust`	Trust data traffic on an interface.
	`untrust`	Untrust data traffic on an interface.

67.3 show

Display device options and settings.

67.3.1 show voice vlan global

Display the current global Voice VLAN admin mode.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show voice vlan global`

67.3.2 show voice vlan interface

Display a summary of the current Voice VLAN configuration for a specific port or for all ports.
- Mode: `The command is in every mode available.`
- Privilege Level: `Guest`
- Format: `show voice vlan interface [<P-1>]`

Parameter	Value	Meaning
`P-1`	`slot no./port no.`	