



Hardened Lite Managed Ethernet Switch SmartE Series

User Manual

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Products Supported by this Manual:

SmartE Series Switches

Preface

Audience

This guide is designed for the person who installs, configures, deploys, and maintains the Ethernet network. This document assumes the reader has moderate hardware, computer, and Internet skills.

Document Revision Level

This section provides a history of the revision changes to this document.

Revision	Document Version	Date	Description
A	1	04/20/2021	First version of document.

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Document Conventions

This guide uses the following conventions to draw your attention to certain information.

Safety and Warnings

This guide uses the following symbols to draw your attention to certain information.

Symbol	Meaning	Description
	Note	Notes emphasize or supplement important points of the main text.
	Tip	Tips provide helpful information, guidelines, or suggestions for performing tasks more effectively.
	Warning	Warnings indicate that failure to take a specified action could result in damage to the device, or could result in serious bodily injury.

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Introduction

SmartE Series

The SmartE series is a portfolio of hardened lite managed Ethernet switches. SmartE offers a key set of Layer 2 management features that are perfect for supporting network connectivity for edge applications even in extreme environments. With a wide range of models available in both Fast Ethernet and Gigabit Ethernet configurations, offering up to 16 Ethernet ports and 2 optional SFP ports for network expansion, the SmartE series provides a reliable and cost-effective network management solution for critical applications.

Before you install and use this product, please read this manual in detail.

Mode Setting

With mode setting, you can change the operating mode of the switch, without having access to one of the management interfaces.

Press the Mode button to enter mode setting, select the desired setting, and exit Mode setting. The four Mode LEDs indicate the setting that is currently selected, which will be applied when exiting mode setting.

The following setting options can be selected via Smart mode:

- Reset to factory default values
- Operate with a fixed IP address
- Reset the IP configuration
- Operate in unmanaged mode
- Exit mode selection without changes

Entering Mode Setting

At the bottom right of the front face there is a Mode button. To select an operating mode, power up the switch. When the LEDs of all ports go out, press the mode button for more than ten seconds. The four LEDs of ports 1 and 2 will flash, indicating that the device is ready for mode selection. The active state is then identified by the combination of the four flashing LEDs.

When the mode selection is started, the initial state is “Exit mode selection without changes.” Select the desired mode by pressing the mode button.

Mode	Link/Act LED of Port 1	Link Speed LED of Port 1	Link/Act LED of Port 2	Link Speed LED of Port 2
Exit mode selection without changes	On	Off	Off	Off
Reset to factory default values	Off	On	Off	Off
Operate with a fixed IP address	Off	On	On	Off
Reset the IP configuration	On	On	On	Off
Operate in unmanaged mode	Off	On	Off	On

To exit the selected mode, press and hold down the MODE button for at least five seconds. The selected operating mode will then be saved and activated as soon as you release the MODE button.

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Mode descriptions:

Reset to factory default values – When activated, all switch settings and configurations will be reset to factory defaults.

Operate with a fixed IP address – This is the default setting for the switch. – DHCP server is activated to assign IP to connected PC, and device has a fixed IP: 192.168.0.254.

Reset the IP configuration - Reset IP to default IP 192.168.1.10, subnet mask and default gateway to 0.0.0.0 only, but not reset stored configurations.

Operate in unmanaged mode - The switch can be used without an IP address. The switch adopts the static IP address 0.0.0.0. The subnet mask and gateway are also 0.0.0.0. In this mode, web-based management can no longer be accessed, and the switch no longer sends BootP and DHCP requests.

The following main Layer 2 management features can be active in Unmanaged mode, but require a few configuration steps in the web GUI before setting the SmartE device to Unmanaged mode.

- Redundancy mechanisms (RSTP, LTS, FRD)
- Broadcast/multicast limiter
- IGMP snooping



NOTE: The device can only exit unmanaged mode by switching to a different mode or by resetting the switch to the factory default settings.

BootP

The device uses the BootP protocol for IP address assignment. Numerous BootP servers are available on the Internet. You can use any of these programs for address assignment.

Notes on BootP

During initial startup, the device sends BootP requests without interruption until it receives a valid IP address. As soon as the device receives a valid IP address, it stops sending further BootP requests.

After a restart, the device sends three BootP requests and will only then adopt the old IP address if there is no BootP response.

Management Using the Web Interface

The web interface allows for remote monitoring, configuration, and control of the switch through any standard web browser. All switch features that can be configured through the Command Line Interface can also be configured through the web interface.

Default IP Address

The switch's default IP address is 192.168.1.10. The management computer must be set up so that it is on the same network as the switch. For example, the IP address of the management computer can be set to 192.168.1.100 with a subnet mask of 255.255.255.0. DHCP is disabled by default.

Login Process and Default Credentials

Once a compatible IP address has been assigned to the management computer, the user is ready to log in to the switch. To log in, type the URL into the address field of the browser and hit return.

- The Default Login is **root** (case sensitive)
- There is no password by default
- Enter the login name and click the Login button

 It is highly recommended that you change the default password when you first set up the switch. Use a secure password with adequate complexity.

 Cookies must be enabled in the web browser in order to use web management.

Layout of Web Management Interface

The web management interface is divided into three sections:

- Information: General device information
- Configuration: Device configuration
- Diagnostics: Device-specific diagnostics

The contents of each section are as follows:

Information

- Help & Documentation
- Device Status
- Local Diagnostic
- Alarm & Events
- Port Table
- MAC Address Table

Configuration

- My Profile
- User Management
- System
- Quick Setup
- Network
- Service
- Port Configuration
- VLAN Configuration
- Multicast Filtering
- Network Redundancy
- Security
- DHCP Service
- Local Events
- Quality of Service

Diagnostics

- LLDP Topology
- RSTP Diagnostic
- Current VLANs
- Current Multicast Groups
- Port Mirroring
- Trap Manager
- Port Counter
- Port Utilization
- Snapshot
- Syslog

Information - Help & Documentation

Here you will find useful information about using web-based management.

Help & Documentation

Help

The navigation tree is structured as follows:

Information
Here you will find information on the product and the current device status. You do not need to log-in to access the web pages.

Configuration
Here you can configure the Device. For security reasons you must log-in with a password before you can access the website.

Quick setup
The Quick Setup website includes all parameters for fast and easy configuration of a the device.

Diagnostics
Here you will find further information on diagnostics of the device.

Help There is a (?) after every parameter on the website. When you move the mouse pointer across you will get information on the parameter in a Fly Out window.

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Information – Device Status

Here you will find general information about your device, such as the serial number, firmware version, or hardware version.

Device Status	
Vendor	: EtherWAN Systems, Inc.
Address	: New Taipei City 231
Phone	: +886 (2) 6629 8986
Internet	: www.etherwan.com
Family	: EtherWAN SmartE
Type	: SG300-16
Order No	: SG300-16
Serial No	: 2034998503
Firmware Version	: 2.94.01 BETA
Hardware Version	: 00
Logic Version	: 0x5
Bootloader Version	: 1.16
Hostname	: SmartE
Device Name	: SmartE
Description	:
Physical Location	:
Contact	:
IP Address	: 192.168.1.10
Subnet Mask	: 255.255.255.0
Gateway	: 0.0.0.0
IP Address Assignment	: Static
MAC Address	: 00:E0:B3:48:03:90

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Information – Local Diagnostic

Here you will find a brief explanation of how to interpret the individual LEDs on the device.

Local Diagnostics	
Power Supply	
US1	: Supply Voltage 1 (green LED)
US2	: Supply Voltage 2 (green LED)
Alarm Output	
FAIL	: Alarm Output failed (red LED)
Ethernet	
PORT LED 1	: Link and Activity (green LED)
PORT LED 2	: Speed 10 Mbit/s (LED off)
	: Speed 100 Mbit/s (green LED)

Information – Alarm & Events

This page displays a list of alarms and events in a table. You can save event table entries, so that they are also retained after the device is restarted. The event table can be downloaded from the device in CSV format.

Alarm & Events

Invalid	Cold start.
Oct 28 2020 00:00:02	US 2 lost.
Oct 28 2020 00:00:02	Alarm output 1 Failed.
Oct 28 2020 00:00:03	Name of the device changed.
Oct 28 2020 00:00:10	LLDP new neighbour on Port 16.
Oct 28 2020 00:00:11	Link up on port 16.
Oct 28 2020 00:12:58	Successful user login.
Oct 28 2020 00:41:11	Successful user login.
Oct 28 2020 00:52:04	Automatic user logout.
Oct 28 2020 01:48:00	Successful user login.
Oct 28 2020 01:51:12	Automatic user logout.
Oct 28 2020 03:46:29	Successful user login.
Oct 28 2020 03:53:04	Automatic user logout.
Oct 28 2020 03:53:31	Successful user login.
Oct 28 2020 04:00:04	Automatic user logout.
Oct 28 2020 04:01:27	Successful user login.
Oct 28 2020 04:08:04	Automatic user logout.
Oct 28 2020 04:08:35	Successful user login.

System Uptime (?) 7h:8m:40s

Current system time (?) 2020/10/28 07:05:45 (Not synced)

Event Count (?) Loaded 29 events

Event Table as CSV File (?)

Clear Event Table (?)

 A maximum of 3000 entries can be stored in the event table. The oldest entries are then overwritten. If there is a large number of entries, it may take several seconds to load the Event Table.

Information – Port Table

This page displays a list of the current states of the individual ports.

Port Table			
Advanced Tables			
(?) Port Redundancy Table			
Physical Ports			
Interface/Port	Type	Status	Mode
1	TX 10/100/1000	enable	Not connected
2	TX 10/100/1000	enable	Not connected
3	TX 10/100/1000	enable	Not connected
4	TX 10/100/1000	enable	Not connected
5	TX 10/100/1000	enable	Not connected
6	TX 10/100/1000	enable	Not connected
7	TX 10/100/1000	enable	Not connected
8	TX 10/100/1000	enable	Not connected
9	TX 10/100/1000	enable	Not connected
10	TX 10/100/1000	enable	Not connected
11	TX 10/100/1000	enable	Not connected
12	TX 10/100/1000	enable	Not connected
13	TX 10/100/1000	enable	Not connected
14	TX 10/100/1000	enable	Not connected
15	TX 10/100/1000	enable	Not connected
16	TX 10/100/1000	enable	1000 MBit/s FD

Clicking on the “Port Redundancy Table” button opens a table containing information about the individual ports and their redundancy mechanism assignment.

Interface/Port: Clicking on a port number in the “Interface/Port” column opens the “Port Configuration” page for the selected port.

Type: The “Type” column indicates whether it is a copper port (e.g., TX 10/100) or a fiberglass port (e.g., FX 100).

Status: The “Status” column shows whether the port is activated or deactivated.

Mode: The “Mode” column indicates the current connection status of the ports.

- Not connected: No active link at the port.

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- 100 Mbps FD (or comparable status): Displays the transmission speed and duplex mode if there is an active link.
- Far-End Fault: Provides information about a fault on a fiber of a bi-directional fiberglass connection (e.g., due to a defective fiberglass cable). If the device at the other end also supports Far-End Fault, it detects a communication failure on its own receiver connection and sends a Far-End Fault signal pattern to the peer.

Information – MAC Address Table

On this page, you will find a list of the current devices in the network. You can download the list from the device in CSV format.

MAC Address Table

No.	VLAN	MAC-Address	Port
1	1	F8:75:A4:8B:07:7D	16

MAC Table as CSV File (?)

Clear MAC Table (?)

Configuration – My Profile

This page allows for the changing of the password of the root account, and the setting of an SNMPv3 password. The minimum SNMPv3 password length is eight characters.

My Profile

Username (?)

User Password (?)

Retype Password (?)

SNMPv3 Password

Individual SNMPv3 Password (?)

Configuration – User Management

Create and manage user accounts for the web-based management of the switch here. You can assign permissions to users via user roles.

User Management

Create/Edit User (?) ▾

User Status (?) ▾

Username (?)

User Role (?) ▾

User Password (?)

Retype Password (?)

User account locking (?) ▾

Login Attempts Limit (?)

Access Lock Time (?)

Custom User Roles

Custom User Roles Webpage (?) [Custom User Roles](#)

Create/Edit User: Select the user account that you wish to edit or delete. Select “Create” to create a new user account.

Delete button: Click here to delete the selected user account. The “root” account cannot be deleted.

User Status: Activate or deactivate the selected user account. When a user account is deactivated, access to the device is blocked, even if the correct login parameters are entered.

User Name: Configure the user name. Once the user account is created, you will not be able to change the user name.

User Role: Assign a role to the selected account that defines the user rights. The following roles can be selected:

- Read-only: The user has read access to the device and therefore access to the web pages in the information and diagnostics areas. Furthermore, the user has permission to change their own access password.
- Expert: An expert user account has extensive read and write access to the device and can therefore modify a good portion of the configuration parameters. However, this excludes “User

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Management”.

- Admin: An admin user has unrestricted read and write access to the device.

User Password / Retype Password: Here, you can configure the password for the selected user account. For a new user account, this password is also used for initial access to the device. Passwords must be between eight and 64 characters long.

User account locking: This function can be used to lock out a user for a certain period of time if they have repeatedly attempted to log in using the wrong password. It is not possible to access the device during this time, even if the correct access data is entered.

Login Attempts Limit: When the ‘User account locking’ function is enabled, configure here the number of failed login attempts after which the user account is locked.

Access Lock Time: When the “User account locking” function is enabled, set the time (in minutes) for which a user account is locked if the “Login Attempts Limit” is exceeded.

Custom User Roles: Clicking the Custom User Roles link opens a new page on which user roles can be created and edited. Create a new custom role by selecting “Create,” or edit a role by selecting an existing role name. Role names can be up to 32 characters long. Once a role name is assigned, it cannot be edited. Use the check boxes in the table below to assign read-write or read-only rights to for the various permission groups.

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Custom User Roles

Create/Edit Custom Role (?) ▾

Role name (?)

Permission Groups	Read-Write	Read-Only
System Configuration (?)	<input type="checkbox"/>	<input type="checkbox"/>
Device Identification (?)	<input type="checkbox"/>	<input type="checkbox"/>
User Management (?)	<input type="checkbox"/>	<input type="checkbox"/>
Network (?)	<input type="checkbox"/>	<input type="checkbox"/>
User Interface Configuration (?)	<input type="checkbox"/>	<input type="checkbox"/>
Automation Protocols (?)	<input type="checkbox"/>	<input type="checkbox"/>
Device Discovery (?)	<input type="checkbox"/>	<input type="checkbox"/>
L2 and L3 Communication (?)	<input type="checkbox"/>	<input type="checkbox"/>
Device Redundancy (?)	<input type="checkbox"/>	<input type="checkbox"/>
Time Synchronization (?)	<input type="checkbox"/>	<input type="checkbox"/>
DHCP Services (?)	<input type="checkbox"/>	<input type="checkbox"/>
Physical Ports (?)	<input type="checkbox"/>	<input type="checkbox"/>
RMON and port statistics (?)	<input type="checkbox"/>	<input type="checkbox"/>
Port Mirroring (?)	<input type="checkbox"/>	<input type="checkbox"/>
Port Security (?)	<input type="checkbox"/>	<input type="checkbox"/>
Device Logging and Alarming (?)	<input type="checkbox"/>	<input type="checkbox"/>
Snapshot (?)	<input type="checkbox"/>	<input type="checkbox"/>

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Configuration – System

Reboot Device

Reboot Device (?)

Firmware Update

Firmware Update (?) [Update Firmware](#)

Configuration Handling

Status of Current Configuration (?) Configuration saved

Perform Configuration Action (?)

Advanced Configuration (?) [Further configuration handling options](#)

Secure UIs (?) [Security Context](#)

Device Identification

Device Name (?)

Device Description (?)

Physical Location (?)

Device Contact (?)

Reboot Device: Clicking on the “Reboot” button restarts the device. All unsaved parameters will be lost.

Firmware Update: Clicking on the “Update Firmware” link opens a new window in which the parameters for the firmware update must be entered.

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Firmware Update

Update method (?) HTTP ▾

TFTP Server IP Address (?) 0.0.0.0

Remote Firmware Filename (?)

Automatic Reboot After Write (?) Reboot ▾

Update Status (?) No Update

To update the firmware via HTTP:

Browse: Clicking on the “Browse” button allows you to select the desired file on your PC.

Automatic Reboot After Write: Here, specify whether a reboot should be performed after the firmware update.

Click “Apply” to start the firmware update.

 If you perform a firmware update without rebooting immediately, “Update Status” displays the message “Firmware Update successful”, which informs you that the firmware has been transferred to the device and will be activated on the next reboot.

To update the firmware via TFTP, select “TFTP” as the update method. Enter the IP address of the computer on which the TFTP server is active, and the filename. Click “Apply” to start the update.

Firmware Update

Update method (?) TFTP ▾

TFTP Server IP Address (?) 192.168.1.100

Remote Firmware Filename (?) MVetherWan_v3_00.bin

Automatic Reboot After Write (?) Reboot ▾

Update Status (?) No Update

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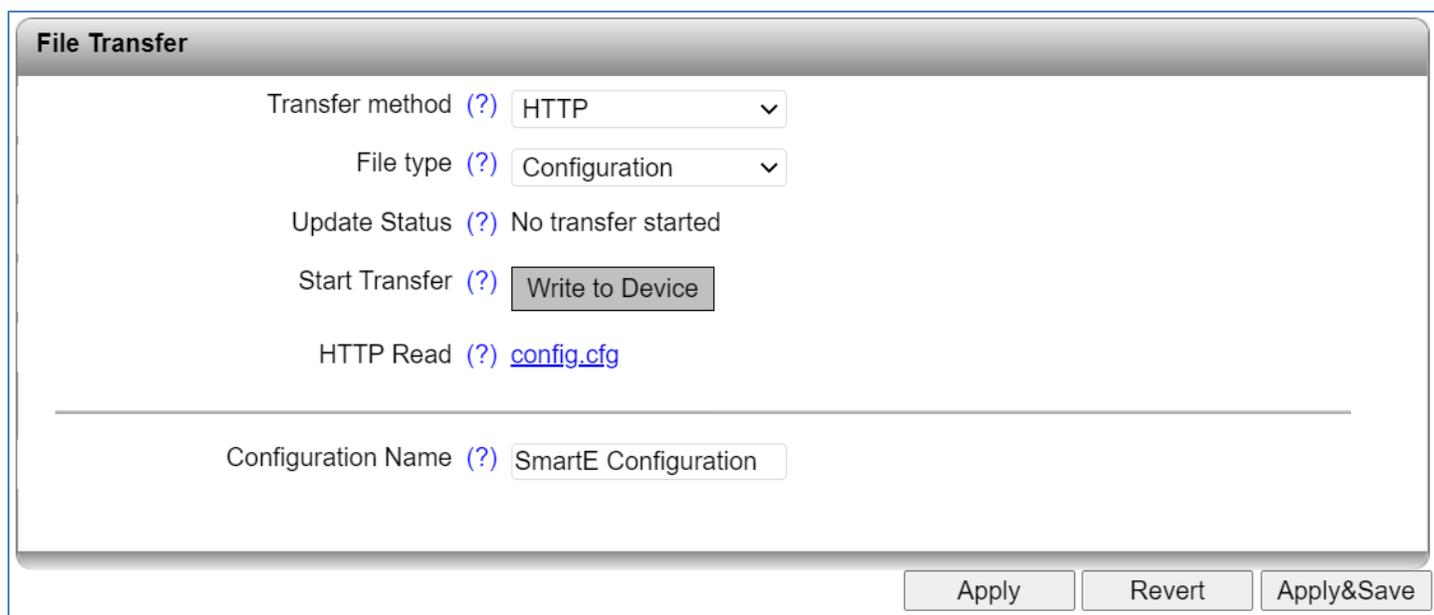
Configuration Handling items

Status of Current Configuration: Shows the status of the active configuration.

Perform Configuration Action: Select an action from the dropdown menu:

- Factory Default: Resets the device configuration to the delivery state.
- Save Configuration: Saves the active device configuration to Flash memory.
- Reload Configuration: Loads the configuration file from Flash memory and applies it. The device is then restarted.

Advanced Configuration: Clicking on the “Further configuration handling options” link opens a “File Transfer” window (see below). On that screen, enter the parameters for transferring a configuration file from the device to the PC (download) or from the PC to the device (upload).



The screenshot shows a window titled "File Transfer" with the following fields and controls:

- Transfer method (?): HTTP (dropdown menu)
- File type (?): Configuration (dropdown menu)
- Update Status (?): No transfer started
- Start Transfer (?): Write to Device (button)
- HTTP Read (?): [config.cfg](#)
- Configuration Name (?): SmartE Configuration (text input field)

At the bottom right of the window are three buttons: Apply, Revert, and Apply&Save.

Transfer Method: Select the transmission protocol you would like to use to transfer the file.

File Type: Select the file type to be transferred. It can be either a configuration file, a security context or a snapshot file.

Configuration Name: Enter the name under which you want to save the configuration on the PC. Any change to the configuration name only takes effect when you click on the “Apply & Save” button.

Update Status: Shows the current transfer status.

Start Transfer: Click on the “Write to device” button to select the file on your PC that is to be transferred to the switch.

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HTTP Read: Click on the “config.cfg” link to download the active configuration directly to the connected PC. If transferring a snapshot file, click on the “snapshot.tar.gz” link to download the current snapshot file directly to your PC.

If transferring files via TFTP, enter the IP address of the computer on which the TFTP server is active, and the remote filename. Then select “Read from device” or “Write to device” in the **Direction** field. Click on the “Start” button to start the transfer of the file.

Secure UIs: Clicking on the “Security Context” link opens the “Security Context” screen.



Create new context: Clicking on the “Generate” button creates all the necessary keys and certificates for operation with HTTPS and SSH.

Current state: Shows the status of the current availability of the security context.

Root CA: Clicking on the “cacert.cer” link loads the Root CA certificate for installation in the browser.

Advanced Configuration: Clicking on the “File transfer” link opens the “Advanced Configuration” window for file transfer with file type set to “Security Context”.

Device Identification items

Information entered in this section is displayed on the “Device Status” page.

Device Name: Enter the device name.

Device Description: Enter a device description. It may be up to 255 characters long.

Physical Location: Here, you can provide the location of the device, such as the building in which it is installed.

Device Contact: Here, you can enter a contact address.

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Configuration – Quick Setup

Basic settings can be quickly configured in the Quick Setup area.

Profile (?)

IP Address Assignment (?) ▾

IP Address (?)

Network Mask (?)

Default Gateway (?)

Device Name (?)

Device Description (?)

Physical Location (?)

Device Contact (?)

LLDP Mode (?) ▾

(?) [LLDP Topology](#)

Automation Profile: Only one profile is available for this model – Universal. In Universal mode, BootP is activated for IP address assignment.

IP Address Assignment: Select the type of IP address assignment from the dropdown menu. The options are:

- STATIC: Static IP address
- BOOTP: Assignment via the Bootstrap protocol
- DHCP: Assignment via a DHCP server

IP Address: Set the desired IP address.

Network Mask: Set the desired subnet mask here.

Default Gateway: Set the desired default gateway here.

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Device Name: Enter the device name of the switch.

Device Description: Enter a description for the device, up to 255 characters in length.

Physical Location: Enter a location for the device.

Device Contact: Here, you can enter the name of a contact person for the device.

LLDP Mode: Enable or disable LLDP.

- Disable: LLDP is deactivated
- Enable: LLDP is activated
- Send only: Received LLDP BPDUs are ignored
- Receive only: No LLDP BPDUs are sent

The “LLDP Topology” link opens the corresponding page. This can also be accessed via the menu item of the same name.

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Configuration – Network

Configure basic network settings on this page.

Network

IP Address Assignment (?)

IP Address (?)

Network Mask (?)

Default Gateway (?)

DNS Server 1 (?)

DNS Server 2 (?)

Management VLAN (?)

DHCP Configuration (?) [DHCP Services](#)

Topology Based IP Assignment

Assignment port (?)

Assignment state (?) Feature disabled on this device

Hostname Configuration

Name resolution (?)

Hostname (?)

ACD Configuration

ACD Mode (?)

ACD Status Information (?) [See ACD status on Device status page](#)

IP Address Assignment: Select the type of IP address assignment.

- STATIC: Static IP address
- BOOTP: Assignment via the Bootstrap protocol
- DHCP: Assignment via a DHCP server

For static IP addressing, complete the following fields:

- IP Address: Set the desired IP address.
- Network Mask: Set the desired subnet mask.
- Default Gateway: Set the desired default gateway.

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DNS Server 1: Enter the IP address of the primary DNS server.

DNS Server 2: Enter the IP address of the secondary DNS server.

Management VLAN: Set the VLAN in which the web-based management can be accessed (default is “1”).

DHCP Configuration: Click the “DHCP Services” link to navigate to the DHCP Services page.

Topology Based IP Assignment allows for the assigning of blocks of IP addresses from an IP pool for different topological areas.

Assignment port: Select the desired port from the dropdown menu. A device connected to the selected port requests incremented IP at DHCP server. Choosing a port disables the Accept Bootp feature of the DHCP server settings.

Assignment state: Displays if the topology based IP assignment feature on this device is disabled, acting as root or acting as client.

Hostname Configuration items

Name resolution: Here, you can enable and disable DNS name resolution via mDNS and LLNMR. When the function is activated, you can also access the device via the host name (e.g., `http://smarte.local`).

Hostname: Configure the DNS host name of the device here. The host name must be between two and 63 characters long. Alphanumeric characters and dashes are permitted. A host name must not start with a dash.

ACD (Address Conflict Detection) Configuration items

ACD Mode: Here, you can enable and disable the “Address Conflict Detection” function.

ACD Status Information: Clicking on the link opens the “Device Status” page.

Configuration – Service

Service

Web Server (?) HTTP

Confidential Web Server view (?) Enable

SNMP Agent (?) SNMP v2

SNMPv2 read community (?) public

CLI Service (?) Telnet

CLI Network Scripting UI (?) Enable

Smart mode (?) Enable

Persistent Event Logging (?) Disable

Login expire time (?) 1200

LLDP Configuration

LLDP Mode (?) Enable

LLDP Transmit Interval (?) 5

LLDP Transmission (?)

1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/>							
9	10	11	12	13	14	15	16
<input checked="" type="checkbox"/>							

LLDP Reception (?)

1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/>							
9	10	11	12	13	14	15	16
<input checked="" type="checkbox"/>							

LLDP Topology (?) [Link to LLDP Topology webpage](#)

System Time

Current system time (?) 2020/12/18 04:07:20 (Not synced)

Network time protocol (?) None

Manual system time set (?)

Synchronization Status (?) Not Synchronized

Last SNTP synchronization (?) Not Synchronized

Web Server: Here, you can enable and disable the web server function and also select the mode (HTTP/HTTPS).

Confidential Web Server View: If this view is activated, no web pages in web-based management can be accessed without logging in first – this also applies to the web pages in the information area.

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SNMP Agent: Enable and disable the SNMP server function and select the mode (SNMP v2, SNMP v3).

CLI Service:

- Disable: The entry of CLI commands is deactivated.
- Telnet: The entry of CLI commands via Telnet is activated.
- SSH: The entry of CLI commands via Secure Shell (SSH) is activated.

CLI Network Scripting UI:

- Disable: The transmission of CLI commands via the network is deactivated.
- Enable: The transmission of CLI commands via the network is activated.

Smart mode: Here, you can enable and disable the Mode button

Persistent Event Logging: Here, you can enable and disable the persistent storage of events. Persistent storage means that events are not deleted when the device is restarted.

Login expire time: Configure the duration until automatic logout (30 ... 3600 seconds, default is 1200 seconds). Entering 0 deactivates automatic logout.

LLDP Configuration items

LLDP Mode:

- Disable: LLDP is disabled
- Enable: LLDP is enabled
- Send only: Only LLDP BPDUs are sent.
- Receive only: Only LLDP BPDUs are received.

LLDP Transmit Interval: Set the interval at which LLDP telegrams are to be sent. The value must be between 5 and 32,786 seconds (default is 5 s).

LLDP Transmission: Enable and disable the forwarding of LLDP telegrams for specific ports.

LLDP Reception: Enable and disable the ignoring of LLDP telegrams for specific ports.

LLDP Topology: Clicking on the “Link to LLDP Topology webpage” link opens the page for “[LLDP Topology](#)”.

System Time items

Current system time: Displays the current system time. “Not synced” means that the system time has either been configured manually or it is not synchronized with an (S)NTP server.

Network time protocol: Activates synchronization via a web server.

SmartE Series

Manual system time set: Manual setting of the system time if no SNTP server is available.

Synchronization Status: Displays the current status of synchronization with the SNTP server.

Last SNTP synchronization: Displays the time of the last synchronization.

Configuration – Port Configuration

Individual Port Configuration

Port (?)

Status (?)

Name (?)

Type (?) TX 10/100/1000

Link (?) Not connected

Negotiation Mode (?) Auto

Speed (?) 0 MBit/s

Duplex (?) Undefined

Mode (?)

Link Monitoring (?)

Default Priority (?)

Jumbo Frames (?)

MTU (?)

Flow Control (?)

CRC Surveillance

Received Pkts (?) 0

CRC Errors (?) 0

CRC Proportion Peak (ppm) (?) 0

CRC Port Status (?) **Ok**

Critical Threshold (ppm) (?)

Warning Threshold (ppm) (?) 20000

Clear CRC Peak and CRC Status (?) Check to clear all ports

Port Counter Overview (?) [Monitor all ports simultaneously.](#)

Advanced Port Configuration

Port Configuration Table (?) [Configure all ports simultaneously.](#)

Port Mirroring (?) [Configure Port Mirroring](#)

VLAN Port Configuration (?) [Configure Port settings for a VLAN](#)

Link Aggregation (?) [Configure Link Aggregation](#)

Port Based Security (?) [Configure Port Based Security](#)

SmartE Series

Port Configuration items

Port: Select the port that you want to configure individually.

Status: The port can be activated/deactivated here.

Name: You can assign a name to the port.

Type: Describes the physical properties of the port.

Link: Shows the current link status of the port.

Negotiation Mode: Shows the current auto negotiation status.

Speed: Displays the current transmission speed at which the port is operating.

Duplex: Displays the transmission mode of the port.

Mode: The port can be set to a fixed speed and transmission mode here, and fast startup can also be set.

Link Monitoring: Specify whether the link behavior is to be monitored at the selected port.

Default Priority: Set the priority for incoming data packets to this port.

Jumbo Frames: Enable/disable the support of jumbo frames (>1518 bytes). The MTU size is set to 9600 bytes following activation.



The Jumbo Frames” function is only available on SG300 Gigabit models.

MTU: Here, you can set the maximum transmission unit (MTU). Packet sizes between 1522 bytes and 9600 bytes are accepted.

Flow Control: Flow control for the selected port can be enabled and disabled here.

CRC Surveillance items

Received Pkts: Shows the number of packets received at the selected port since the last reboot or counter reset.

CRC Errors: Shows the number of CRC errors at the selected port since the last reboot or counter reset.

CRC Proportion Peak (ppm): Shows the highest proportion of CRC errors that occurred in a 30-second interval, relative to the total number of packets received in this interval since the last reboot or counter reset.

SmartE Series

CRC Port Status: Shows the status of the current port.

Critical Threshold (ppm): Here, you can enter the threshold value at which the CRC Port Status switches to Critical (1000 ppm - 1,000,000 ppm are acceptable).

Warning Threshold (ppm): Shows the threshold value in ppm at which the CRC Port Status switches to Warning (50% of Critical Threshold).

Clear CRC Peak and CRC Status: Clicking the “Clear” button resets the CRC Peak and CRC Status.

Port Counter Overview: Clicking on the “Monitor all ports simultaneously” link takes you to the [“Port Counter”](#) page.

Advanced Port Configuration items

Port Configuration Table: Clicking on the “Configure all ports simultaneously” link takes you to the [“Port Configuration Table”](#) page. There, you can set the status, mode, link monitoring, jumbo frames, and flow control for all ports.

Port Mirroring: Clicking on the “Configure Port Mirroring” button takes you to the [port mirroring configuration](#) page.

VLAN Port Configuration: Clicking on the “Configure Port Settings for a VLAN” button takes you to the [“VLAN Port Configuration”](#) page.

Link Aggregation: Clicking on the “Configure Link Aggregation” button takes you to the [“Link Aggregation”](#) page.

Port Based Security: Clicking on the “Configure Port Based Security” button takes you to the [“Port Based Security”](#) page.

SmartE Series

Port Configuration Table

Port Configuration Table									
Interface/Port	Status	Mode	Linkmonitor	Jumbo Frames	MTU [byte]	Flow Control			
1	Enable	Auto	Enable	Disable	1536	Disable			
2	Enable	Auto	Enable	Disable	1536	Disable			
3	Enable	Auto	Disable	Disable	1536	Disable			
4	Enable	Auto	Disable	Disable	1536	Disable			
5	Enable	Auto	Disable	Disable	1536	Disable			
6	Enable	Auto	Disable	Disable	1536	Disable			
7	Enable	Auto	Disable	Disable	1536	Disable			
8	Enable	Auto	Disable	Disable	1536	Disable			
9	Enable	Auto	Disable	Disable	1536	Disable			
10	Enable	Auto	Disable	Disable	1536	Disable			
11	Enable	Auto	Disable	Disable	1536	Disable			
12	Enable	Auto	Disable	Disable	1536	Disable			
13	Enable	Auto	Disable	Disable	1536	Disable			
14	Enable	Auto	Disable	Disable	1536	Disable			
15	Enable	Auto	Disable	Disable	1536	Disable			
16	Enable	Auto	Disable	Disable	1536	Disable			

Apply Revert Apply&Save

Configuration – VLAN Configuration

VLAN Configuration

VLAN Mode (?) Tagged

Static VLANs

Static VLAN Configuration Webpages (?) [Static VLAN Configuration](#)

[VLAN Port Configuration](#)

[VLAN Port Configuration Table](#)

VLAN Diagnostic

VLAN Diagnostic Webpages (?) [Current VLANs](#)

Apply Revert Apply&Save

SmartE Series

VLAN Mode:

- Transparent: In “Transparent” mode, the switch processes the incoming data packets as described in the “Frame switching” section. Neither the structure nor the contents of the data packets are changed. The information about VLAN assignment from a tag that may be contained in the data packet is ignored.
- Tagged: In “Tagged” mode, the switch forwards the data packets based on the VLAN assignment.

Static VLANs

Static VLAN Configuration Webpages:

Clicking on the “Static VLAN Configuration” link takes you to the “Static VLAN Configuration” web page (see below). Up to 32 static VLANs can be set up here.

Clicking on the “VLAN Port Configuration” link takes you to the “[VLAN Port configuration](#)” web page.

Clicking on the “VLAN Port Configuration Table” link takes you to the [VLAN port configuration table](#).

VLAN Diagnostic Webpages:

Clicking on the “Current VLANs” link opens the “[Current VLANs](#)” page as a pop-up.

Static VLAN Configuration

Static VLAN Configuration

List of Static VLANs (?) 1 - VLAN 1

VLAN ID (?) 1

VLAN Name (?) VLAN 1

1	2	3	4	5	6	7	8
U	U	U	U	U	U	U	U
9	10	11	12	13	14	15	16
U	U	U	U	U	U	U	U

(?) Delete

Apply Revert Apply&Save

List of Static VLANs: All VLANs created up to this point are displayed here.

VLAN ID: Set the VLAN ID you wish to assign to the new VLAN. The value must be between 2 and 4094.

VLAN Name: Specify the VLAN name you wish to create.

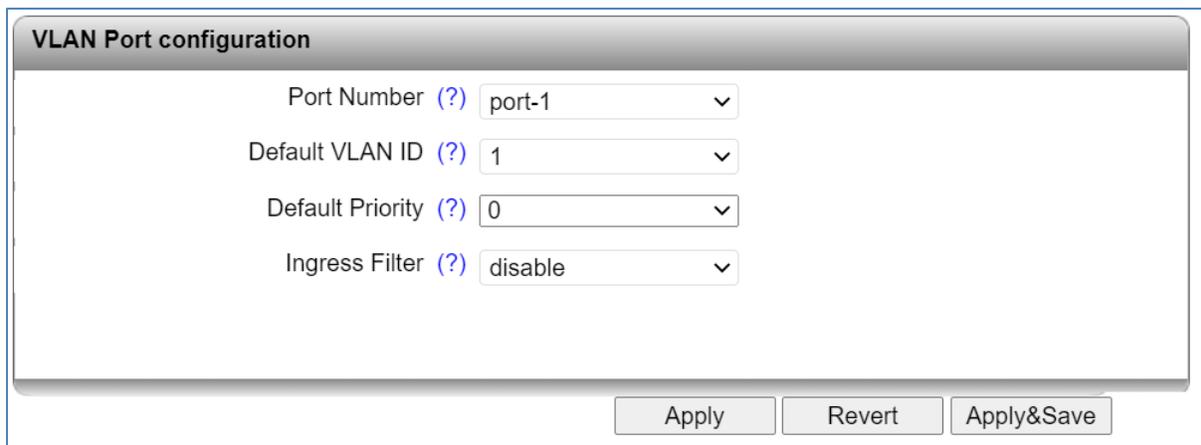
SmartE Series

VLAN Memberships: Specify which ports are to be located in the VLAN.

- T: Tagged port
- U: Untagged port
- -: Not a member of the VLAN

Use the “Delete” button to delete the VLAN selected in the list. VLAN 1 cannot be deleted.

VLAN Port configuration



VLAN Port configuration

Port Number (?) port-1 ▼

Default VLAN ID (?) 1 ▼

Default Priority (?) 0 ▼

Ingress Filter (?) disable ▼

Apply Revert Apply&Save

Port Number: Select the port for which you want to change the VLAN settings.

Default VLAN ID: Select the VLAN ID that is to be assigned to the port.

Default Priority: Set the VLAN priority for the selected port.

Ingress Filter: Specify whether the ingress filter should be activated.

SmartE Series

VLAN Port Configuration Table

VLAN Port Configuration Table			
Port	Default VLAN	Default Priority	Ingress Filter
1	1	0	disable
2	1	0	disable
3	1	0	disable
4	1	0	disable
5	1	0	disable
6	1	0	disable
7	1	0	disable
8	1	0	disable
9	1	0	disable
10	1	0	disable
11	1	0	disable
12	1	0	disable
13	1	0	disable
14	1	0	disable
15	1	0	disable
16	1	0	disable

Current VLANs

This page lists the current VLANs, their type, and the ports for each VLAN, which are either “Tagged” or “Untagged”.

Current VLANs			
VLAN ID	Type	Untagged Member	Tagged Member
1	Static / Management	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	
2	Static		

Configuration – Multicast Filtering

Multicast Filtering

IGMP

IGMP Snooping (?)

Snoop Aging Time (?)

IGMP Query Version (?)

Query Interval (?)

Current Querier (?) No Query device available

IGMP Extensions

Extension FUQ (?)

Extension BUQ (?)

Auto Query Ports (?)

(?)

Static Query Ports (?)

1	2	3	4	5	6	7	8
<input type="checkbox"/>							
9	10	11	12	13	14	15	16
<input type="checkbox"/>							

(?) [Current multicast groups](#)

IGMP Snooping:

- disable: The “IGMP Snooping” function is disabled.
- enable: The “IGMP Snooping” function is enabled.

Snoop Aging Time: Set the snoop aging time. This is the time period during which membership reports are expected from the querier. If no membership reports are received during this time, the associated ports are deleted from the multicast groups. The value must be between 30 and 3600 (default is 300).

IGMP Query Version: Here, you can set the IGMP query version which the switch should use to send the queries. The switches support IGMP query versions v1 and v2. For EtherNet/IP applications, it is recommended that you activate version v2.

Query Interval: Here, you can set the interval at which the switch should send the queries.

Current Querier: Displays the IP address of the current querier in the network.

SmartE Series

 The IGMP querier function can only be used if the device has an IP address. Use of multicast filtering in Unmanaged mode is therefore limited to IGMP snooping.

Clicking on the “Current multicast groups” link opens the “[Current Multicast Groups](#)” page as a pop-up.

Extensions FUQ (Forward Unknown to Querier): Specify whether a multicast group should be created for unknown multicast packets, which forwards the packets in the direction of the querier.

Extension BUQ (Block Unknown at Querier): Specify whether unknown multicast packets should be blocked at the querier.

Auto Query Ports: Specify whether automatic selection of additional query ports is activated. Ports are automatically integrated in every multicast group. In the case of redundancy switch-over, the multicast packets are not blocked because the ports required are already members of the multicast group.

Clear AQP: Button for deleting the ports that are automatically assigned to the groups.

Static Query Ports: Select the ports that are static query ports.

 The device can manage up to 50 dynamic multicast groups.

Click the **Current Multicast Groups** link to open a window that displays the current multicast groups:

Current Multicast Groups		
VLAN ID	Multicast Address	Port Member
1	01:00:5e:00:01:81	56
1	01:00:5e:40:0e:c1	56
1	01:00:5e:40:0f:00	56
1	01:00:5e:7f:ff:fa	6, 56

Configuration – Network Redundancy

Network Redundancy

Spanning-Tree Configuration

RSTP Mode (?) 802.1D ▾

Large Tree Support (?) Disable ▾

Fast Ring Detection (?) Disable ▾

Bridge Priority (?) 32768

Bridge Hello Time (?) 2

Bridge Forward Delay (?) 15

Bridge Max Age (?) 20

(?) [RSTP Port Configuration](#)

(?) [RSTP Port Configuration Table](#)

(?) [RSTP Diagnostic](#)

Link Aggregation

Link Aggregation (?) [Configure Link Aggregation](#)

Apply Revert Apply&Save

Spanning-Tree Configuration Items

- RSTP Mode:**
- Disable: The RSTP function is not activated
 - 802.1D: The RSTP function is activated globally and working in accordance with standard IEEE802.1D-2004

The functions below are only available if “802.1D” is activated.

Large Tree Support: This option makes the ring topology suitable for 28 switches along the relevant path if RSTP is used. The Large Tree Support option could provide an RSTP ring topology with up to 57 devices.

Fast Ring Detection: This function speeds up switch-over to a redundant path in the event of an error and enables easy diagnostics. RSTP Fast Ring Detection assigns an ID to each ring. This ID is communicated to every switch in the respective ring. One switch can belong to several different rings at the same time.

SmartE Series

Bridge Priority: The bridge and backup root can be specified via “Bridge Priority”. Only multiples of 4096 are permitted. The value will be rounded automatically to the next multiple of 4096. When you click on “Apply&Save”, the initialization mechanism is started (default is 32,768).

Bridge Hello Time: Specifies the time interval within which the root bridge regularly reports to the other switches via BPDU.

Bridge Forward Delay: The value indicates how long the switches are to wait for the port state in STP mode to change from “Discarding” to “Listening” and from “Listening” to “Learning” (2 x Forward Delay).

Bridge Max Age: The parameter is set by the root switch and used by all switches in the ring. The parameter is sent to ensure that each switch in the network has a constant value, which is used as the basis for testing the age of the saved configuration.

Clicking on the “RSTP Port Configuration” button takes you to the “RSTP Port Configuration” pop-up (see below).

Clicking on the “RSTP Port Configuration Table” button takes you to the [“RSTP Port Configuration Table”](#) pop-up.

Clicking on the “RSTP Diagnostics” button opens the [“RSTP Diagnostics”](#) page as a pop-up.

SmartE Series

RSTP Port Configuration

RSTP Port Configuration

Select Port (?) port-1

RSTP Enable (?) enable

Admin Path Cost (?) 0

Operating Path Cost (?) 0

Auto Edge (?) enable

Admin Edge (?) Non-Edge

Operating Edge (?) Non-Edge

Priority (?) 128

Forward Transitions (?) 0

Designated Root (?) 8000.00:E0:B3:48:03:90

Designated Bridge (?) 8000.00:E0:B3:48:03:90

Designated Port ID (?) 8001

Designated Cost (?) 0

Protocol Version (?) RSTP

(?) Force RSTP

Apply Revert Apply&Save

Select Port: Select the port for which you want to change the RSTP settings.

RSTP Enable:

- Enable: RSTP is activated for the port
- Disable: RSTP is deactivated for the port

Admin Path Cost: Displays the path costs set for this port. A path cost equal to “0” activates cost calculation according to the transmission speed (10 Mbps = 2,000,000; 100 Mbps = 200,000).

Operating Path Cost: Displays the path costs used for this port.

Auto Edge: Specify whether to automatically switch from non-edge port to edge port after a link up.

SmartE Series

Admin Edge: Specify whether this port is to be operated as an edge port (default setting), if possible.

Operating Edge: Shows whether this port is operated as an edge port or a non-edge port.

Priority: Shows the priority set for this port (default is 128).

Forward Transitions: Indicates the number of times the port has switched from the “Discarding” state to the “Forwarding” state.

Designated Root: Shows the root bridge for this spanning tree.

Designated Bridge: Indicates the switch from which the port receives the best BPDUs.

Designated Port ID: Indicates the port via which the BPDUs are sent from the designated bridge. The value is based on the port priority (2 digits) and the port number.

Designated Cost: Shows the path costs of this segment to the root switch.

Protocol Version: Shows the protocol version.

Force RSTP: Clicking on the “Force RSTP” button activates RSTP for the port as long as it has been operated in STP mode beforehand.

SmartE Series

RSTP Port Configuration Table

RSTP Port Configuration Table			
Port	RSTP Enable	Admin Edge	Admin Cost
1	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
2	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
3	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
4	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
5	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
6	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
7	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
8	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
9	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
10	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
11	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
12	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
13	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
14	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
15	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0
16	enable <input type="checkbox"/>	Non-Edge <input type="checkbox"/>	0

Port: Shows the ports for which RSTP is available.

RSTP Enable: Activate or deactivate RSTP for each port individually.

Admin Edge: Specify whether this port is to be operated as an edge port (default setting), if possible.

Admin Cost: Displays the path costs set for this port. A path cost equal to “0” activates cost calculation according to the transmission speed (10 Mbps = 2,000,000; 100 Mbps = 200,000).

Link Aggregation

Clicking on the “Link Aggregation” link takes you to the configuration page for link aggregation:

Link Aggregation

Available Trunks					
Trunk ID	Trunk Name	Admin	Status	Configure	Delete

Create New Trunk

Name of New Trunk (?)

Create New Trunk (?)

SmartE Series

Name of New Trunk: Enter a name for a new trunk.

Create New Trunk: Click on the “Create” button to create a new empty trunk.

Configure: Clicking on the “Configure” link in the table containing all the created trunks opens the configuration page for the respective trunk.

Configure Trunk

Trunk Number (?) port-52

Admin Mode (?) Enable

Spanning-Tree Mode (?) Enable

Trunk Name (?) Test trunk

Mode (?) Lacp Activ

Member-Ports (?)

1	2	3	4	5	6	7	8
<input type="checkbox"/>							
9	10	11	12	13	14	15	16
<input type="checkbox"/>							

Apply Revert Apply&Save

Trunk Number: Select the trunk to be configured by entering its ID.

Admin Mode: Enable or disable a trunk.

Spanning-Tree Mode: Here, select whether the RSTP protocol is to be enabled for this trunk.

Trunk Name: Here, you can change the name of the trunk.

Mode: Here, you can specify how ports are to be added to the trunk.

- If you select “Static”, the ports are immediately added to the trunk.
- When “LACP Active/Passive” is selected, the two members of a link aggregation first exchange information via LACPDUs:
 - With “Active”, this is regardless of whether the peer also has LACP.
 - With “Passive”, this only occurs after LACPDUs have been received by the peer.

Member-Ports: Select up to four ports that are to belong to the trunk.

Configuration – Security

Security

UI Security

Secure UIs (?) [Security Context](#)

Port Based Security

Port Security Status (?)

Port Based Configuration (?) [Configure Port Based Security](#)

Clear Illegal Counter (?)

Global Radius Authentication Server Configuration

Radius Server (?)

Radius Server Port (?)

Radius Shared Secret (?) Show cleartext secret

Dot1x Authenticator (?)

Port Authentication Table (?) [Dot1x Port Configuration Table](#)

Port Authentication (?) [Dot1x Port Configuration](#)

UI Security Items

Secure UIs: Clicking on the “Security Context” link opens the pop-up of the same name.

Port Based Security Items

Port Security Status: Here, you can globally enable and disable port-based security.

Port Based Configuration: Clicking on the “Configure Port Based Security” link takes you to the configuration page for port-based security (see below).

Clear Illegal Counter: Clicking on the “Clear” button sets the illegal access counter for all of the ports to zero.

Global Radius Authentication Server Configuration Items

Radius Server: Here, you can set the IP address of the RADIUS authentication server.

Radius Server Port: Here, you can set the UDP port of the RADIUS server (default is 1812).

SmartE Series

Radius Shared Secret: Here, you can set the shared secret required for encrypted communication with the RADIUS authentication server. The shared secret must not exceed 128 characters.

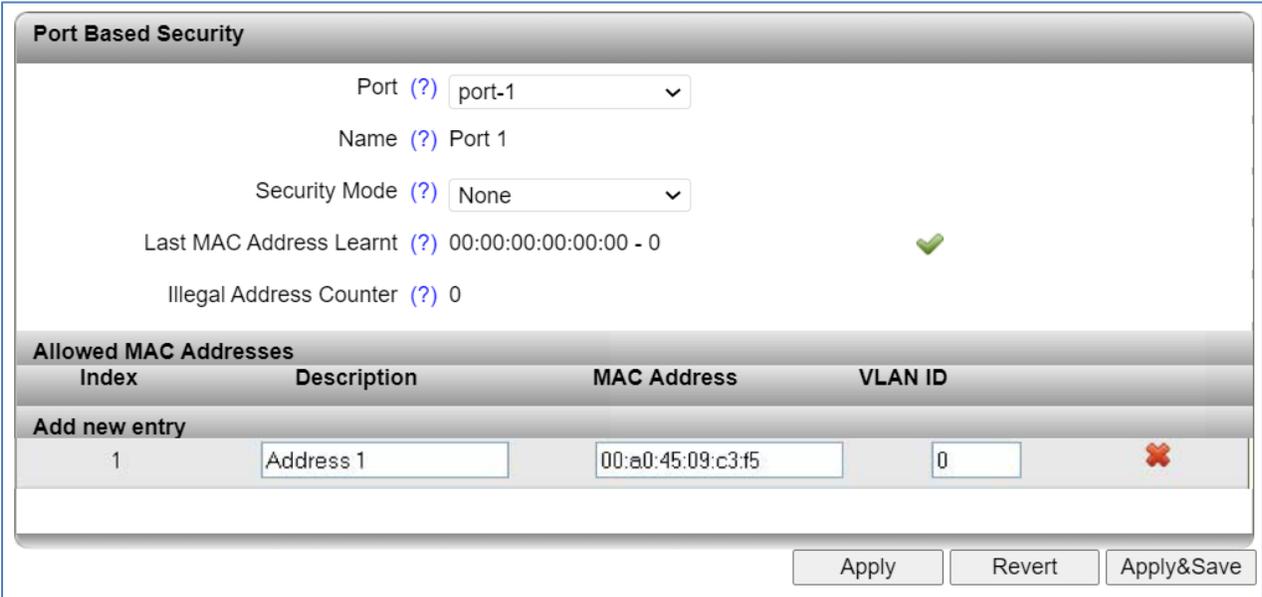
Dot1x Authenticator: Here, you can specify whether the device should be an 802.1x authenticator or not.

 One end device can be authenticated via 802.1x per port.

Port Authentication Table: Clicking on the [“Dot1x Port Configuration Table”](#) link takes you to the table-based configuration page for RADIUS authentication.

Port Authentication: Clicking on the [“Dot1x Port Configuration”](#) link takes you to the port-based configuration page for RADIUS authentication.

Port Based Security



Port Based Security

Port (?) port-1

Name (?) Port 1

Security Mode (?) None

Last MAC Address Learnt (?) 00:00:00:00:00:00 - 0

Illegal Address Counter (?) 0

Allowed MAC Addresses			
Index	Description	MAC Address	VLAN ID
Add new entry			
1	Address 1	00:a0:45:09:c3:f5	0

Apply Revert Apply&Save

Port: Select the port for which the security settings should be made.

Name: Displays the name of the selected port.

Security Mode: Here, set what happens if a MAC address that is not permitted is detected by the device.

- None: No security settings for this port.
- Trap: If a MAC address that is not permitted is detected at the port, a trap is sent to the defined SNMP trap server. The packets are not blocked.

SmartE Series

- **Block:** If a MAC address that is not permitted is detected at the port, all packets are blocked at the port and a trap is sent to the defined SNMP trap server. The packets at this port remain blocked until a permitted MAC address is detected.

Last MAC Address Learnt: Displays the MAC address of the last connected device. By clicking on the green checkmark, this MAC address can be added to the list of permitted MAC addresses.

Illegal Address Counter: Displays the number of times a port has been accessed illegally. Each initial access by a MAC address is counted. Repeated access by known MAC addresses are counted twice if a different MAC address has accessed the port in the meantime.

Allowed MAC Addresses Items

Up to 50 MAC addresses are permitted per port. Each MAC address can only be permitted at one port. MAC addresses that are permitted at one port also cannot be dynamically learned at other ports. The web-based management or network cannot be accessed via a MAC address that is permitted at another port.

Index: Displays the index of the permitted MAC addresses.

Description: Here, you can provide a description for a permitted MAC address.

MAC Address: Enter a MAC address for which you want to allow access. Alternatively, you can select the green checkmark to the right of the “Last MAC Address Learned” field to use the last MAC address that was learned.

VLAN ID: Enter the VLAN where the device with the permitted MAC address is located.

Clicking on the red “X” to the right of this column deletes the permitted MAC address for this port.

SmartE Series

Dot1x Port Configuration Table Page

Dot1x Port Configuration Table		
Interface/Port	Mode	Status
1	Force Authenticate ▼	Initialize
2	Force Authenticate ▼	Initialize
3	Force Authenticate ▼	Initialize
4	Force Authenticate ▼	Initialize
5	Force Authenticate ▼	Initialize
6	Force Authenticate ▼	Initialize
7	Force Authenticate ▼	Initialize
8	Force Authenticate ▼	Initialize
9	Force Authenticate ▼	Initialize
10	Force Authenticate ▼	Initialize
11	Force Authenticate ▼	Initialize
12	Force Authenticate ▼	Initialize
13	Force Authenticate ▼	Initialize
14	Force Authenticate ▼	Initialize
15	Force Authenticate ▼	Initialize
16	Force Authenticate ▼	Initialize

Interface/Port: Displays the port number.

Mode: Here, you can set the authentication mode for the port.

- Auto: Devices connected to the port are authenticated via 802.1x. 802.1x (Dot1x Authenticator) must be activated for this.
- Force Authenticate: All of the devices connected to the port are authenticated.
- Force Unauthenticate: None of the devices connected to the port are authenticated.

Status: Displays the authentication status of the port

Dot1x Port Configuration Page

The screenshot shows a configuration window titled "Dot1x Port Configuration". It contains the following fields and controls:

- Port (?): A dropdown menu with "port-1" selected.
- Authentication Mode (?): A dropdown menu with "Force Authenticate" selected.
- Authentication Status (?): A text field containing "Initialize".
- Re-Authentication Mode (?): A dropdown menu with "Disable" selected.
- Re-Authentication Period (secs) (?): A text field containing "3600".
- EAPOL Frames Received (?): A text field containing "0".
- Last EAPOL Frame Source (?): A text field containing "00:00:00:00:00:00".

At the bottom right of the window, there are three buttons: "Apply", "Revert", and "Apply&Save".

Port: Here, select the port for which you wish to carry out RADIUS configuration.

Authentication Mode: Here, you can set the authentication mode for the port.

- Auto: Devices connected to the port are authenticated via 802.1x. 802.1x (Dot1x Authenticator) must be activated for this.
- Force Authenticate: All of the devices connected to the port are authenticated.
- Force Unauthenticate: None of the devices connected to the port are authenticated.

Authentication Status: Displays the authentication status of the port

Re-Authentication Mode: Here, you can specify whether a client should be re-authenticated at a regular interval.

Re-Authentication Period (secs): Set the interval at which a client should be re-authenticated (1 ... 65,535 seconds).

EAPOL Frames Received: Displays the received EAPOL packets.

Last EAPOL Frame Source: Displays the last MAC address from which an EAPOL packet was received at the port.

Configuration – DHCP Service

DHCP Service

DHCP Network Service (?)

Running State (?) Inactive

Pool Start Address (?)

Pool Size (?)

Network Mask (?)

Router IP (?)

DNS IP (?)

Lease Time (s) (?)

Accept Bootp (?)

DHCP Port-based Service (?) [Port-based DHCP Configuration](#)

Leases

(?) [Current DHCP leases](#)

(?) [DHCP static leases](#)

DHCP Network Service: Select the DHCP service you wish to use.

- None: No DHCP service will be used on the switch.
- Relay Agent: The DHCP relay agent (DHCP option 82) is enabled.
- Server: The switch will be used as the DHCP server. This can only be activated if the IP Address Assignment mode is set to “STATIC”.

When “Relay Agent” is selected as the DHCP network service, the following fields become available:

Option 82: Here, select the address that should be used as the remote ID.

- IP: Uses the IP address of the switch as the remote ID.
- MAC: Uses the MAC address of the switch as the remote ID.

Server IP Address: Here, set the IP address of the DHCP server in your network.

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Port Mode: Here, select the ports for which the DHCP relay agent should be activated.

When “Server” is selected as the DHCP network service, the following fields become available:

Running State: Shows the current status of the DHCP server. The status is “Inactive” if some setting options are incorrect.

Pool Start Address: Set the first IP address of the DHCP server address pool.

Pool Size: Set the number of IP addresses in the DHCP server address pool. Please note that the number of IP addresses must match the configured subnet.

Network Mask: Set the subnet mask that is assigned to the DHCP clients.

Router IP: Here, set the router/default gateway IP address that is assigned to the DHCP clients.

DNS IP: Here, set the DNS IP address that is assigned to the DHCP clients.

Lease Time (s): Here, you can set the time that the DHCP server leases an IP address to a client before it has to report to the server again. The value must be between 300 and 2,592,000 seconds; “0” is interpreted as an infinite time (default is 3600).

Accept Bootp: Here, you can specify whether the switch acting as the DHCP server accepts BootP requests. If this function is activated, an IP address with an infinite lease time is assigned to the requesting DHCP clients.

DHCP Port-based Service: Clicking on the “Port-based DHCP Configuration” link opens the “Port-based DHCP Configuration” window (See below).

Leases

Clicking on the “Current DHCP leases” link opens the “[Current DHCP leases](#)” window where the IP addresses that are currently assigned are displayed

Clicking on the “DHCP static leases” link opens the “[DHCP Static Leases](#)” window for configuring static IP address assignments.

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Port-based DHCP Configuration

DHCP Port Local Service

Select Port (?)

Local Service enable (?)

Local IP (?)

Netmask (?)

Router (?)

DNS (?)

Clear Port Local Service (?)

Select Port: Select the port for which you wish to carry out port-based DHCP server configuration.

Local Service enable: Here, activate the port-based DHCP server function for the selected port.

Local IP: Enter the IP address that is assigned to the client at the selected port.

Netmask: Here, enter the subnet mask that is assigned to the client at the selected port.

Router: Here, enter the gateway address that is assigned to the client at the selected port.

DNS: Here, enter the DNS address that is assigned to the client at the selected port.

Current DHCP Leases

Current DHCP leases				
Leased IP	Client ID	System Uptime	Local Port	State
192.168.1.50	00:a4:45:70:d9:34			static

Lease count (?) 1

(?)

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Leased IP: Displays the assigned IP addresses.

Client ID: Displays the MAC address of the client to which the IP address is assigned.

System Uptime: Displays the time that has elapsed since the IP address was assigned to the client.

Local Port: Displays the port to which the client is connected.

State: Displays the status of the client.

Lease count: Displays the number of assigned IP addresses.

Release: Clicking on the “Release” button releases unused entries again.

DHCP Static Leases

DHCP Static Leases			
Lease list			
No	IP address	Client address	Delete
1	192.168.1.50	00:a4:45:70:d9:34	

Create new static entry

IP address (?)

Client address (?)

(?)

Clear static table (?)

Lease list Items

IP address: Displays the static IP address that is assigned.

Client address: Displays the MAC address of the client.

Delete: Clicking on the red “X” in the “Delete” column deletes the entry.

Create new static entry items

IP address: Enter the static IP address that you wish to assign.

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Client address: Enter the MAC address to which you wish to assign a static IP address.

Create: Click on the “Create” button to perform the static assignment.

Clear static table: Click on the “Clear” button to delete all the static DHCP leases.

Configuration – Local Events

Event	Alarm Output 1	Advanced
Power Supply Lost	<input checked="" type="checkbox"/> o	
Monitored Link Down	<input type="checkbox"/>	Ports [+/-]

Alarm output 1

Here, you can activate the digital alarm output or signal contact and read the current status (if a red “o” is present, this event has occurred).

Events

Specify the conditions under which the digital alarm output or signal contact should report an error.

Power Supply lost: An error message is generated if supply voltage PWR1 or PWR2 is lost.

Monitored link down: Under “Advanced”, select the ports to which link down behavior should be reported.

Configuration – Quality of Service

Quality of Service

Traffic Prioritization

Quality of Service Profile (?)

Port Priority (?) [Configure Port priority for multiple ports at once](#)

Broadcast Limiter

Broadcast (?)

Broadcast Threshold (?)

Multicast (?)

Multicast Threshold (?)

Unknown Unicast (?)

Unicast Threshold (?)

If you are not firm with handling the dimension packet per seconds the following link will help you. [Help](#)

Flow Control

Port Configuration (?) [Configure Flow control per port](#)

Port Configuration Table (?) [Configure Flow control for multiple ports at once](#)

Traffic Prioritization

The switch has eight priority queues into which incoming data traffic is sorted according to specific criteria. These queues are processed in descending order of priority. High-priority data traffic is therefore always forwarded first.

Quality of Service Profile: Select the profile for prioritizing data traffic.

- Universal: This profile is the factory setting on standard versions. Class of Service (VLAN tag priority) is activated for data prioritization.
- EtherNet/IP: In this profile, prioritization via DSCP values is activated in addition to Class of Service. This means that preferential treatment is given to EtherNet/IP data traffic. Only control packets of redundancy protocols (RSTP and MRP) are given even higher priority.

Port Priority: Clicking on the link takes you directly to the configuration page for the default priority. Incoming data traffic on the device that does not have a priority tag is marked according to the setting

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and is assigned to a priority queue. To activate these settings, the VLAN mode of the device must also be set to “Tagged”.

Broadcast Limiter items

Broadcast: Activate or deactivate the broadcast limiter.

Broadcast Threshold: Set the threshold value in frames per second for the broadcast limiter. The value entered is rounded down to the next valid value.

Multicast: Activate or deactivate the multicast limiter.

Multicast Threshold: Set the threshold value in frames per second for the multicast limiter. The value entered is rounded down to the next valid value.

Unknown Unicast: Here, you can activate or deactivate the limiter for unknown unicasts. Unicasts of a MAC address that have been learned by the switch are not affected.

Unicast Threshold: Here, set the threshold value in frames per second for the limiter of unknown unicasts. The value entered is rounded down to the next valid value.

Flow Control items

Port Configuration: Clicking on the “Configure Flow Control per port” link opens the “[Port Configuration](#)” page, which contains the configuration options for flow control.

Port Configuration Table: Clicking on the “Configure Flow control for multiple ports at once” link opens the “[Port Configuration Table](#)” page where flow control can be configured for all ports.

Diagnostics – LLDP Topology

LLDP Topology			
Local Port	Chassis ID	IP Address	Remote Port
16	F8:75:A4:8B:07:7D		F8:75:A4:8B:07:7D

Local Port: Contains the port number of the local switch that is used to connect a neighbor to this switch.

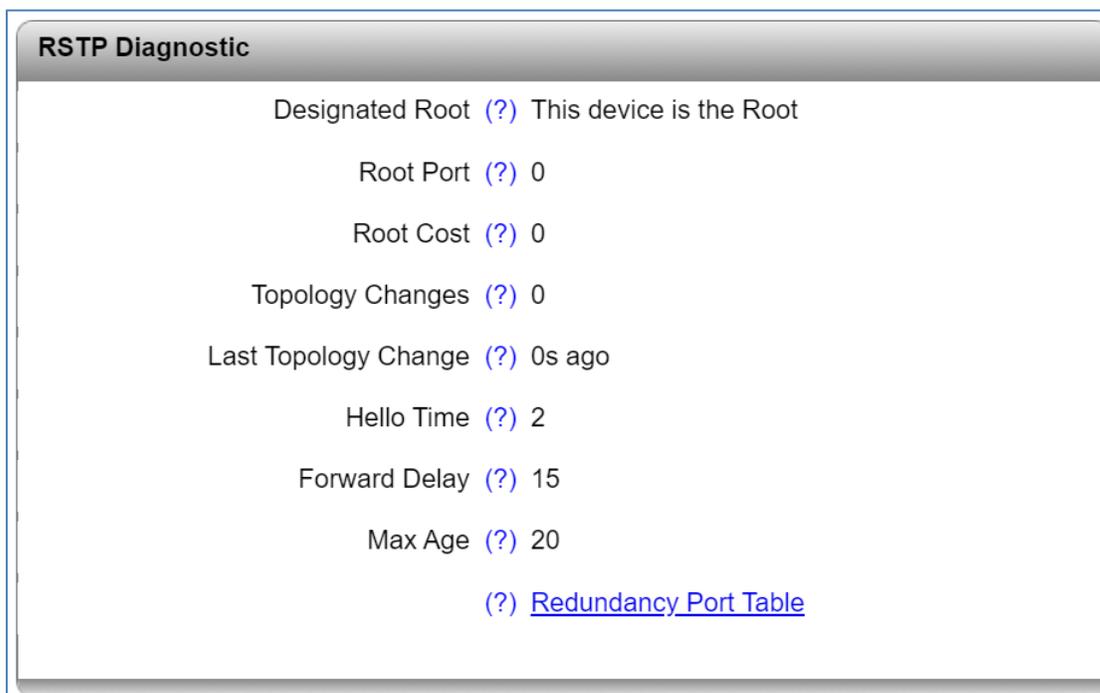
Chassis ID: MAC address of the connected neighboring device.

IP Address: Management IP address for the neighbor.

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Remote Port: Port number of the neighboring switch that is used to connect the neighbor to the local switch.

Diagnostics – RSTP Diagnostic



Designated Root: Shows the root bridge for this spanning tree.

Root Port: Displays the port to which the root is connected. If the root is not directly connected, it shows the direction of the root.

Root Cost: Displays the total path costs for the root.

Topology Changes: Displays the number of topology changes.

Last Topology Change: Displays when the last topology changes took place.

Hello Time: Shows the hello time set at the root.

Forward Delay: Shows the forward delay set at the root.

Max Age: Shows the maximum age time set at the root.

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Clicking on the “Redundancy Port Table” button opens a table containing information about the individual ports and their redundancy mechanism assignment:

Redundancy Port Table				
Further Redundancy State Information				
(?) RSTP Port Configuration				
Physical Ports				
Port	Protocol	Blocking State	Protocol Role	
1	RSTP	Disabled	Disabled	
2	RSTP	Disabled	Disabled	
3	RSTP	Disabled	Disabled	
4	RSTP	Disabled	Disabled	
5	RSTP	Disabled	Disabled	
6	RSTP	Disabled	Disabled	
7	RSTP	Disabled	Disabled	
8	RSTP	Disabled	Disabled	

Diagnostics – Current VLANs

Refer to [Configuration – VLAN Configuration – Current VLANs](#)

Diagnostics – Current Multicast Groups

Refer to [Configuration – Multicast Filtering – Current Multicast Groups](#)

Diagnostics – Port Mirroring

The port mirroring function allows you to mirror the incoming and outgoing data traffic of individual ports to one port where it can be analyzed using a connected diagnostic device or tool.

Port Mirroring

Global Status (?)

Destination Port (?)

Mirrored Ports (Ingress) (?)

1	2	3	4	5	6	7	8
<input type="checkbox"/>							
9	10	11	12	13	14	15	16
<input type="checkbox"/>							
52							
<input type="checkbox"/>							

Mirrored Ports (Egress) (?)

1	2	3	4	5	6	7	8
<input type="checkbox"/>							
9	10	11	12	13	14	15	16
<input type="checkbox"/>							
52							
<input type="checkbox"/>							

- Global Status:**
- Enable: Port mirroring is activated globally
 - Disable: Port mirroring is deactivated globally

Destination Port: Select the port to which the diagnostic device or tool is connected.

Mirrored Ports (Ingress): Specify the ports from which the incoming data traffic should be mirrored.

Mirrored Ports (Egress): Specify the ports from which the outgoing data traffic should be mirrored.

Diagnostics – Trap Manager

Trap Manager

Trap Mode (?)

Trap Server (?)

Add Trap Server (?)

Test Trap Connection (?)

Index	Trap Name	Mode
1	Cold Start	<input checked="" type="checkbox"/>
2	Warm Start	<input checked="" type="checkbox"/>
3	User Password Changed	<input checked="" type="checkbox"/>
4	Authentication Failure	<input checked="" type="checkbox"/>
5	Firmware Configuration	<input checked="" type="checkbox"/>
6	Power Source Changed	<input checked="" type="checkbox"/>
7	RSTP Link Failure	<input checked="" type="checkbox"/>
8	RSTP New Root	<input checked="" type="checkbox"/>
9	RSTP Topology Change	<input checked="" type="checkbox"/>
10	Link Down	<input checked="" type="checkbox"/>
11	Link Up	<input checked="" type="checkbox"/>
12	Port Security Violation	<input checked="" type="checkbox"/>

Trap Mode:

- Enable: The sending of SNMP traps is enabled
- Disable: The sending of SNMP traps is disabled

Trap Server: All trap servers that are to receive SNMP traps from this device are displayed here.

Add Trap Server: Enter the IP address or DNS name of a trap server and click on “Apply&Save” to create this trap server.

Test Trap Connection: Click on the “Send Trap” button to test the connection to the trap server.

The table lists the SNMP traps that the device can send. Select the actions for which SNMP traps should be sent by clicking the corresponding check boxes.

Diagnostics – Port Counter

This page provides an overview of the port statistics for the device. Four views provide an overview of the general, sent and received packets, errors, and collisions on the individual ports.

Port Counter					
Overview Transmit Receive Surveillance					
Port Counter Overview					
Interface/Port	Received Packets	Transmitted Packets	CRC Errors	Drop Events	Collisions
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0
15	0	0	0	0	0
16	13706	26471	0	0	0

Clear statistics of all ports (?)

Interface/Port: Clicking on one of the port numbers in the “Interface/Port” column takes you to the [Port Details](#) page. Here, you can view detailed statistics about the sent and received data packets for every port. In addition, the current and maximum port utilization is displayed as a percentage.

Clear statistics of all ports: Clicking on the “Clear” button resets all of the port counters in the Overview, Transmit, and Receive views to zero.

In Surveillance view, click the button to reset the CRC Proportion Peak and CRC Status of all ports.

Port Configuration: Clicking on the “Configure Ports” link opens the [Port Configuration](#) page.

Port Details Page

Port Counter Details

Port Counter Overview

Port Counter Overview (?) [Monitor all ports simultaneously.](#)

Port (?) ▼

Name (?) Port 16

Utilization Details

Tx Utilization (%) (?) 0

Rx Utilization (%) (?) 0

Rx max Utilization (%) (?) 0

Received Port Details

Packets (Rx) (?) 14865

Unicast (Rx) (?) 13004

Multicast (Rx) (?) 1341

Broadcast (Rx) (?) 520

64 Octets (Rx) (?) 7920

65 To 127 Octets (Rx) (?) 577

128 To 255 Octets (Rx) (?) 945

256 To 511 Octets (Rx) (?) 6

512 To 1023 Octets (Rx) (?) 5450

1024 To 1518 Octets (Rx) (?) 11

Fragments (?) 0

Undersize (?) 0

Oversize (?) 0

CRC errors (?) 0

Jabbers (?) 0

Drop Events (?) 0

Transmission Port Details

Packets (Tx) (?) 28962

Unicast (Tx) (?) 13769

Multicast (Tx) (?) 15193

Broadcast (Tx) (?) 0

Clear Port Statistics (?)

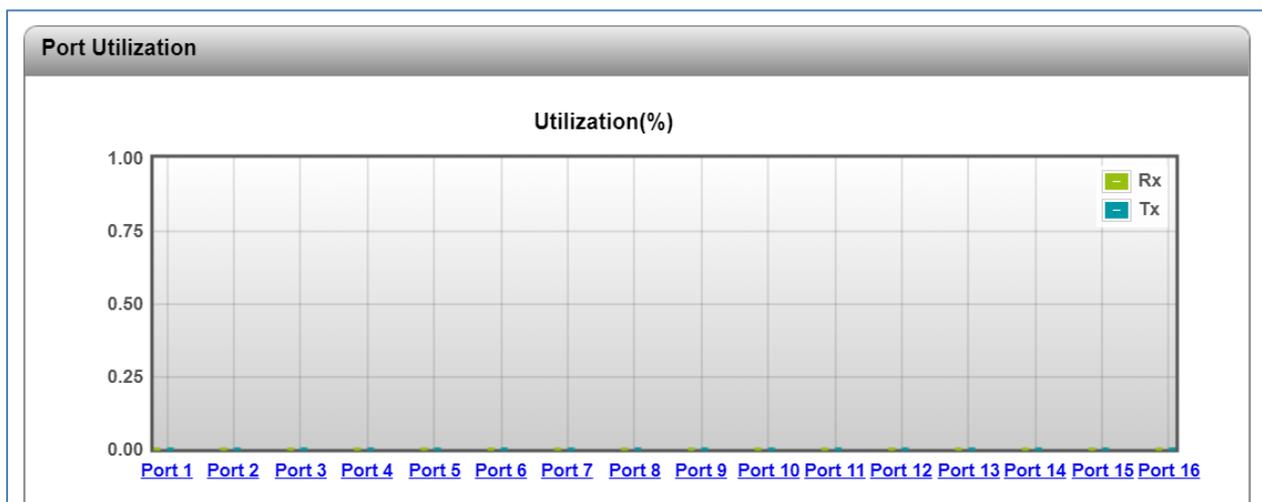
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Port Counter Overview: Clicking on the “Monitor all ports simultaneously” link takes you back to the “Port Counter” overview page.

Clear Port Statistics: Clicking on the “Clear” button resets all of the counters for the currently displayed port to zero.

Diagnostics – Port Utilization

Here you will find an overview of the percentage port utilization for this device. For a detailed overview, click on the graph of an individual port.



Diagnostics – Snapshot

You can use the snapshot function to capture and download all parameters relevant to the runtime (e.g., configuration, events, etc.) and provide them to a service technician.

Snapshot

Take snapshot (?)

Current snapshot state (?) Not present

Timestamp of last snapshot (?) No snapshot file present

Download of snapshot file (?) [File transfer](#)

Take snapshot: Click the “Snapshot” button to take a snapshot.

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Current snapshot state: Indicates whether the snapshot is available, is currently being generated or does not exist.

Timestamp of last snapshot: Displays the time at which the last snapshot was generated.

Download of snapshot file: Clicking on the “File transfer” link opens the window for manual file download.

Diagnostics – Syslog

The Syslog function enables messages or events to be transmitted to one or more servers via UDP. In the event that two Syslog servers have been configured, the switch sends all messages/events to both servers.

Syslog

Activate syslog (?) Enable

Syslog server 1 (?)

Syslog server 1 port (?)

Syslog server 2 (?)

Syslog server 2 port (?)

Syslog test message (?)

Index	Message group	Status
1	Connectivity	<input checked="" type="checkbox"/>
2	Diagnosis	<input checked="" type="checkbox"/>
3	Automation protocol	<input checked="" type="checkbox"/>
4	System information	<input checked="" type="checkbox"/>
5	Redundancy	<input checked="" type="checkbox"/>
6	Security	<input checked="" type="checkbox"/>

Activate syslog: Activate or deactivate the Syslog function here.

Syslog server 1: Set the IP address or DNS name of the first Syslog server here.

Syslog server 1 port: Set the UDP port of the first Syslog server here (default: 514).

Syslog server 2: Set the IP address or DNS name of the second Syslog server here.

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Syslog server 2 port: Set the UDP port of the second Syslog server here (default: 514)

Syslog test message: Click on the “Send message” button to test the connection to the Syslog server. With Syslog, message reception is not confirmed by the server. Therefore the connection status can only be checked on the server, and not in the web-based management of the switch.

Status: Use the check boxes in the “Status” column to select the categories whose events are to be sent to the Syslog server.

The table below provides an overview of the specific events in the respective categories.

Connectivity	IP conflict detected
	TFTP connection failed
	ACDconflict detected IP
	LLDP new neighbor on port
	LLDP neighbor information changed on port
	Link monitor alarm raises on port
	IP address changed on interface
	Port Link up/down
	SFP module plugged on Port
	ACD device has no IP
	MTU size changed
Diagnosis	CRC status and peak on port reset
	CRC status on port changed to ok
	CRC status on port changed to critical
	CRC thresholds on port changed by user
	Alarm output failed
	CRC status on port changed to warning

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System information	System time synchronized
	Pluggable memory removed
	Update firmware successful
	Configuration saved/loaded on/from pluggable memory
	Update failed
	Configuration difference detected
	Configuration saved/loaded successfully
	Configuration parameter changed
	Smart Mode entered
	Smart Mode button enabled/disabled
	Error in configuration file
	Pluggable memory cleared
	New interface created
	Power supply lost
	Name of the device changed
	Parameter has been changed by the user
	FW image not valid
	Update processing
	Write to flash memory
	Wrong update image
	IGMP Snooping mode changed
	IGMP Snooping aging time changed
	Syslog test message
	Start FW update
	Write FW image into flash
Redundancy	RSTP ring detected
	RSTP topology changed
	RSTP root changed
	RSTP ring failed

CLI (Command Line Interface)

Using the Command Line Interface (CLI)

The CLI is a text-based tool that can be used to configure the switch. The CLI is accessed by means of a connection via Telnet (factory default) or SSH. A third-party program such as PuTTY can also be used for connection.

Connect to the IP address of the switch and enter the username (default is **root**) and password (default is blank). The switch model/SKU number will be displayed.



```
Telnet 192.168.1.10
(SG300-16)
User: root
Password:
*****
SG300-16
*****
>
```

Basic Principles of CLI Commands

In this manual, **CLI command names** are in bold. *CLI parameters* are in italics and must be replaced by appropriate values (e.g., names or numbers). If a command has several parameters, the order of these must be strictly observed.

The parameters of a command may be mandatory, optional or a selection of values (see Command Syntax table below).

Command Syntax Symbols

The following symbols are used to describe the values and arguments for command entries in the CLI.

<angle brackets>	Variable or value that must be specified.
[square brackets]	Optional parameters or arguments.
optionA optionB	Vertical bar. Separates multiple exclusive items in a list of options.
{braces}	Denotes the mandatory selection of a value from a given list of values
[{}] Braces within square brackets	Denotes a selection within an optional parameter

Command Syntax

A command consists of one or more terms which can be followed by one or more parameters. These parameters can be mandatory or optional values.

Some commands, e.g., **show network** or **clear config**, do not require parameters. Other commands, e.g., **network parms**, require values to be specified after the command name. The parameters must be entered in the specified order, whereby optional parameters always follow mandatory parameters.

The following example illustrates the syntax using the **network parms** command:

```
network parms <ipaddr> <netmask> [gateway]
```

network parms is the command name. <ipaddr> and <netmask> are parameters and represent mandatory values, which must be specified after entering the command name. [gateway] is an optional parameter, which means that a value does not have to be specified.

The following examples illustrate the *correct* syntax for entering the **network parms** command:

```
network parms 192.168.10.42 255.255.255.0
```

```
network parms 192.168.10.42 255.255.255.0 192.168.10.0
```

The following examples illustrate *incorrect* syntax for entering the **network parms** command:

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network parms 192.168.10.42 - missing mandatory parameter

network parms 255.255.255.0 - missing mandatory parameter

network parms 255.255.255.0 192.168.10.42 - incorrect parameter sequence

Using the CLI Help

Entering a question mark (?) in the command prompt displays a list of all the commands currently available together with a brief description. Typing a question mark (?) after each entry displays all the available command names or parameters from that point on.

Auto Completion of Commands

The auto completion command is an additional way of writing a command, provided enough letters have already been entered to clearly identify the command name. As soon as enough letters have been entered, press space or TAB to automatically complete the words.

Using the CLI Network Scripting UI

The CLI network scripting UI enables CLI commands from scripts to be loaded into the device via the network. This means that the device can be configured and diagnosed using a URL via a PC or from a controller. Each command that is entered is confirmed by the device, either with OK (config commands) or by outputting the device data (show commands).

The command entry must follow a specific syntax:

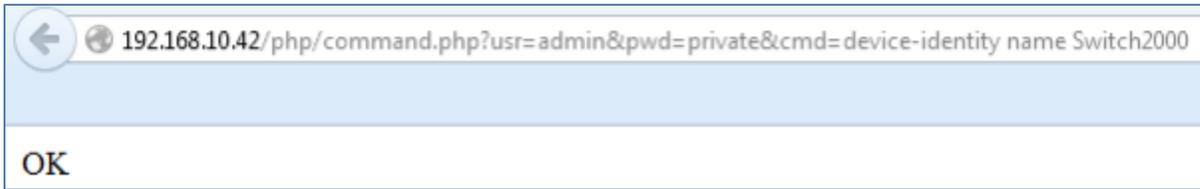
```
http://ipaddress/php/command.php?usr=username&pwd=password&cmd=cli_command_1 | cli_command_2 | ...
```

The following examples illustrate the correct syntax for entering commands via the CLI network scripting UI:

Example: changing the device name

```
http://192.168.10.42/php/command.php?usr=admin&pwd=private&cmd=device-identity  
name SmartE
```

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Example: displaying the network parameters and changing the user password

`http://192.168.10.42/php/command.php?usr=admin&pwd=private&cmd=show network | users passwd private2`



CLI Commands

General Commands

Command	Value range	Default
reload		
Description	Restart the device	
Example	reload	

Command	Value range	Default
logout		
Description	Exit the CLI session (unsaved changes will be lost).	
Example	logout	

Command	Value range	Default
help		
Description	Open the CLI help	
Example	help	

Command	Value range	Default
quit		
Description	Exit the CLI session (unsaved changes will be lost).	
Example	quit	

Command	Value range	Default
show tech-support		
Description		
Example	show tech-support	

Command	Value range	Default
clear config		
Description	Reset configuration to factory default.	
Example	clear config	

Command	Value range	Default
write <configuration-name>	Max. 256 chars	
Description	Save the device configuration.	
Example	write prodconfig	

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Command	Value range	Default
show configuration-status		
Description	Displays the following items: Configuration Name Configuration Status (modified, saved, not saved, etc) Configuration Source	
Example	show configuration-status	

Command	Value range	Default
users create {username} {password} {repeat-password}	Password 8 – 64 characters	
Description	Create a new user	
Example	users create kautsky password123 password123	

Command	Value range	Default
users delete {username}		
Description	Delete a user	
Example	users delete kautsky	

Command	Value range	Default
users passwd <username> <old-password> <new-password> <repeat-new-password>	New password (8 - 64 chars)	
Description	Change a user password	
Example	users passwd admin1 oldpass Switch123 Switch123	

Command	Value range	Default
users roles create <rolename>		
Description	Create a new rolename	
Example	users roles create testrole	

Command	Value range	Default
users roles delete <rolename>		
Description	Delete a rolename	
Example	users roles delete testrole	

Command	Value range	Default
users role <username> {admin expert read-only}		
Description	Set user role.	
Example	Users role gandalf admin	

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Command	Value range	Default
users status <username> {enable disable}		
Description	Enable or disable a user account. A disabled user cannot login to the device anymore.	
Example	users status noobuser enable	

Command	Value range	Default
users lock-status <username> {enable disable}		
Description	Enable or disable the mode that a user access to the device is denied if the configured number of consecutive invalid login attempts has been reached.	
Example	users lock-status newuser1 disable	

Command	Value range	Default
users lock-limit <username> <lock-limit>	(1 – 100)	
Description	Set user lock limit	
Example	users lock-limit userbob 5	

Command	Value range	Default
users lock-timeout <username> <value>	1-1440 minutes	
Description	Set user lock timeout	
Example	users lock-timeout userbob 5	

Command	Value range	Default
users roles add-group-ro {rolename} {system ident user network ui automation discovery l2l3 redundancy timesynch dhcp port-cfg rmon port-mirr port-sec routing logging}		
Description	Add permission group to role with read-only capabilities	
Example	users roles add-group-ro testgroup ui	

Command	Value range	Default
users roles add-group-rw {rolename} {system ident user network ui automation discovery l2l3 redundancy timesynch dhcp port-cfg rmon port-mirr port-sec routing logging}		
Description	Add permission group to role with read-write capabilities	
Example	users roles add-group-rw testgroup ui	

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Command	Value range	Default
users roles remove-group <rolename> <permissiongroup>		
Description	Remove permission group from role	
Example	users roles remove-group testrole discovery	

CRC Surveillance Commands

Command	Value range	Default
show surveillance crc port-no <port>		
Description	Displays the CRC information of the selected port.	
Example	show surveillance crc port-no 5	

Command	Value range	Default
show surveillance crc all		
Description	Shows the CRC information of all ports.	
Example	show surveillance crc all	

Command	Value range	Default
show port-info port-no <port>		
Description	Displays port information of the selected port, including the CRC status.	
Example	show port-info port-no 5	

Command	Value range	Default
show snmp-trap		
Description	Shows all SNMP traps, including the CRC trap (ok / warning / critical).	
Example		

Command	Value range	Default
clear crc-surveillance port-no <port>		
Description	Sets the CRC error counter of the selected port to 0 and the CRC error status to OK.	
Example	clear crc-surveillance port-no 5	

Command	Value range	Default
clear crc-surveillance all		
Description	Sets the CRC error counter of all ports to 0 and the CRC error status to OK	
Example		

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Command	Value range	Default
port <port> crc-threshold <threshold>	1000 ppm to 1000000 ppm	40000
Description	Sets the CRC threshold for the selected port	
Example	port 5 crc-threshold 50000	

Port Security Commands

Command	Value range	Default
port-security status {enable disable}		disable
Description	Enable or disable port security	
Example	port-security status enable	

Command	Value range	Default
port-security port <port-no> status <status>	{none trap block}	
Description	Set port security mode for a specific port none : no security function trap : send trap when a new device/new MAC address is detected block : block everything except the exceptions entered (whitelist)	
Example	port-security port 1 status trap	

Command	Value range	Default
port-security port <port-no> add-mac <MAC> <VLAN>	MAC: (xx:xx:xx:xx:xx:xx)	
Description	Create new filter entry An entry consists of MAC and VLAN. Always use "VLAN 1" for WLAN. Note: the command "port-security port 10 configure" can be used to add a description.	
Example	port-security port 10 add-mac 00:A0:45:DD:5E:8C 1	

Command	Value range	Default
port-security port <port-no> remove-mac <MAC> <VLAN>	MAC: (xx:xx:xx:xx:xx:xx) VLAN: for WLAN: 1	
Description	Remove filter entry. The entry is specified via MAC and VLAN.	
Example	port-security port 10 remove-mac 00:a0:45:dd:5e:8c 1	

Command	Value range	Default
port-security port <port-no> configure <MAC> <VLAN> description <description>	description: (15 characters)	
Description	Add or edit description for filter entry. The entry is specified via MAC and VLAN.	
Example	port-security port 10 configure 00:a0:45:dd:5e:8c 1 description "Testdesc1"	

SmartE Series

Command	Value range	Default
show port-security port <port-no>	Port: (1... all)	
Description	Show all current security settings for the port: Security mode Last MAC Address Learned Illegal Address Counter Allowed MAC Address table with columns (description, MAC-address, VLAN ID)	
Example	show port-security port 1	

Command	Value range	Default
show port-security global		
Description	Shows the global port security settings	
Example	show port-security global	

Command	Value range	Default
port-security clear-illegal-cntr		
Description	Clear port security illegal counters.	
Example	port-security clear-illegal-cntr	

Radius Commands

Command	Value range	Default
users radius auth-server _Id <Id> name		
Description	Configure the name of the authentication server	
Example	users radius auth-server _Id 1 name testname	

Command	Value range	Default
users radius auth-server _Id <Id> shared-secret		
Description	Shared secret (password) for login to Radius server	
Example	users radius auth-server _Id 1 shared-secret "MySecret"	

Command	Value range	Default
users radius auth-server _Id <Id> udp-port		
Description	Radius server port	
Example	users radius auth-server _Id 1 udp-port 8888	

Command	Value range	Default
users radius auth-server _Id <Id> ip-address		
Description	IP address of the Radius server Only "1" may be used as the Id at present.	
Example	users radius auth-server _Id 1 ip-address 192.168.0.250	

Dot1x Authentication Commands

Command	Value range	Default
show dot1x-authenticator global		
Description	Displays the global dot1x mode.	
Example	show dot1x-authenticator global	

Command	Value range	Default
show dot1x-authenticator port <port-no>		
Description	Shows the following parameters for dot1x on a selected port: Control Mode, Guest VLAN, Re-Authentication Mode, Re-Authentication Timeout, Last EAPOL MAC Address, Status	
Example	show dot1x-authenticator port 5	

Command	Value range	Default
dot1x-authenticator port <port-no> reauthenticate		
Description	Reauthenticate the client on the given port.	
Example	dot1x-authenticator port 10 reauthenticate	

Command	Value range	Default
dot1x-authenticator port <port-no> reauthentication-period <value>	1 - 65535 seconds	
Description	Re-Authenticate client at regular interval defined by the period.	
Example	dot1x-authenticator port 10 reauthentication-period 100	

Command	Value range	Default
dot1x-authenticator port <port-no> reauthentication-mode {enable disable}		
Description	Enable Re-Authentication mode to authenticate the client at regular interval defined by Re-Authentication Period.	
Example	dot1x-authenticator port reauthentication-mode enable	

Command	Value range	Default
dot1x-authenticator port <port-no> control- mode {auto force-authenticate force- unauthenticate}		
Description	Configure 802.1x on this port. Force Authenticate: Authenticate all the devices on this port. (Disable 802.1x) Force Unauthenticate: Do not authenticate any device on this port.	
Example	dot1x-authenticator port 10 control-mode force-authenticate	

SmartE Series

Command	Value range	Default
dot1x-authenticator global {enable disable}		
Description	Enable or Disable dot1x authenticator globally.	
Example	dot1x-authenticator global enable	

System Commands

Command	Value range	Default
show version		
Description	Display the device description and hardware information: Serial number Hardware version Firmware version Bootloader version	
Example	show version	

Command	Value range	Default
show sys-info		
Description	Display the system information: Device name Object ID Device description Contact person Device location	
Example	show sys-info	

Command	Value range	Default
device-identity name <name>	<name> max. 256 chars	SmartE
Description	Change the device name	
Example	device-identity name Switch-xyzyz	

Command	Value range	Default
device-identity description <description>	<description> max. 256 chars	
Description	Change the device description	
Example	device-identity description Switch dilvish	

Command	Value range	Default
device-identity location <location>	<location> max. 256 chars	
Description	Change the device location	
Example	device-identity location Nakatomi tower	

SmartE Series

Command	Value range	Default
device-identity contact <contact>	<contact> max. 256 chars	
Description	Change the contact person for the device	
Example	device-identity contact Thomas A. Anderson	

Command	Value range	Default
snapshot trigger		
Description	Trigger the snapshot function to capture the current runtime parameters.	
Example	snapshot trigger	

Command	Value range	Default
show snapshot status		
Description	Shows the status of the SnapShot file (not present / busy / present / error).	
Example	show snapshot status	

Command	Value range	Default
show snapshot timestamp		
Description	Shows the timestamp of the last snapshot.	
Example	show snapshot timestamp	

Command	Value range	Default
show transfer-status		
Description	Shows the status of the currently running snapshot transfer	
Example	show transfer-status	

Command	Value range	Default
snapshot trigger		
Description	Creates a snapshot with the currently applied parameters.	
Example	snapshot trigger	

Command	Value range	Default
file-transfer <method> read-from-device snapshot <ipaddress> <file-name>		
Description	Starts the download of the snapshot from the device	
Example	file-transfer tftp read-from-device snapshot 192.168.1.40 Snap1	

Command	Value range	Default
show syslog message-group		
Description	Shows the activation status of the group messages.	
Example	show syslog message-group	

SmartE Series

Command	Value range	Default
show syslog status		
Description	Shows the activation status of the syslog function on the switch.	
Example	show syslog status	

Command	Value range	Default
show syslog server		
Description	Shows the syslog server parameters	
Example	show syslog server	

Command	Value range	Default
syslog status {enable disable}		
Description	Activate or deactivate the syslog function. The deactivated syslog prevents any communication to a syslog server.	
Example	syslog status enable	

Command	Value range	Default
syslog server <value> ip-address <ip address>		
Description	Configure the IP address of the syslog server.	
Example	syslog server 1 ip-address 192.168.1.200	

Command	Value range	Default
syslog server <value> udp-port <port>		
Description	Configure the UDP port of the syslog server.	
Example	syslog server 1 udp-port 10	

Command	Value range	Default
syslog send-test-message		
Description	Send a test message to test the configuration.	
Example	syslog send-test-message	

Command	Value range	Default
syslog message-group <value> {enable disable}	1 Connectivity 2 Diagnosis 3 Automation protocol 4 System information 5 Redundancy 6 Security	
Description	Enable / disable a message group	
Example	syslog message-group 1 disable	

Event Table Commands

Command	Value range	Default
show event-table		
Description	Display the event table with the following columns: Index Event Device runtime	
Example	show event-table	

Command	Value range	Default
clear event-table		
Description	Delete/clear the event table	
Example	clear event-table	

MAC Address Table Commands

Command	Value range	Default
show mac-address-table		
Description	Display the MAC address table	
Example	show mac-address-table	

Command	Value range	Default
clear mac-address-table		
Description	Clear the MAC address table.	
Example	clear mac-address-table	

FW Image Handling Commands

Command	Value range	Default
file-transfer tftp write-to-device firmware <ip-address> <filename>	<ip-address> IP address (xxx.xxx.xxx.xxx)	
Description	Transfer of a firmware image file to the device. The firmware update is performed immediately, the device then restarts and the CLI connection is terminated.	
Example	file-transfer tftp write-to-device firmware 192.168.0.1 SMARTE_v1_00.bin	

Script Handling Commands

Command	Value range	Default
show script		
Description		
Example	show script	

Network Commands

Command	Value range	Default
show network		
Description	Display the current network parameters: IP address assignment (static, BootP, DHCP) IP address Network mask Default gateway Management VLAN Address Conflict Detection (ACD) mode	
Example	show network	

Command	Value range	Default
network parms <ip-address> <netmask> [gateway]	<ip-address> (xxx.xxx.xxx.xxx) <netmask> (xxx.xxx.xxx.xxx) [gateway] (xxx.xxx.xxx.xxx)	0.0.0.0 0.0.0.0 0.0.0.0
Description	Change the network parameters: IP address Network mask Default gateway	
Example	network parms 192.168.0.150 255.255.255.0	

Command	Value range	Default
network protocol {bootp dhcp none}		bootp
Description	Change the IP address assignment	
Example	network protocol dhcp	

Command	Value range	Default
network mgmt-vlan <vlan-id>	VLAN ID (1 - 4000)	1
Description	Change the management VLAN	
Example	network mgmt-vlan 2	

SmartE Series

Command	Value range	Default
network acd-mode {acd none}		None
Description	Change the ACD (Address Conflict Detection) mode	
Example	network acd-mode acd	

Command	Value range	Default
network dns-server <1 2> <IP address>	<1 2> Primary or secondary DNS server (xxx.xxx.xxx.xxx)	
Description	Configure the DNS server	
Example	network dns-server 1 192.168.1.250	

Command	Value range	Default
network hostname resolution {enable disable}		enable
Description	Activate / deactivate host name resolution.	
Example	network hostname resolution disable	

Command	Value range	Default
network hostname name <hostname>		
Description	Configure the host name of the device.	
Example	network hostname name Glamdring	

Command	Value range	Default
lldp initial-ip-port		
Description	Configure topology based initial IP port.	
Example	lldp initial-ip-port	

Services Commands

Command	Value range	Default
show service {sntp general}		
Description	Status indicator for all of the following services: Sntp Network time protocol Primary SNTP server Primary server description Primary server name Secondary SNTP server Secondary server description Secondary server name UTC offset Synchronization Status Last SNTP synchronization General Web server SNMP server CLI service CLI network scripting UI (CLI command entry via URL)	
Example	show service sntp	

Command	Value range	Default
service cli-service {telnet ssh disable}		Telnet
Description	Change the CLI service protocol.	
Example	service cli-service telnet	

Command	Value range	Default
service cli-network-script-ui {enable disable}		enable
Description	Activation/deactivation of the CLI network scripting UI (CLI command entry via URL)	
Example	service cli-network-script-ui disable	

Command	Value range	Default
service web-server {disable http https}		http
Description	Change the web server protocol	
Example	service web-server https	

Command	Value range	Default
service snmp-agent {disable snmp-v2 snmp-v3}		snmp-v2
Description	Change the SNMP server	
Example	service snmp-agent snmp-v2	

SmartE Series

Command	Value range	Default
service login-expire <time>	60 – 3600 seconds	1200
Description	Configure login expire time.	
Example	service login-expire 3600	

Command	Value range	Default
service snmpv2-read-comm {tx}	Max. 255 characters	
Description	Configure SNMPv2 read community.	
Example	service snmpv2-read-comm 100	

Command	Value range	Default
service confidential-web-view {enable disable}		
Description	Enable Disable a required user login for the web site access.	
Example	service confidential-web-view enable	

Command	Value range	Default
service smart-mode {enable disable}		
Description	Enable Disable smart mode (mode button).	
Example	service smart-mode disable	

Command	Value range	Default
service persistent-evt-log {enable disable}		enable
Description	Enable Disable persistent storage of event-table.	
Example	service persistent-evt-log enable	

Command	Value range	Default
service sntp status {enable disable}		disable
Description	Activate / deactivate the global SNTP status.	
Example	service sntp status enable	

Command	Value range	Default
service sntp mode {unicast broadcast}		
Description	Set the SNTP mode.	
Example	service sntp mode broadcast	

Command	Value range	Default
service sntp primary-server <ip-address>	(xxx.xxx.xxx.xxx)	
Description	Set the IP address of the SNTP server.	
Example	service sntp primary-server 192.168.20.50	

SmartE Series

Command	Value range	Default
service snmp primary-server description <description>	Max. 256 characters	
Description	Set the description of the SNMP server.	
Example	service snmp primary-server description alphaserver	

Command	Value range	Default
service snmp backup-server <ip-address>	(xxx.xxx.xxx.xxx)	
Description	Set the IP address of the backup SNMP server.	
Example	service snmp backup-server 192.168.15.100	

Command	Value range	Default
service snmp backup-server description <description>		
Description	Set the description of the backup SNMP server.	
Example	service snmp backp-server description betaserver	

Command	Value range	Default
service system-time <"YYYY/MM/DD hh:mm:ss">		
Description	Set the local system time.	
Example	service system-time "2021/01/26 14:51:01"	

LLDP Services Commands

Command	Value range	Default
show lldp topology all		
Description	Tabular display of the LLDP topology with the following columns: Local port Chassis ID of the connected device IP address of the connected device Remote port of the connected device Description of the remote port on the connected device	
Example	show lldp topology all	

Command	Value range	Default
show lldp global		
Description	Display the configuration parameters: LLDP status LLDP transmission interval LLDP transmit port LLDP receive port	
Example	show lldp global	

SmartE Series

Command	Value range	Default
show lldp topology port-no <port-no>		
Description	Display the topology information at a port: Complete chassis ID Complete port name System name System description	
Example	show lldp topology port-no 3	

Command	Value range	Default
lldp status {enable disable}		enable
Description	Change the LLDP status	
Example	lldp status enable	

Command	Value range	Default
lldp tx-interval <value>	Interval in seconds (5 - 32768)	5
Description	Change the LLDP transmission interval	
Example	lldp tx-interval 10	

Command	Value range	Default
lldp port-tx enable <port-list>	Comma-separated list of port numbers	All enable
Description	Activation of the LLDP transmit ports	
Example	lldp port-tx enable 3,4,8	

Command	Value range	Default
lldp port-tx disable <port-list>	Comma-separated list of port numbers	No disable
Description	Deactivation of the LLDP transmit ports	
Example	lldp port-tx disable 3,4,8	

Command	Value range	Default
lldp port-rx enable <port-list>	Comma-separated list of port numbers	All enable
Description	Activation of the LLDP receive ports	
Example	lldp port-rx enable 3,4,8	

Command	Value range	Default
lldp port-rx disable <port-list>	Comma-separated list of port numbers	No disable
Description	Deactivation of the LLDP receive ports	
Example	lldp port-rx disable 3,4,8	

Port Features Commands

Command	Value range	Default
show port-info all		
Description	Display the basic parameters of all ports: Port number Port name Port type Port status Port mode	
Example	show port-info all	

Command	Value range	Default
show port-info port-no <port-no>		
Description	Display the basic parameters of one port: Port number Port name Port type Port status Port mode Status flow control Status link monitoring	
Example	show port-info port-no 3	

Command	Value range	Default
show port-stat port-no <port-no>		
Description	Display the port statistics of one port	
Example	show port-stat port-no 5	

Command	Value range	Default
show port-util port-no <port-no>		
Description	Display the RX and TX utilization of one port	
Example	show port-util port-no 1	

Command	Value range	Default
show port-util all		
Description	Display the RX and TX utilization of all ports	
Example	show port-util all	

Command	Value range	Default
port <port-no> admin-mode {enable disable}		all enable
Description	Activation/deactivation of a port	
Example	port 3 admin-mode disable	

SmartE Series

Command	Value range	Default
port <port-no> modus autoneg		
Description	Activation/deactivation of auto-negotiation on one port	
Example	port 3 modus autoneg	

Command	Value range	Default
port <port-no> modus auto10_100		
Description	Activation/deactivation of auto-negotiation on one port (only 10/100 Mbps, not 1000 Mbps)	
Example	port 3 modus auto10_100	

Command	Value range	Default
port <port-no> modus speed <speed> {half-duplex full-duplex}	<speed> Transmission speed in Mbps {10 100 1000}	
Description	Change the transmission speed and duplex mode on one port	
Example	port 3 modus speed 100 half-duplex	

Command	Value range	Default
port <port-no> modus faststartup		
Description	Activation/deactivation of Fast Startup mode on one port.	
Example	port 3 modus faststartup	

Command	Value range	Default
port <port-no> description <text>	(0 - 31 chars)	
Description	Change the port name	
Example	port 3 description RingPortGrue	

Command	Value range	Default
port <port-no> link-monitoring {enable disable}		all disable
Description	Activation/deactivation of link monitoring on one port	
Example	port 3 link-monitoring disable	

Command	Value range	Default
port <port-no> flow-control {enable disable}		All disable
Description	Activation/deactivation of flow control on one port	
Example	port 3 flow-control disable	

Command	Value range	Default
port <port-no> jumbo-frames {enable disable}		disable
Description	Enable or disable Jumbo frames.	
Example	port 5 jumbo-frames enable	

SmartE Series

Command	Value range	Default
port <port-no> mtu <value>	Number of bytes 1522 to 9600	1536
Description	Set the maximum jumbo frame size in bytes.	
Example	port 4 mtu 1522	

Command	Value range	Default
port <port-no> crc-threshold <value>		40000
Description	Set the threshold for CRC errors on the selected port.	
Example	port 2 crc-threshold 30000	

Command	Value range	Default
clear port-stat port-no <port-no>		
Description	Resets the port statistics counters for the selected port back to 0.	
Example	clear port-stat port-no 3	

Command	Value range	Default
clear port-stat all		
Description	Resets the port statistics counters for all ports to 0	
Example	clear port-stat all	

Port Mirroring Commands

Command	Value range	Default
show port-mirror		
Description	Display the port mirroring parameters: Global status Receive port (mirroring port) Mirrored ports (incoming traffic) Mirrored ports (outgoing traffic)	
Example	show port-mirror	

Command	Value range	Default
port-mirror status {enable disable}		disable
Description	Activation/deactivation of the global port mirroring status	
Example	port-mirror status enable	

Command	Value range	Default
port-mirror dest <port-no>		1
Description	Change the receive port (mirroring port)	
Example	port-mirror dest 8	

SmartE Series

Command	Value range	Default
port-mirror ingress enable <port-list>	Comma-separated list of port numbers	all disable
Description	Activation of RX port mirroring (incoming traffic) on multiple ports	
Example	port-mirror ingress enable 3,4,8	

Command	Value range	Default
port-mirror ingress disable <port-list>	Comma-separated list of port numbers	all disable
Description	Deactivation of RX port mirroring (incoming traffic) on multiple ports	
Example	port-mirror ingress disable 3,4,8	

Command	Value range	Default
port-mirror egress enable <port-list>	Comma-separated list of port numbers	all disable
Description	Activation of TX port mirroring (outgoing traffic) on multiple ports	
Example	port-mirror egress enable 3,4,8	

Command	Value range	Default
port-mirror egress disable <port-list>	Comma-separated list of port numbers	all disable
Description	Deactivation of TX port mirroring (outgoing traffic) on multiple ports	
Example	port-mirror egress disable 3,4,8	

VLAN Commands

Command	Value range	Default
show vlan global		
Description	Display the current VLAN mode	
Example	show vlan global	

Command	Value range	Default
show vlan static-table		
Description	Display the static VLAN table: VLAN ID VLAN name Device ports (untagged) Device ports (tagged)	
Example	show vlan static-table	

SmartE Series

Command	Value range	Default
show vlan current-table		
Description	Display the current VLAN table: VLAN ID VLAN name Device ports (untagged) Device ports (tagged)	
Example	show vlan current-table	

Command	Value range	Default
show vlan port-table		
Description	Display the port-based static VLAN table for all ports: VLAN ID VLAN name Device ports (untagged) Device ports (tagged)	
Example	show vlan port-table	

Command	Value range	Default
show vlan port <port-no>		
Description	Display the port-based static VLAN table for one port: VLAN ID VLAN name Device ports (untagged) Device ports (tagged)	
Example	show vlan port 3	

Command	Value range	Default
show vlan vlan-id <vlan-id>	(1 - 4000)	
Description	Display the VLAN information for a VLAN: VLAN ID VLAN name Device ports (untagged) Device ports (tagged)	
Example	show vlan vlan-id 3	

Command	Value range	Default
vlan status {transparent tagged}		transparent
Description	Change the VLAN mode	
Example	Vlan status tagged	

Command	Value range	Default
vlan create <vlan-id>	(1 - 4000)	
Description	Create a new static VLAN	
Example	Vlan create 5	

SmartE Series

Command	Value range	Default
vlan delete <vlan-id>	(1 - 4000)	
Description	Delete a static VLAN	
Example	vlan delete 5	

Command	Value range	Default
vlan static <vlan-id> name <vlan-name>	(1 - 4000), (0 - 31 chars)	
Description	Change the name of a static VLAN	
Example	vlan static 5 name VLAN_5	

Command	Value range	Default
vlan static <vlan-id> tagged-mem-ports <port-list>	(1 - 4000) Comma-separated list of port numbers	
Description	Assignment of device ports (tagged) to a VLAN	
Example	vlan static 5 tagged-mem-ports 2,5	

Command	Value range	Default
vlan static <vlan-id> untagged-mem-ports <port-list>	(1 - 4000) Comma-separated list of port numbers	
Description	Assignment of device ports (untagged) to a VLAN	
Example	vlan static 5 untagged-mem-ports 2,5	

Command	Value range	Default
vlan static <vlan-id> no-member <port-list>	(1 - 4000) Comma-separated list of port numbers	
Description	Removal of device ports from a VLAN	
Example	vlan static 5 no-member 3,5	

Command	Value range	Default
vlan port <port-no> vlan <vlan-id>	(1 - 4000)	
Description	Assignment of a default VLAN ID to a port	
Example	vlan port 3 vlan 5	

Command	Value range	Default
vlan port <port-no> priority <value>	(0 - 7)	0
Description	Assignment of a default priority to a port	
Example	vlan port 3 priority 7	

SmartE Series

Command	Value range	Default
vlan port <port-no> ingress-filter {enable disable}		all disable
Description	Activation/deactivation of the ingress filter at a port	
Example	vlan port 3 ingress-filter disable	

Command	Value range	Default
vlan routing add <vlan-id> <interface-no>		
Description	Creates a routing VLAN from a VLAN and assigns this to a Layer 3 interface.	
Example	vlan routing add 200 2	

Command	Value range	Default
vlan routing delete <vlan-id>		
Description	Removes the routing VLAN and makes it a Layer 2 VLAN.	
Example	vlan routing delete 200	

Multicast Commands

Command	Value range	Default
show multicast igmp		
Description	Display the IGMP snooping information: Status IGMP Snooping Snoop Aging Time IGMP Query Version Query interval Status of IGMP extension FUQ Status of IGMP extension BUQ Status of IGMP extension auto query port List of static query ports	
Example	show multicast igmp	

Command	Value range	Default
show multicast static-groups		
Description	Tabular display of the static multicast groups with the following columns: Multicast address VLAN ID Member ports including status	
Example	show multicast static-groups	

SmartE Series

Command	Value range	Default
show multicast current-groups		
Description	Tabular display of the current multicast groups with the following columns: VLAN ID Multicast address Port member	
Example	show multicast current-groups	

Command	Value range	Default
multicast igmp snoop status {enable disable}		disable
Description	Activation/deactivation of IGMP snooping	
Example	multicast igmp snoop status enable	

Command	Value range	Default
multicast igmp snoop aging <value>	Aging time in seconds (30 - 3600)	300
Description	Change the aging time	
Example	multicast igmp snoop aging 100	

Command	Value range	Default
multicast igmp querier version {disable v1 v2}		disable
Description	Change the querier version	
Example	multicast igmp querier version v2	

Command	Value range	Default
multicast igmp querier interval <value>	Querier interval in seconds (10 - 3600)	125
Description	Change the querier interval	
Example	multicast igmp querier interval 500	

Command	Value range	Default
multicast igmp extension fuq {enable disable}		enable
Description	Activation/deactivation of the IGMP extension FUQ	
Example	multicast igmp extension fuq enable	

Command	Value range	Default
multicast igmp extension buq {enable disable}		enable
Description	Activation/deactivation of the IGMP extension BUQ	
Example	multicast igmp extension buq enable	

SmartE Series

Command	Value range	Default
multicast igmp extension auto-query {enable disable}		enable
Description	Activation/deactivation of the IGMP extension auto query port	
Example		

Command	Value range	Default
multicast igmp extension clear-auto-query		
Description	Delete all auto query ports	
Example	multicast igmp extension clear-auto-query	

Command	Value range	Default
multicast igmp extension static-query-port add <port-list>	Comma-separated list of port numbers	
Description	Add static query ports	
Example	multicast igmp extension static-query-port add 2,4	

Command	Value range	Default
multicast igmp extension static-query-port remove <port-list>	Comma-separated list of port numbers	
Description	Delete static query ports	
Example	multicast igmp extension static-query-port remove	

Command	Value range	Default
multicast static create <mac-address> <vlan-id>		
Description	Generate a new static multicast group	
Example	multicast static create 01:00:5e:00:18:0e 1	

Command	Value range	Default
multicast static delete <mac-address> <vlan-id>		
Description	Delete an existing static multicast group	
Example	multicast static delete 01:00:5e:00:18:0e 1	

Command	Value range	Default
multicast static configure <mac-address> <vlanid> static-mem-ports <port-list>	<port-list> Comma-separated list of port numbers	
Description	Add ports to a static multicast group	
Example	multicast static configure 01:00:5e:00:18:0e 1 static-mem-ports 3,5,8	

SmartE Series

Command	Value range	Default
multicast static configure <mac-address> <vlanid> forbidden-mem-ports <port-list>	<port-list> Comma-separated list of port numbers	
Description	Forbid membership of ports in a static multicast group	
Example	multicast static configure 01:00:5e:00:18:0e 1 forbidden-mem-ports 3,5,8	

Command	Value range	Default
multicast static configure <mac-address> <vlanid> no-member <port-list>	<port-list> Comma-separated list of port numbers	
Description	Delete ports from a static multicast group	
Example	multicast static configure 01:00:5e:00:18:0e 1 no-member 3,5,8	

RSTP Commands

Command	Value range	Default
show spanning-tree global		
Description	Display the RSTP information: Status RSTP Mode Status Large Tree Support Status Fast Ring Detection Bridge Priority Bridge Hello Time Bridge Forward Delay Bridge Max Age MAC address of the root Root Port Root Cost Number of topology changes Last topology change Hello Time Forward Delay Max Age	
Example	show spanning-tree global	

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Command	Value range	Default
show spanning-tree port port-no <port-no>		
Description	Display the RSTP information for a specific port: Status RSTP Mode Admin Path Cost Operating Path Cost Status Auto Edge Status Admin Edge Status Operating Edge Priority Number of forward transitions MAC address of the root MAC address of the bridge Port ID Cost	
Example	show spanning-tree port port-no 10	

Command	Value range	Default
show spanning-tree port all		
Description	Tabular display of the RSTP information for a specific port with the following columns: Port number Status RSTP Mode Path Cost Operating Edge Blocking State Protocol Role	
Example	show spanning-tree port all	

Command	Value range	Default
spanning-tree status {disable 802.1w}		802.1w
Description	Activation/deactivation of RSTP	
Example	spanning-tree status 802.1w	

Command	Value range	Default
spanning-tree lts {enable disable}		disable
Description	Activation/deactivation of Large Tree Support	
Example	spanning-tree lts enable	

Command	Value range	Default
spanning-tree frd {enable disable}		disable
Description	Activation/deactivation of Fast Ring Detection	
Example	spanning-tree frd enable	

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Command	Value range	Default
spanning-tree bdg-prio <value>	(0 - 61440 in increments of 4096)	32768
Description	Change the Bridge Priority	
Example	spanning-tree bdg-prio 4096	

Command	Value range	Default
spanning-tree hello-time <value>	Hello time in seconds (1 - 10)	2
Description	Change the Bridge Hello Time	
Example	spanning-tree hello-time 3	

Command	Value range	Default
spanning-tree fwd-delay <value>	Bridge Forward Delay in seconds (4 - 30)	15
Description	Change the Bridge Forward Delay	
Example	spanning-tree fwd-delay 20	

Command	Value range	Default
spanning-tree max-age <value>	Bridge Max Age in seconds (6 - 40)	20
Description	Change the Bridge Max Age	
Example	spanning-tree max-age 25	

Command	Value range	Default
spanning-tree port <port-no> status {enable disable}		all enable
Description	Activation/deactivation of RSTP for a specific port	
Example	spanning-tree port 3 status disable	

Command	Value range	Default
spanning-tree port <port-no> path-ost <value>	Path cost (0 = automatic detection based on the current port speed; 1 - 200000000 = manual setting)	0
Description	Change the path cost for a specific port	
Example	spanning-tree port 3 path-cost 20000	

Command	Value range	Default
spanning-tree port <port-no> auto-edge {enable disable}		all enable
Description	Activation/deactivation of Auto Edge for a specific port	
Example	spanning-tree port 3 auto-edge enable	

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Command	Value range	Default
spanning-tree port <port-no> admin-edge {edge non-edge}		all non-edge
Description	Activation/deactivation of Admin Edge for a specific port	
Example	spanning-tree port 3 admin-edge non-edge	

Command	Value range	Default
spanning-tree port <port-no> priority <value>	Priority (0 - 240 in increments of 16)	128
Description	Change the priority for a specific port	
Example	spanning-tree port 3 priority 192	

Command	Value range	Default
spanning-tree port <port-no> force-rstp		
Description	Force change from STP to RSTP for a specific port	
Example	spanning-tree port 3 force-rstp	

Port Channel Commands

Command	Value range	Default
show port-channel trunk-id <name>		
Description	Displays the trunk ID, trunk name, admin mode, spanning tree mode, algorithm and associated ports for the selected trunk.	
Example	show port-channel trunk-id Redtrunk1	

Command	Value range	Default
show port-channel all		
Description	Shows all trunks in a table with trunk ID, trunk name, admin mode and status.	
Example	show port-channel all	

Command	Value range	Default
port-channel create <name>		
Description	Create a trunk with the configured name.	
Example	port-channel create Portch1	

Command	Value range	Default
port-channel delete <name>		
Description	Delete a trunk with the configured name.	
Example	port-channel delete Portch1	

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Command	Value range	Default
port-channel config <name> admin-mode {enable disable}		
Description	Configuration of the port channel admin mode.	
Example	port-channel config PortCh1 admin-mode enable	

Command	Value range	Default
port-channel config <name> spann-tree {enable disable}		
Description	Configuration of the Port Channel Spanning Tree mode.	
Example	port-channel config PortCh1 spann-tree enable	

Command	Value range	Default
port-channel config <name> chg-name <name>		
Description	Change a port channel name	
Example	port-channel config PortCh1 chg-name PortCh2	

Command	Value range	Default
port-channel config <name> member-port add <port-list>		
Description	Add member ports to the port channel. Ports are listed in a comma separated list.	
Example	port-channel config PortCh2 member-port add 1,2,8	

Command	Value range	Default
port-channel config <name> member-port del <port-list>		
Description	Delete member ports from the port channel. Ports are listed in a comma separated list.	
Example	port-channel config PortCh2 member-port del 1,2	

Command	Value range	Default
port-channel config <name> trunk-mode mode {LIST-OF-MODES}	Static, lacp-active and lacp-passive	lacp-active
Description	Configuration of the port selection for the selected port channel. Static, lacp-active and lacp-passive are supported.	
Example	port-channel config PortCh2 trunk-mode mode static	

Command	Value range	Default
port-channel global-algorithm algorithm {LIST-OF-ALGORITHMS}	Src MAC, Dst MAC, Src and Dst MAC, Src/Dst IP and TCP/UDP port, Src/Dst MAC, IP and TCP/UDP port	Src/Dst MAC, IP and TCP/UDP port
Description	Configuration of the load balancing algorithm for all port channels of the device.	
Example	port-channel global-algorithm algorithm Src and Dst MAC	

MRP Commands

Command	Value range	Default
show mrp		
Description	Display the MRP information: Domain name MRP UUID MRP device status Status of MRP manager function MRP VLAN ID Ring port 1 Ring port 2 MRP manager priority level Ring status Counter for status change in the ring Last status change in the ring	
Example	show mrp	

Command	Value range	Default
mrp mode {none client manager}		none
Description	Change the MRP device status	
Example	mrp mode client	

Command	Value range	Default
mrp ports <mrp-port1> <mrp-port2>		1, 2
Description	Change the MRP ports	
Example	mrp ports 3 4	

Command	Value range	Default
mrp vlan <vlan-id>	(1 – 4000)	1
Description	Change the MRP VLAN ID	
Example	mrp vlan 2	

Command	Value range	Default
mrp uuid <UUID-string>	(xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx)	fffffff-ffff-ffff-ffffffffffff
Description	Change the MRP UUID	
Example	mrp uuid ffffffff-ffff-ffff-ffffffffffff	

Command	Value range	Default
mrp domain-name <string>	max. 256 chars	default-mrpdomain
Description	Change the MRP domain name	
Example	mrp domain-name mrpdomain2	

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Command	Value range	Default
mrp manager-priority <value>	MRP manager priority (0 - 61439 in increments of 4096)	32768
Description	Change the MRP manager priority	
Example	mrp manager-priority 4096	

Security Context Commands

Command	Value range	Default
show sec-context		
Description	Display the security context status	
Example	show sec-context	

Command	Value range	Default
sec-context generate		
Description	Generate a security context	
Example	sec-context generate	

Command	Value range	Default
file-transfer {tftp http} {write-to-device read-from-device} sec-context <ip-ad-dress> <filename>	(xxx.xxx.xxx.xxx)	
Description	Transfer of a root CA certificate file to the device or from the device to the PC.	
Example	file-transfer tftp write-to-device sec-context 192.168.0.1 cacert.cer	

DHCP Commands

Command	Value range	Default
show dhcp global		
Description	Display the global DHCP status	
Example	show dhcp global	

Command	Value range	Default
show dhcp server current-lease		
Description	Tabular display of the current DHCP leases (assigned IP addresses): Number Assigned IP address MAC address of the device Local port Status	
Example	show dhcp server current-lease	

Command	Value range	Default
show dhcp server static-lease		
Description	Tabular display of the current static DHCP leases (assigned IP addresses): Number Assigned IP address MAC address of the device	
Example	show dhcp server static-lease	

Command	Value range	Default
show dhcp server port-local <port-no>		
Description	Display the port-based DHCP server information: Port Status of the port-based DHCP server IP address Subnet mask Default gateway DNS server	
Example	show dhcp server port-local 3	

Command	Value range	Default
dhcp-service service {none relay-agent server}		
Description	Set the operating mode of the DHCP server	
Example	dhcp-service service server	

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Command	Value range	Default
dhcp-service relay-agent remote-id {ip mac}		ip
Description	Change the relay agent remote ID	
Example	dhcp-service relay-agent remote-id mac	

Command	Value range	Default
dhcp-service relay-agent server <ip-address>		0.0.0.0
Description	Change the DHCP server in relay agent mode	
Example	dhcp-service relay-agent server 192.168.0.2	

Command	Value range	Default
dhcp-service relay-agent port-mode enable <port-list>	Comma-separated list of port numbers	
Description	Activation of the relay agent on multiple ports	
Example	dhcp-service relay-agent port-mode enable 3,4,8	

Command	Value range	Default
dhcp-service relay-agent port-mode disable <port-list>	Comma-separated list of port numbers	
Description	Deactivation of the relay agent on multiple ports	
Example	dhcp-service relay-agent port-mode disable 3,4,8	

Command	Value range	Default
dhcp-service server pool-start-addr <ip-ddress>		0.0.0.0
Description	Change the start address of the DHCP pool	
Example	dhcp-service server pool-start-addr 192.168.0.3	

Command	Value range	Default
dhcp-service server pool-size <size>	DHCP pool size (depends on subnet)	32
Description	Change the maximum number of IP addresses specified by the DHCP server (size of the address pool)	
Example	dhcp-service server pool-size 20	

Command	Value range	Default
dhcp-service server net-mask <net-mask>		0.0.0.0
Description	Change the subnet mask that is assigned to the DHCP clients	
Example	dhcp-service server net-mask 255.255.255.0	

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Command	Value range	Default
dhcp-service server router-ip <ip-address>		0.0.0.0
Description	Change the default gateway that is assigned to the DHCP clients	
Example	dhcp-service server router-ip 192.168.0.1	

Command	Value range	Default
dhcp-service server dns-ip <ip-address>		0.0.0.0
Description	Change the DNS server that is assigned to the DHCP clients	
Example	dhcp-service server dns-ip 192.168.10.10	

Command	Value range	Default
dhcp-service server lease-time <value>	DHCP lease time in seconds (300 - 2592000)	3600
Description	Change the DHCP lease time (validity of the IP address assignment)	
Example	dhcp-service server lease-time 3600	

Command	Value range	Default
dhcp-service server accept-bootp {enable disable}		enable
Description	Activation/deactivation of the acceptance of BootP requests by the DHCP server	
Example	dhcp-service server accept-bootp enable	

Command	Value range	Default
dhcp-service server static-lease create <ip-address> <client-mac-address>		
Description	Create a static IP assignment (DHCP lease) for a defined client address (MAC address)	
Example	dhcp-service server static-lease create 192.168.0.20 XX:XX:XX:6C:D2:05	

Command	Value range	Default
dhcp-service server static-lease delete <ip-address>		
Description	Delete a statically assigned IP address (DHCP lease)	
Example	dhcp-service server static-lease delete 192.168.0.20	

Command	Value range	Default
dhcp-service server static-lease clear		
Description	Delete all static IP assignments (DHCP lease)	
Example	dhcp-service server static-lease clear	

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Command	Value range	Default
dhcp-service server port-local <port-no> status {enable disable}		all disable
Description	Activation/deactivation of a port-based DHCP server	
Example	dhcp-service server port-local 3 status enable	

Command	Value range	Default
dhcp-service server port-local <port-no> local-ip <ip-address>		0.0.0.0
Description	Change an IP address assigned by a port-based DHCP server	
Example	dhcp-service server port-local 3 local-ip 192.168.0.30	

Command	Value range	Default
dhcp-service server port-local <port-no> net-mask <net-mask>		0.0.0.0
Description	Change a subnet mask assigned by a port-based DHCP server	
Example	dhcp-service server port-local 3 net-mask 255.255.255.0	

Command	Value range	Default
dhcp-service server port-local <port-no> router-ip <ip-address>		0.0.0.0
Description	Change a default gateway address assigned by a port-based DHCP server	
Example	dhcp-service server port-local 3 router-ip 192.168.0.1	

Command	Value range	Default
dhcp-service server port-local <port-no> dns-ip <ip-address>		0.0.0.0
Description	Change a DNS server address assigned by a port-based DHCP server	
Example	dhcp-service server port-local 3 dns-ip 192.168.10.10	

Command	Value range	Default
dhcp-service server port-local-clear		
Description	Delete all port-based DHCP servers	
Example	dhcp-service server port-local-clear	

Alarm Output Commands

Command	Value range	Default
show alarm-output <output-no>	Alarm contact number	
Description	Display the alarm contact information: Alarm contact status Alarm contact output status (error state) Event status power supply interrupted Event status link down	
Example	show alarm-output 1	

Command	Value range	Default
alarm-output <output-no> global {enable disable}		enable
Description	Change alarm contact status	
Example	alarm-output 1 global enable	

Command	Value range	Default
alarm-output <output-no> pow-supply-lost {enable disable}		enable
Description	Change event status power supply interrupted	
Example	alarm-output 1 pow-supply-lost enable	

Command	Value range	Default
alarm-output <output-no> link-down {enable disable}		disable
Description	Change event status link down	
Example	alarm-output 1 link-down enable	

Command	Value range	Default
alarm-output <output-no> mrp {enable disable}		disable
Description	Change event status MRP ring error	
Example	alarm-output 1 mrp enable	

Command	Value range	Default
alarm-output <output-no> plug-mem-miss {enable disable}		disable
Description	Change event status configuration memory missing	
Example	alarm-output 1 plug-mem-miss enable	

QoS Commands

Command	Value range	Default
show broadcast-limiter		
Description	Display the broadcast limiter information: Status of the broadcast limiter Broadcast threshold value Status of the multicast limiter Multicast threshold value Status of the unknown unicast limiter Unknown unicast threshold value	
Example	show broadcast-limiter	

Command	Value range	Default
show quality-of-service profile		
Description	Shows the Quality of Service information.	
Example	show quality-of-service profile	

Command	Value range	Default
quality-of-service profile {universal ethernet-ip}		universal
Description	Set predefined priority mapping and queue usage for certain traffic class.	
Example	quality-of-service profile universal	

Command	Value range	Default
broadcast-limiter broadcast status {enable disable}		disable
Description	Change the broadcast limiter status	
Example	broadcast-limiter broadcast status enable	

Command	Value range	Default
broadcast-limiter broadcast threshold <value>	Threshold value in frames per second (0 - 1048576 in increments of 1024)	1024
Description	Change the broadcast limiter threshold	
Example	broadcast-limiter broadcast threshold 2048	

Command	Value range	Default
broadcast-limiter multicast status {enable disable}		disable
Description	Change the multicast limiter status	
Example	broadcast-limiter multicast status enable	

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Command	Value range	Default
broadcast-limiter multicast threshold <value>	Threshold value in frames per second (0 - 1048576 in increments of 1024)	1024
Description	Change the multicast limiter threshold	
Example	broadcast-limiter multicast threshold 2048	

Command	Value range	Default
broadcast-limiter unicast status {enable disable}		disable
Description	Change the unknown unicast limiter status	
Example	broadcast-limiter unicast status enable	

Command	Value range	Default
broadcast-limiter unicast threshold <value>	Threshold value in frames per second (0 - 1048576 in increments of 1024)	1024
Description	Change the broadcast limiter threshold	
Example	broadcast-limiter unicast threshold 2048	

Trap Manager Commands

Command	Value range	Default
show snmp-trap		
Description	Tabular display of the SNMP trap states with the following columns: Trap Name Status	
Example	show snmp-trap	

Command	Value range	Default
snmp-trap status {enable disable}		disable
Description	Change the global SNMP status	
Example	snmp-trap status enable	

Command	Value range	Default
snmp-trap server add <ip-address>		
Description	Add an SNMP trap server	
Example	snmp-trap server add 192.168.0.50	

Command	Value range	Default
snmp-trap server remove <ip-address>		
Description	Delete an SNMP trap server	
Example	snmp-trap server remove 192.168.0.50	

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Command	Value range	Default
snmp-trap trap <trap> {enable disable}	Traps separated by comma: user-config-chg - User config change event-tbl-overflow - Event Table Overflow crc-peak-increase - CRC proportion peak increased crc-status-critical - CRC status change to critical crc-status-warning - CRC status change to warning crc-status-ok - CRC status change to ok mrp - Set MRP ring change ip-conflict - Set IP conflict persisted dlr-ring-chg - DLR ring change fw-status-chg - firmware status changed port-sec-violation - Port security violation link-up - Link Up link-down - Link Down rstp-top-chg - RSTP Topology Change rstp-new-root - RSTP New Root rstp-link-fail - RSTP Link Failure pow-src-chg - Power source changed fw-config - Firmware configuration auth-fail - Authentication failure user-pwd-chg - User password changed config-diff - Configuration differ warm-start - Warm start cold-start - Cold start	all enable
Description	Change the SNMP trap states	
Example	snmp-trap trap link-up,auth-fail,warm-start enable	

Command	Value range	Default
snmp-trap send-test-trap		
Description	Send a test trap	
Example	snmp-trap send-test-trap	

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April 20, 2021