Access switches,
industrial switches

MES14xx, MES24xx, MES3400-xx, MES37xx

MES Ethernet switches monitoring and configuration via SNMP, firmware version 10.3.6.3

Document Version	Issue Date	Revisions
Version 3.1	31.08.2024	Synchronization with firmware version 10.3.6.3 Sections changed: - 12.3 RADIUS protocol
Version 3.0	07.07.2024	Synchronization with firmware version 10.3.6
Version 2.9	29.02.2024	Synchronization with firmware version 10.3.5
Version 2.8	08.12.2023	Synchronization with firmware version 10.3.4
Version 2.7	03.07.2023	Synchronization with firmware version 10.3.3.1
Version 2.6	25.06.2022	Synchronization with firmware version 10.3.3
Version 2.5	31.03.2022	Synchronization with firmware version 10.3.2 Sections changed: - 4.1 System resources
Version 2.4	15.12.2022	Synchronization with firmware version 10.3.1
Version 2.3	18.11.2022	Synchronization with firmware version 10.2.10
Version 2.2	02.10.2022	Synchronization with firmware version 10.2.9.4
Version 2.1	31.08.2022	Synchronization with firmware version 10.2.9 Sections changed: - 4.1 System resources - 14.2 Optical transceiver diagnostic Sections added: - 12.3 RADIUS protocol
Version 2.0	06.06.2022	Synchronization with firmware version 10.2.8.2 Sections changed: - 12.1 AAA mechanism - 12.2 TACACS+ protocol - 16.3 DHCP control Sections added: - 8.5 Configuring ERPS Protocol - 11.6 IGMP proxy configuration
Version 1.9	30.11.2021	Synchronization with firmware version 10.2.7.2 Sections changed: -3.1 Operation with SFTP, TFTP servers -16.8 DCS
Version 1.8	08.10.2021	Synchronization with firmware version 10.2.7 Sections changed: -4.1 System resources -4.2 Device management -7.4 L2PT configuration -16.2 Port protection functions -16.4 Port-based client authentication (802.1x) -17 Functions of the DHCP Relay Intermediary -18.1 QoS configuration Sections added: -4.3 Firmware images management

		-6.1 Viewing the contents of MAC table -11.5 IGMP join authorization using the RADIUS server
Version 1.7	12.07.2021	Synchronization with firmware version 10.2.6.3
Version 1.6	31.05.2021	Synchronization with firmware version 10.2.6 Sections changed: -3.1 Operation with SFTP, TFTP servers -4.1 System resources -4.2 Device management -7.1 Features of Ethernet interfaces -16.2 Port protection functions -17 Functions of the DHCP Relay Intermediary -18.1 QoS configuration Sections added: -4.3 Firmware images management -7.5 Managing the errdisable mechanism -8 Configuring protocols for monitoring ring topologies -8.1 Configuring xSTP protocols -8.2 Configuring LLDP Protocol -8.3 Configuring ARP protocol -11.1 Multicast addressing rules -11.2 Internet Group Management Protocol (IGMP Snooping) -11.3 MLD Snooping is a protocol for monitoring multicast traffic in IPv6 -11.4 Multicast traffic restriction functions -12.1 -16.4 Port-based client authentication (802.1x) -16.5 Broadcast storm control -16.6 ARP Inspection -16.8 DCS -16.10 Access Control Lists (ACL) configuration -17 Functions of the DHCP Relay Intermediary
Version 1.5	05.03.2021	Synchronization with firmware version 10.2.5.2
Version 1.4	17.12.2020	Synchronization with firmware version 10.2.5 Sections changed: -4.1 System resources -7.1 Features of Ethernet interfaces -7.4 L2PT configuration -16.1 PPPoE Intermediate-agent Sections added: -6.4 Configuring MAC-based VLAN -6.5 Configuring Protocol-based VLAN
Version 1.3	27.10.2020	Sections changed: - 7.1 Features of Ethernet interfaces - 7.2 VLAN configuration Sections added: - 6 OPERATION WITH MAC TABLES - 16.1 PPPoE Intermediate-agent
Version 1.2	07.09.2020	Sections changed: - 4.1 System resources - 7.1 Features of Ethernet interfaces - 7.2 VLAN configuration Sections added: - 7.4 L2PT configuration - 12 Management functions

		- 18 Quality of Service (QoS)
Version 1.1	08.07.2020	First issue.
Firmware Version	MES14xx/MES24xx/MES3400-xx/MES37xx — **10.3.6.3**	

CONTENTS

Document Conventions

Typographic element	Description
[ ]	Square brackets are used to indicate optional parameters in the command line; when entered, they provide additional options.
{}	In the command line, mandatory parameters are shown in curly braces.
«,» **«-»**	In the command description, these characters are used to specify ranges.
«|»	In the command description, this character means 'or'.
«/»	This sign separates possible and default values when specifying variable values.
Calibri Italic	Calibri Italic is used to indicate variables and parameters that should be replaced with an appropriate word or string.
Bold italic	Notes and warnings are shown in bold italic.
<Bold Italic>	Keyboard keys are shown in bold italic within angle brackets.
`Courier New`	Command examples are shown in Courier New Bold.

Notes and Warnings

Notes contain important information, tips, or recommendations on device operation and configuration.

Warnings inform the user about situations that may be harmful to the user, cause damage to the device, malfunction or data loss.

1 SNMP SERVER AND SNMP-TRAP SENDING CONFIGURATION

SNMPv2 server configuration

```
snmp user ReadUser
snmp user WriteUser
snmp group ReadGroup user ReadUser security-model v2c
snmp group WriteGroup user WriteUser security-model v2c
snmp access ReadGroup v2c read iso
snmp access WriteGroup v2c read iso write iso
snmp community index 1 name private security WriteUser
snmp community index 2 name public security ReadUser
snmp view iso 1 included
```

Trap SNMPv2 configuration

```
snmp user TrapUser
snmp group TrapGroup user TrapUser security-model v2c
snmp access TrapGroup v2c notify iso
snmp community index 1 name Traps security  TrapUser
snmp view iso 1 included
snmp targetparams TrapParams user TrapUser security-model v2c message-processing v2c
snmp notify TrapNotify tag TrapTag type trap
snmp targetaddr FirstHost param TrapParams 192.168.1.1 taglist TrapTag
```

SNMPv3 server configuration

```
snmp user  UserNoAuthNoPriv
snmp user UserAuthNoPriv auth md5 PasswordAuthMD5
snmp user UserAuthPriv auth sha PasswordAuthSHA priv DES PasswordPrivDES
snmp group GroupNoAuthNoPriv user UserNoAuthNoPriv security-model v3
snmp group GroupAuthNoPriv user UserAuthNoPriv security-model v3
snmp group GroupAuthPriv user UserAuthPriv security-model v3
snmp access GroupNoAuthNoPriv v3 noauth read iso write iso notify iso
snmp access GroupAuthNoPriv v3 auth read iso write iso notify iso
snmp access GroupAuthPriv v3 priv read iso write iso notify iso
snmp view iso 1 included
```

Trap SNMPv3 configuration

```
snmp user TrapUserNoAuthNoPriv
snmp user TrapUserAuthNoPriv auth md5 PasswordAuthMD5
snmp user TrapUserAuthPriv auth sha PasswordAuthSHA priv DES PasswordPrivDES
snmp group GroupNoAuthNoPriv user TrapUserNoAuthNoPriv security-model v3
snmp group GroupAuthNoPriv user TrapUserAuthNoPriv security-model v3
snmp group GroupAuthPriv user TrapUserAuthPriv security-model v3
snmp access GroupNoAuthNoPriv v3 noauth notify iso
snmp access GroupAuthNoPriv v3 auth notify iso
snmp access GroupAuthPriv v3 priv notify iso
snmp view iso 1 included
snmp targetparams ParamsTrapUserNoAuthNoPriv user TrapUserNoAuthNoPriv security-model v3 noauth
message-processing v3
```

snmp targetparams ParamsTrapUserAuthNoPriv user TrapUserAuthNoPriv security-model v3 auth message-processing v3
snmp targetparams ParamsTrapUserAuthPriv user TrapUserAuthPriv security-model v3 priv message-processing v3
snmp notify NotifyNoAuthNoPriv tag TagNoAuthNoPriv type trap
snmp notify NotifyAuthNoPriv tag TagAuthNoPriv type trap
snmp notify NotifyAuthPriv tag TagAuthPriv type trap
snmp targetaddr HostNoAuthNoPriv param ParamsTrapUserNoAuthNoPriv 10.0.0.1 taglist TagNoAuthNoPriv
snmp targetaddr HostAuthNoPriv param ParamsTrapUserAuthNoPriv 10.0.0.2 taglist TagAuthNoPriv
snmp targetaddr HostAuthPriv param ParamsTrapUserAuthPriv 10.0.0.3 taglist TagAuthPriv

2 SHORT DESCRIPTIONS

- **ifIndex —** port index;

May take the following values:

1. Access switches

Switch model	Indexes
MES1428 MES2428	- indexes 1-28 — GigabitEthernet 0/1-28; - indexes 64-72 — Port-Channel 1-8.
MES2408	- indexes 1-8 — GigabitEthernet 0/1-8; - indexes 64-72 — Port-Channel 1-8.
MES2424	- indexes 1-24 — GigabitEthernet 0/1-24; - indexes 25-28 — TengigabitEthernet 0/1-4; - indexes 65-88 — Port-Channel 1-24.
MES2448B	- indexes 1-48 — GigabitEthernet 0/1-48; - indexes 49-52 — TengigabitEthernet 0/1-4; - indexes 65-88 — Port-Channel 1-24.
MES3708P	- indexes 1-8 — GigabitEthernet 0/1-8; - indexes 9-10 — TengigabitEthernet 0/1-2; - indexes 65-72 — Port-Channel 1-8.

- **index-l3 —** L3 interface index. It is possible to create 8 L3 interfaces on MES14xx/MES24xx/MES3400-xx/MES37xx devices. When creating L3 interface via the CLI, indexes are assigned in order, starting from 74. It is recommended to assign indexes for L3 interfaces within the range of 74-81. Index 73 is always the L3 interface of vlan 1.
- **IP address —** IP address for switch management;
  In the examples given in the document, the following IP address is used for management: **192.168.1.30**;
- **ip address of tftp server —** TFTP server IP address;
  In the examples given in the document, the following TFTP server IP address is used: **192.168.1.1**;
- **community —** community string (password) for access via the SNMP.

In the examples given in the document, the following *community* are used:

private — reading/writing rights (rw);
public — reading only rights (ro).

3 FILE OPERATIONS

3.1 *Operation with SFTP, TFTP servers*

Copying the configuration from the non-volatile memory to TFTP, SFTP server

MIB: fsiss.mib

Tables used: issRunConfig — 1.3.6.1.4.1.2076.81.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.19.1.0 i {tftp(1), sftp(2)} \
1.3.6.1.4.1.2076.81.19.2.0 i {unknown(0), ipv4(1), ipv6(2), ipv4z(3), ipv6z(4),
dns(16)} \
1.3.6.1.4.1.2076.81.19.3.0 d "IP-address" \
1.3.6.1.4.1.2076.81.19.4.0 s "UsernameSFTP" \
1.3.6.1.4.1.2076.81.19.5.0 s "PasswordSFTP" \
1.3.6.1.4.1.2076.81.19.6.0 s "FileName" \
1.3.6.1.4.1.2076.81.19.10.0 i {true(1), false(2)}
```

Example of copying from startup-config to TFTP server

```
CLI command:
copy startup-config tftp://192.168.1.1/MES-config.conf

SNMP command:
snmpset -v2c -c private -Ln 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.1.0 i 1 \
1.3.6.1.4.1.2076.81.19.2.0 i 1 \
1.3.6.1.4.1.2076.81.19.3.0 d 1 192.168.1.1 \
1.3.6.1.4.1.2076.81.19.6.0 s "Mes-config.conf" \
1.3.6.1.4.1.2076.81.19.10.0 i 1
```

Example of copying from startup-config to SFTP server

```
CLI command:
copy      startup-config      sftp://UsernameSFTP:PasswordSFTP@192.168.1.1/MES-
config.conf

SNMP command:
snmpset -v2c -c private -Ln 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.1.0 i 2 \
1.3.6.1.4.1.2076.81.19.2.0 i 1 \
1.3.6.1.4.1.2076.81.19.3.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.19.4.0 s "UsernameSFTP"\
1.3.6.1.4.1.2076.81.19.5.0 s "PasswordSFTP"\
1.3.6.1.4.1.2076.81.19.6.0 s "Mes-config.conf" \
1.3.6.1.4.1.2076.81.19.10.0 i 1
```

Copying the configuration to non-volatile memory from TFTP, SFTP servers

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.61.0 i {tftp(1), sftp(2)} \
1.3.6.1.4.1.2076.81.1.15.0 i {noRestore (1), restore (2)} \
1.3.6.1.4.1.2076.81.1.16.0 d IP-address \
1.3.6.1.4.1.2076.81.1.62.0 s "UsernameSFTP" \
```

```
1.3.6.1.4.1.2076.81.1.63.0 s "PasswordSFTP" \
1.3.6.1.4.1.2076.81.1.17.0 s “FileName” \
1.3.6.1.4.1.2076.81.1.18.0 i {true(1), false(2)}
```

Example of copying from a TFTP server to startup-config

```
CLI command:
copy tftp://192.168.1.1/MES-config.conf startup-config

SNMP command:
snmpset -v2c -c private -Ln -t 3 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.61.0 i 1 \
1.3.6.1.4.1.2076.81.1.15.0 i 2 \
1.3.6.1.4.1.2076.81.1.16.0 a 192.168.1.1 \
1.3.6.1.4.1.2076.81.1.17.0 s “Mes-config.conf” \
1.3.6.1.4.1.2076.81.1.18.0 i 1
```

Example of copying from an SFTP server to startup-config

```
CLI command:
copy    sftp://UsernameSFTP:PasswordSFTP@192.168.1.1/MES-config.conf    startup-
config

SNMP command:
snmpset -v2c -c private -Ln  192.168.1.30 \
1.3.6.1.4.1.2076.81.1.61.0 i 2 \
1.3.6.1.4.1.2076.81.1.15.0 i 2 \
1.3.6.1.4.1.2076.81.1.16.0 a 192.168.1.1 \
1.3.6.1.4.1.2076.81.1.62.0 s “UsernameSFTP”\
1.3.6.1.4.1.2076.81.1.63.0 s “PasswordSFTP”\
1.3.6.1.4.1.2076.81.1.17.0 s “Mes-config.conf” \
1.3.6.1.4.1.2076.81.1.18.0 i 1
```

Copying the configuration from the volatile memory to TFTP, SFTP server

MIB: fsiss.mib

Tables used: issRunConfig — 1.3.6.1.4.1.2076.81.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.19.1.0 i {tftp(1), sftp(2)} \
1.3.6.1.4.1.2076.81.19.2.0 i {unknown(0), ipv4(1), ipv6(2), ipv4z(3), ipv6z(4),
dns(16)} \
1.3.6.1.4.1.2076.81.19.3.0 d “IP-address” \
1.3.6.1.4.1.2076.81.19.4.0 s “UsernameSFTP” \
1.3.6.1.4.1.2076.81.19.5.0 s "PasswordSFTP" \
1.3.6.1.4.1.2076.81.19.6.0 s “FileName” \
1.3.6.1.4.1.2076.81.19.9.0 i {true(1), false(2)}
```

Example of copying from running-config to TFTP server

```
CLI command:
copy running-config tftp://192.168.1.1/MES-config.conf

SNMP command:
snmpset -v2c -c private -Ln 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.1.0 i 1 \
1.3.6.1.4.1.2076.81.19.2.0 i 1 \
1.3.6.1.4.1.2076.81.19.3.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.19.6.0 s “Mes-config.conf” \
1.3.6.1.4.1.2076.81.19.9.0 i 1
```

Example of copying from running-config to SFTP server

```
CLI command:
copy      running-config      sftp://UsernameSFTP:PasswordSFTP@192.168.1.1/MES-
config.conf

SNMP command:
snmpset -v2c -c private -Ln 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.1.0 i 2 \
1.3.6.1.4.1.2076.81.19.2.0 i 1 \
1.3.6.1.4.1.2076.81.19.3.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.19.4.0 s "UsernameSFTP"\
1.3.6.1.4.1.2076.81.19.5.0 s "PasswordSFTP"\
1.3.6.1.4.1.2076.81.19.6.0 s "Mes-config.conf" \
1.3.6.1.4.1.2076.81.19.9.0 i 1
```

Copying the configuration to volatile memory from TFTP, SFTP servers

MIB: fsiss.mib

Tables used: issRunConfig — 1.3.6.1.4.1.2076.81.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.19.1.0 i {tftp(1), sftp(2)} \
1.3.6.1.4.1.2076.81.19.2.0 i {unknown(0), ipv4(1), ipv6(2), ipv4z(3), ipv6z(4),
dns(16)} \
1.3.6.1.4.1.2076.81.19.3.0 d IP-address \
1.3.6.1.4.1.2076.81.19.4.0 s "UsernameSFTP" \
1.3.6.1.4.1.2076.81.19.5.0 s "PasswordSFTP" \
1.3.6.1.4.1.2076.81.19.6.0 s "FileName" \
1.3.6.1.4.1.2076.81.19.7.0 i {true(1), false(2)}
```

Example of copying from a TFTP server to running-config

```
CLI command:
copy tftp://192.168.1.1/MES-config.conf running-config

SNMP command:
snmpset -v2c -c private -Ln 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.1.0 i 1 \
1.3.6.1.4.1.2076.81.19.2.0 i 1 \
1.3.6.1.4.1.2076.81.19.3.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.19.6.0 s "Mes-config.conf" \
1.3.6.1.4.1.2076.81.19.7.0 i 1
```

Example of copying from a SFTP server to running-config

```
CLI command:
copy sftp://UsernameSFTP:PasswordSFTP@192.168.1.1/MES-config.conf running-
config

SNMP command:
snmpset -v2c -c private -Ln 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.1.0 i 2 \
1.3.6.1.4.1.2076.81.19.2.0 i 1 \
1.3.6.1.4.1.2076.81.19.3.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.19.4.0 s "UsernameSFTP"\
1.3.6.1.4.1.2076.81.19.5.0 s "PasswordSFTP"\
1.3.6.1.4.1.2076.81.19.6.0 s "Mes-config.conf" \
1.3.6.1.4.1.2076.81.19.7.0 i 1
```

Viewing the copying to non-volatile memory status

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.19.0
```

Example of viewing the startup-config copy status

```
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.19.0
```

Viewing the copying to volatile memory status

Possible states:

restoreInprogress (1) — copying is in progress;
restoreSuccessful (2) — copying has been completed successfully;
restoreFailed (3) — an error occurred during the copy;
notInitiated (4) — copying was not initiated.

MIB: fsiss.mib

Tables used: issRunConfig — 1.3.6.1.4.1.2076.81.19

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.19.8
```

Example of viewing the running-config copy status

```
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.19.8
```

Possible states:

restoreInprogress (1) — copying is in progress;
restoreSuccessful (2) — copying has been completed successfully;
restoreFailed (3) — an error occurred during the copy;
notInitiated (4) — copying was not initiated.

Copying a configuration from volatile to non-volatile memory

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.10.0   i   {noSave(1),   flashSave(2),   remoteSave(3),
startupConfig(4)} \
1.3.6.1.4.1.2076.81.1.13.0 i {true(1), false(2)}
```

Example of copying the configuration

```
CLI command:
write startup-config
```

```
SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.10.0 i 4 \
1.3.6.1.4.1.2076.81.1.13.0 i 1
```

Viewing the copying status

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.14.0
```

Example of viewing the copy status

```
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.14.0
```

Possible states:

restoreInprogress (1) — copying is in progress;
restoreSuccessful (2) — copying has been completed successfully;
restoreFailed (3) — an error occurred during the copy;
notInitiated (4) — copying was not initiated.

3.2 *Switch autoconfiguration*

Enabling/Disabling auto-configuration on the switch

MIB: fsiss.mib

Tables used: issZtpConfigStatus — 1.3.6.1.4.1.2076.81.18.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.18.1.0 i {enable(1), disable(2)}
```

Example of enabling auto-configuration

```
CLI command:
ZTP enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.18.1 i 1
```

Viewing the auto-configuration status on the switch

MIB: fsiss.mib

Tables used: issZtp — 1.3.6.1.4.1.2076.81.18

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.18.2.0
```

Example of viewing the autoconfiguration status

```
CLI command:
show ztp status
```

```
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.18.2.0
```

Possible states:

notstarted(1) — autoconfiguration was not started;
complatestate (5) — autoconfiguration is completed;
erroredstate (6) — autoconfiguration error.

3.3 *Firmware update*

Viewing the active firmware version

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.3.0
```

Viewing the active firmware version

```
CLI command:
show bootvar

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.3.0
```

Firmware update

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.55.0 i {tftp(1), sftp(2)} \
1.3.6.1.4.1.2076.81.1.83.0 i {unknown(0), ipv4(1), ipv6(2), ipv4z(3), ipv6z(4),
dns(16)} \
1.3.6.1.4.1.2076.81.1.84.0 d IP-address \
1.3.6.1.4.1.2076.81.1.56.0 s "UsernameSFTP" \
1.3.6.1.4.1.2076.81.1.57.0 s "PasswordSFTP" \
1.3.6.1.4.1.2076.81.1.121.0 i {firmware(1), bootloader(2)} \
1.3.6.1.4.1.2076.81.1.21.0 s "filename" \
1.3.6.1.4.1.2076.81.1.22 i {true(1), false(2)}
```

Example of firmware update via TFTP

```
CLI command:
copy tftp://192.168.1.1/mes2400-10.1.9-R3.iss image

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.55.0 i 1 \
1.3.6.1.4.1.2076.81.1.84.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.1.121.0 i 1 \
1.3.6.1.4.1.2076.81.1.21.0 s "mes2400-10.1.9-R3.iss" \
1.3.6.1.4.1.2076.81.1.22.0 i 1
```

Example of bootloader update via SFTP

```
CLI command:
copy sftp://user:password@192.168.1.1/mes2400-10.1.9-R3.boot boot

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.55.0 i 2 \
1.3.6.1.4.1.2076.81.1.56.0 s "UsernameTFTP" \
1.3.6.1.4.1.2076.81.1.57.0 s "PasswordSFTP" \
1.3.6.1.4.1.2076.81.1.84.0 d 192.168.1.1 \
1.3.6.1.4.1.2076.81.1.121.0 i 2 \
1.3.6.1.4.1.2076.81.1.21.0 s "mes2400-10.1.9-R3.boot" \
1.3.6.1.4.1.2076.81.1.22.0 i 1
```

Viewing firmware update status

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.28.0
```

Example of viewing the copy status

```
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.28.0
```

Possible states:

restoreInprogress (1) — copying is in progress;
restoreSuccessful (2) — copying has been completed successfully;
restoreFailed (3) — an error occurred during the copy;
notInitiated (4) — copying was not initiated.

4 SYSTEM MANAGEMENT

4.1 *System resources*

Viewing device uptime

MIB: SNMPv2-MIB

Tables used: sysUpTime — 1.3.6.1.2.1.1.3

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.1.3.0
```

Example of viewing device uptime

```
CLI command:
show system information

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.1.3.0
```

Viewing device System Description

MIB: SNMPv2-MIB

Tables used: system — 1.3.6.1.2.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.1.1.0
```

Example of viewing device sysDescr

```
CLI command:
show system information

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.1.1.0
```

CPU load monitoring

MIB: ELTEX-MES-ISS-CPU-UTIL-MIB.mib

Tables used: eltMesIssCpuUtilGlobalStat — 1.3.6.1.4.1.35265.1.139.6.1.1.2

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.6.1.1.2.{5 seconds(1), 1 minute(2), 5 minutes(3)}.0
```

Example of viewing the CPU load

```
CLI command:
show env cpu

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.6.1.1.2.1.0
```

Process load monitoring

MIB: ELTEX-MES-ISS-CPU-UTIL-MIB.mib

Tables used: eltMesIssCpuUtilTaskStatTable — 1.3.6.1.4.1.35265.1.139.6.1.2.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.6.1.2.2.1.1.{5 seconds(3), 1 minute(4), 5
minutes(5)}.{task-id}
```

Example of viewing the CPU load

```
CLI command:
show env tascs

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.6.1.2.2.1.1.3.30
```

Binding indexes to processes:

TMR#(1)
LOGF(2)
PKTT(3)
VcmT(4)
SMT(5)
CFA(6)
IPDB(7)
L2DS(8)
BOXF(9)
ERRD(10)
ELMT(11)
EOAT(12)
FMGT(13)
AstT(14)
PIf(15)
LaTT(16)
CMNT(17)
VLAN(18)
FDBP(19)
SnpT(20)
QOS(21)
SMGT(22)
CPUU(23)
RT6(24)
IP6(25)
PNG6(26)
RTM(27)
IPFW(28)
UDP(29)
ARP(30)
PNG(31)
SLT(32)
SAT(33)
TCP(34)
RAD(35)
TACT(36)

DHRL(37)
DHC(38)
DCS(39)
PIA(40)
L2SN(41)
CLIC(42)
CTS(43)
SSH(44)
LLDP(45)
LDB(46)
SNT(47)
STOC(48)
HWPK(49)
MSR(50)
C267(51)

RAM load monitoring

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.73.0
```

Example of RAM load monitoring

```
CLI command:
show env RAM

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.73.0
```

FLASH load monitoring

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.75.0
```

Example of FLASH load monitoring

```
CLI command:
show env flash

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.75.0
```

Viewing the number of MAC addresses in VLAN

MIB: Q-BRIDGE-MIB

Tables used: dot1qFdbEntry — 1.3.6.1.2.1.17.7.2.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.7.1.2.1.1.2.{vlan}
```

Example of viewing the number of MAC addresses in vlan 5

```
CLI command:
show mac-ad

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.17.7.1.2.1.1.2.5
```

Viewing the switch serial number

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.120.0
```

Example of viewing the switch serial number

```
CLI command:
show system information

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.120.0
```

Viewing the hardware version

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.2.0
```

Example of viewing the hardware version

```
CLI command:
show system information

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.2.0
```

Viewing the switch system MAC address

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.32.0
```

Example of viewing the switch system MAC address

```
CLI command:
show nvram

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.32.0
```

Viewing the Uptime port

MIB: SNMPv2-MIB, IF-MIB

Tables used: sysUpTime — 1.3.6.1.2.1.1.3, ifEntry — 1.3.6.1.2.1.2.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.1.3
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.2.2.1.9.{ifindex}
```

Example of viewing GigabitEthernet 0/2 port Uptime

```
CLI command:
show interface status GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.1.3
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.2.2.1.9.2
```

The output of the first command must be removed from the output of the second command. The obtained value will be the port uptime.

Viewing the information about the firmware and bootloader versions

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

Tables used: eltMesIssSysBootVarTable — 1.3.6.1.4.1.35265.1.139.18.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.{index}.{firmware}
```

Example of viewing the bootloader version

```
CLI command:
show bootvar

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.4.2
```

Possible index values:

4 – firmware and bootloader versions;

5 – firmware commit and bootloader versions numbers;

6 – firmware build number;

7 – firmware and bootloader MD5 Digest numbers;

8 – date and time of firmware and bootloader builds.

Possible firmware values:

1 – firmware;

2 – bootloader.

Viewing the battery state

MIB: ELTEX-MES-ISS-ENV-MIB.mib

Tables used: eltMesIssBatteryStatus — 1.3.6.1.4.1.35265.1.139.12.1.3.1.1.2

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.3.1.1.2.0
```

Example of viewing the battery state

```
CLI command:
show env power

SNMP command:
snmpget -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.3.1.1.2.0
```

Possible states:

notoperational(1) — the battery is not supported;

notpresent(2) — the battery is not connected;

recharge(3) — the battery is charging;

low(4) — low battery charge;

discharge(5) — the battery is discharging;

operational(6) — the battery is connected and charged.

Viewing the battery charge level in %

MIB: ELTEX-MES-ISS-ENV-MIB.mib

Tables used: eltMesIssBatteryLevel — 1.3.6.1.4.1.35265.1.139.12.1.3.1.1.3

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.3.1.1.3.0
```

Example of the battery charge level

```
CLI command:
show env power

SNMP command:
snmpget -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.3.1.1.3.0
```

Viewing the acceptable fan speeds table

MIB: ELTEX-MES-ISS-ENV-MIB.mib

Tables used: eltMesIssEnvFanThresholdTable — 1.3.6.1.4.1.35265.1.139.12.1.5.2

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.5.2.1.{min(2), max(3)}.{fanIndex}.{level(1-4)}
```

Example of viewing the table

```
CLI command:
show env fan thresholds

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.5.2.1
```

Viewing the fan speed

MIB: ELTEX-MES-ISS-ENV-MIB.mib

Tables used: eltMesIssEnvFanEntry — 1.3.6.1.4.1.35265.1.139.12.1.5.1.1

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.5.1.1.1.{fanIndex}
```

Example of viewing the first fan speed level

```
CLI command:
show env fan

SNMP command:
snmpget -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.5.1.1.1.1
```

Viewing the fan speed level

MIB: ELTEX-MES-ISS-ENV-MIB.mib

Tables used: eltMesIssEnvFanEntry — 1.3.6.1.4.1.35265.1.139.12.1.5.1.1

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.5.1.1.2.{fanIndex}
```

Example of viewing the first fan speed level

```
CLI command:
show env fan

SNMP command:
snmpget -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.5.1.1.2.1
```

Viewing the fan status

MIB: fsiss.mib

Tables used: eltMesIssEnvFanEntry — 1.3.6.1.4.1.2076.81.13.1.1

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.13.1.1.2.{fanIndex}
```

Example of viewing the first fan status

```
CLI command:
show env fan

SNMP command:
snmpget -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.13.1.1.2.1
```

Monitoring of temperature sensor readings

MIB: fsiss.mib

Tables used: issSwitchCurrentTemperature — 1.3.6.1.4.1.2076.81.1.66.0

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.66.0
```

Example of viewing the temperature sensor readings

```
CLI command:
show env temperature

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.66.0
```

Viewing the minimum threshold of thermal sensor

MIB: fsiss.mib
Tables used: issSwitchMinThresholdTemperature — 1.3.6.1.4.1.2076.81.1.64.0

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.64.0
```

Example of viewing the minimum threshold of thermal sensor

```
CLI command:
show env temperature

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.64.0
```

Viewing the maximum threshold of thermal sensor

MIB: fsiss.mib

Tables used: issSwitchMaxThresholdTemperature — 1.3.6.1.4.1.2076.81.1.65.0

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.65.0
```

Example of viewing the maximum threshold of thermal sensor

```
CLI command:
show env temperature

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.65.0
```

4.2 *Device management*

Set/change the hostname on the device

MIB: SNMPv2-MIB

Tables used: system — 1.3.6.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.1.5.0 s "{hostname}"
```

Example of hostname "mes2428" assignment

```
CLI command:
hostname mes2428

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.1.5.0 s "mes2428"
```

Switch reboot

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.9.0 i 1
```

Example of switch reboot

```
CLI command:
reload


SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.9.0 i 1
```

Switch reboot after a specified time

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

tables used: eltMesIssReloadParams — 1.3.6.1.4.1.35265.1.139.18.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.1.1.0 s "hhh.mm"
1.3.6.1.4.1.35265.1.139.18.1.1.1.2.0 i 1
```

Example of switch reboot after 5 minutes

```
CLI command:
reload in 0 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.1.1.0 s "000:05" \
1.3.6.1.4.1.35265.1.139.18.1.1.1.2.0 i 1
```

Switch reboot at a specified time

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

tables used: eltMesIssReloadParams — 1.3.6.1.4.1.35265.1.139.18.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.1.1.0 s "hh:mm:ss dd MM"
1.3.6.1.4.1.35265.1.139.18.1.1.1.2.0 i 2
```

Example of switch reboot at 00:00:00 01 01

```
CLI command:
reload at 00:00:00 01 01

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.1.1.0 s "00:00:00 01 01" \
1.3.6.1.4.1.35265.1.139.18.1.1.1.2.0 i 2
```

Canceling the switch reboot at/after the specified time

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

tables used: eltMesIssReloadParams — 1.3.6.1.4.1.35265.1.139.18.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.1.2.0 i 3
```

Example of canceling the switch reboot at/after the specified time

```
CLI command:
reload cancel

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.1.2.0 i 3
```

Enabling/disabling sending an snmp trap about coldstart

MIB: fsiss.mib

Tables used: futuresnmp3 — 1.3.6.14.1.2076.112

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.112.11.0 i {enable(1), disable(2)}
```

Example of enabling snmp-trap coldstart sending

```
CLI command:
snmp enable traps coldstart

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.112.11.0 i 1
```

Enabling/disabling sending an snmp-trap about warmstart

MIB: fsiss.mib

Tables used: eltMesIssSnmp3Globals — 1.3.6.1.4.1.35265.1.139.19.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.19.1.1.1.0 i {enable(1), disable(2)}
```

Example of enabling snmp-trap warmstart sending

```
CLI command:
snmp enable traps warmstart

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.19.1.1.1.0 i 1
```

Enabling/disabling battery monitoring

MIB: ELTEX-MES-ISS-ENV-MIB.mib

Tables used: eltMesIssBatteryMonitorEnable — 1.3.6.1.4.1.35265.1.139.12.1.3.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.3.2.0 i {true(1), false(2)}
```

Example of enabling battery monitoring

```
CLI command:
env battery monitor enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.3.2.0 i 1
```

Enabling/disabling Dying-gasp sending

MIB: ELTEX-MES-ISS-ENV-MIB.mib

tables used: eltMesIssDyingGaspStatus — 1.3.6.1.4.1.35265.1.139.12.1.4.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.12.1.4.1.0 i {true(1), false(2)}
```

Example of enabling dying-gasp sending

```
CLI command:
env dying-gasp enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.12.1.4.1.0 i 1
```

Enabling/disabling telnet server

MIB: ARICENT-ISS-MIB

Tables used: issTelnetStatus — 1.3.6.1.4.1.2076.81.1.97

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.97.0 i {enable(1), disable(2)}
```

Example of disabling telnet server

```
CLI command:
no feature telnet

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.97.0 i 2
```

Enabling/disabling snmp trap and syslog messages sending at the device restart

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

Tables used: eltMesIssSysLoggingParams — 1.3.6.1.4.1.35265.1.139.18.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.2.2.0 i {true(1), false(2)}
```

Example of disabling snmp-trap and syslog messages sending at the device restart

```
CLI command:
no logging events reload

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.2.2.0 i 2
```

4.3 *Firmware images management*

Viewing the device firmware images information

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

Tables used: eltMesIssSysBootVarTable — 1.3.6.1.4.1.35265.1.139.18.1.1.3.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.{firmware validity(3), version(4),
commit(5), build(6), MD5 digest(7), time(8)}.{image(1)| boot(2)}.{number(1|2)}
```

Example of a command for viewing the firmware version

```
CLI command:
show bootvar

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.4.1.1
```

Changing the active firmware image

MIB: ELTEX-MES-ISS-SYSTEM-MIB.mib

Tables used: eltMesIssSysBootVarTable — 1.3.6.1.4.1.35265.1.139.18.1.1.3.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.9.1.{number(1|2)} i {active{1} |
inactive(2)}
```

Example of changing active firmware image from 1 to 2. Let the following be assumed: 1 software image is active

```
CLI command:
boot system inactive

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.9.1.2 i 1
```

5 CONFIGURING SYSTEM TIME

Configuring date and time

MIB: fsiss.mib

Tables used: issSystem — 1.3.6.1.4.1.2076.81.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.1.34.0 s "hh:mm:ss dd MM YY"
```

Example of date configuring on the switch

```
CLI command:
clock set 00:00:00: 01 01 2020

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.34.0 s "00:00:00 01 01"
```

Configuring date and time obtainment from SNTP server

MIB: fsclkiwf.mib

Tables used: fsClkIwfGeneralGroup — 1.3.6.1.4.1.29601.2.46.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.46.1.1.4.0 i 80
```

Example of date configuring on the switch

```
CLI command:
clock time source ntp

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.46.1.1.4.0 i 80
```

Configuring IPv4 SNTP server address

MIB: fssntp.mib

Tables used: fsSntpUnicastServerEntry — 1.3.6.1.4.1.2076.149.1.2.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.2.5.1.8.1.4.{server IP address} i {createAndWait 5(5)} \
1.3.6.1.4.1.2076.149.1.2.5.1.3.1.4.{server IP address} i {version 3(3), version
4(4)) \
1.3.6.1.4.1.2076.149.1.2.5.1.4.1.4.{server IP address} i {port} \
1.3.6.1.4.1.2076.149.1.2.5.1.5.1.4.{server IP address} i {primary(1),
secondary(2)} \
1.3.6.1.4.1.2076.149.1.2.5.1.8.1.4.{server IP address} i {Active (1)}
```

Example of configuring IPv4 address of main SNTP server version 3

```
CLI command:
set sntp unicast-server ipv4 192.168.1.1 primary version 3

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.2.5.1.8.1.4.192.168.1.1 i 5
1.3.6.1.4.1.2076.149.1.2.5.1.3.1.4.192.168.1.1 i 3 \
1.3.6.1.4.1.2076.149.1.2.5.1.4.1.4.192.168.1.1 i 123 \
1.3.6.1.4.1.2076.149.1.2.5.1.5.1.4.192.168.1.1 i 1 \
1.3.6.1.4.1.2076.149.1.2.5.1.8.1.4.192.168.1.1 i 1
```

The port field can take values 1025-36564. By default, the port number is 123.

Configuring IPv6 SNTP server address

MIB: fssntp.mib

Tables used: fsSntpUnicastServerEntry — 1.3.6.1.4.1.2076.149.1.2.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.2.5.1.8.2.16.{server IP address} i {createAndWait 5(5)}
\
1.3.6.1.4.1.2076.149.1.2.5.1.3.2.16.{server IP address} i {version 3(3),
version 4(4)) \
1.3.6.1.4.1.2076.149.1.2.5.1.4.2.16.{server IP address} i {port} \
1.3.6.1.4.1.2076.149.1.2.5.1.5.2.16.{server IP address} i {primary(1),
secondary(2)} \
1.3.6.1.4.1.2076.149.1.2.5.1.8.2.16.{server IP address} i {Active (1)}
```

Example of configuring IPv6 address of main SNTP server version 3

```
CLI command:
set sntp unicast-server ipv6 2001:db8::2 primary version 3

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.2.5.1.8.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.2 i 5 \
1.3.6.1.4.1.2076.149.1.2.5.1.3.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.2 i 3 \
1.3.6.1.4.1.2076.149.1.2.5.1.4.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.2 i 123 \
1.3.6.1.4.1.2076.149.1.2.5.1.5.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.2 i 1 \
1.3.6.1.4.1.2076.149.1.2.5.1.8.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.2 i 1
```

The port field can take values 1025-36564. By default, the port number is 123.

Configuring daylight saving time

MIB: fssntp.mib

Tables used: fsSntpScalars — 1.3.6.1.4.1.2076.149.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.1.12.0 s "weekofmonth-weekofday-mounth,HH:MM" \
1.3.6.1.4.1.2076.149.1.1.13.0 s "weekofmonth-weekofday-mounth,HH:MM"
```

Example of configuring daylight saving time

```
CLI command:
set sntp client clock-summer-time second-thu-aug,00:00 second-thu-aug,01:00

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.1.12.0 s "second-thu-aug,00:00" \
1.3.6.1.4.1.2076.149.1.1.13.0 s "second-thu-aug,01:00"
```

Enabling/disabling SNTP client on the switch

MIB: fssntp.mib

Tables used: fsSntpScalars — 1.3.6.1.4.1.2076.149.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.1.3.0 i {enable(1), disable(0)}
```

Example of enabling SNTP client on the switch

```
CLI command:
set sntp client enabled

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.1.3.0 i 1
```

Configuring sntp time zone

MIB: fssntp.mib

Tables used: fsSntpScalars — 1.3.6.1.4.1.2076.149.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.1.11.0 s "(+/-)HH:MM"
```

Example of configuring sntp time zone

```
CLI command:
set sntp client time-zone +07:00

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.1.11.0 s "+07:00"
```

Configuring the interval for sending unicast SNTP requests

MIB: fssntp.mib

Tables used: fsSntpUnicast — 1.3.6.1.4.1.2076.149.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.2.2.0 u {interval in seconds}
```

Example of configuring the interval for sending unicast SNTP requests

```
CLI command:
set sntp unicast-poll-interval 4096

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.2.2.0 u 4096
```

The interval can take the values 16-16384 and must be a power of two. For example, 16, 32, 64, etc.

Configuring maximum waiting time for a response from SNTP server

MIB: fssntp.mib

Tables used: fsSntpUnicast — 1.3.6.1.4.1.2076.149.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.2.3.0 u {1-30 seconds}
```

Example of configuring waiting time for a response from SNTP server

```
CLI command:
set sntp client unicast-max-poll-timeout 30

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.2.3.0 u 30
```

Configuring maximum number of connection attempts to SNTP server

MIB: fssntp.mib

Tables used: fsSntpUnicast — 1.3.6.1.4.1.2076.149.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.149.1.2.4.0 u {1-10}
```

Example of configuring waiting time for a response from SNTP server

```
CLI command:
set sntp client unicast-max-poll-retry 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.2.4.0 u 10
```

6 OPERATION WITH MAC TABLES

6.1 *Viewing the contents of MAC table*

Viewing the contents of table by VLAN

MIB: Q-BRIDGE-MIB.mib

Tables used: dot1qTpFdbEntry — 1.3.6.1.2.1.17.7.1.2.2.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.2.2.1.{vlan-id}
```

Example of viewing the contents of MAC table in VLAN 5

```
CLI command:
show mac-address-table vlan 5

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.17.7.1.2.2.1.5
```

Viewing the contents of table by interfaces

MIB: ELTEX-MES-ISS-VLAN-MIB.mib

Tables used: eltMesIssVlanFdbPortEntry — 1.3.6.1.4.1.35265.1.139.3.1.1.1.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.1.1.1.{ifindex}
```

Example of viewing the contents of MAC table on gi0/2

```
CLI command:
show mac-address-table interface gi 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.1.1.1.2
```

6.2 *Configuring MAC Address Notification*

Enabling/disabling MAC Address Notification

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.9.9.215.1.1.1.0 i {true(1), false(2)}
```

Example of enabling MAC Address Notification on a device

```
CLI command:
mac-address-table notification change

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.1.0 i 1
```

Example of disabling MAC Address Notification on a device

```
CLI command:
no mac-address-table notification change

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.1.0 i 2
```

Configuring maximum time interval between sending SNMP notifications

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.9.9.215.1.1.2.0 u {0-604800)
```

Example of configuring maximum time interval between sending SNMP notifications

```
CLI command:
mac-address-table notification change interval 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.2.0 u 10
```

Enabling sending of traps to the syslog about events of studying or deleting MAC addresses

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1.5.0 i {true(1), false(2)}
```

Example of enabling sending of traps to the syslog about events of studying or deleting MAC addresses

```
CLI command:
logging events mac-address-table change

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.5.0 i 1
```

Configuring maximum number of events about changing the state of the MAC address table saved in the history

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1.7.0 u {0-500}
```

Example of configuring 5 events about changing the state of MAC address table saved in the history

```
CLI command:
mac-address-table notification change history 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
```

```
1.3.6.1.4.1.9.9.215.1.1.7.0 u 5
```

Enabling notifications on each interface about MAC address status change events

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.2.1.1.{Learnt(1), Removed(2)}.{ifindex} i {true(1),
false(2)}
```

Example of enabling notification on GigabitEthernet 0/12

```
CLI command:
interface gigabitethernet 0/12
  snmp trap mac-address-table change learnt
  snmp trap mac-address-table change removed

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.2.1.1.1.12 i 1 \
1.3.6.1.4.1.9.9.215.1.2.1.1.2.12 i 1
```

Displaying all notifications about changes in the status of MAC addresses saved in the history

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1
```

Example of displaying all notifications about changes in the status of MAC addresses saved in the history

```
CLI command:
show mac-address-table notification change history

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1
```

6.3 *MAC Flapping*

Enabling MAC Flapping Tracking

MIB: ELTEX-MAC-NOTIFICATION-MIB.mib

Tables used: eltexMnFlappingObjects — 1.3.6.1.4.1.35265.33.1.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.33.1.1.1.0 i {true(1), false(2)}
```

Example of disabling MAC Flapping tracking on a device (enabled by default)

```
CLI command:
no mac-address-table notification flapping

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.33.1.1.1.0 i 2
```

Enabling MAC Flapping Logging

MIB: ELTEX-MAC-NOTIFICATION-MIB.mib

Tables used: eltexMnFlappingObjects — 1.3.6.1.4.1.35265.33.1.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.33.1.1.2.0 i {true(1), false(2)}
```

Example of disabling MAC Flapping logging on a device (enabled by default)

```
CLI command:
no logging events mac-address-table flapping

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.33.1.1.2.0 i 2
```

6.4 *Configuring MAC-based VLAN*

Configuration MAC groups

MIB: ELTEX-MES-ISS-VLAN-MIB.mib

Tables used: eltMesIssMacBasedVlanGroupTable — 1.3.6.1.4.1.35265.1.139.3.1.3.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.3.2.1.4.{mac1}.{mac2}.{mac3}.{mac4}.{mac5}.{mac6}.{
mask1}.{mask2}.{mask3}.{mask4}.{mask5}.{mask6} i {active(1), create and
wait(5), destroy(6)}

snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.3.2.1.3.{mac1}.{mac2}.{mac3}.{mac4}.{mac5}.{mac6}.{
mask1}.{mask2}.{mask3}.{mask4}.{mask5}.{mask6} i {group-id}
```

Example of creating MAC group with the number 5 for the MAC-based VLAN functionality, including the range of MAC addresses 00:00:00:00:aa:00 – 00:00:00:00:aa:ff

```
CLI command:
map mac 00:00:00:00:aa:00 ff:ff:ff:ff:ff:00 macs-group 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.3.2.1.4.0.0.0.0.170.0.255.255.255.255.255.0 i 5 \
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.3.2.1.3.0.0.0.0.170.0.255.255.255.255.255.0 i 5 \
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.3.2.1.4.0.0.0.0.170.0.255.255.255.255.255.0 i 1
```

Example of deleting MAC group for MAC-based VLAN functionality that includes a range of MAC addresses 00:00:00:00:aa:00 – 00:00:00:00: aa:ff

```
CLI command:
No map mac 00:00:00:00:aa:00 ff:ff:ff:ff:ff:00

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.3.2.1.4.0.0.0.0.170.0.255.255.255.255.255.0 i 6
```

{mac1-6} is the MAC address represented in the decimal system;

{mask1-6} is the mask of the MAC address range, represented in the decimal system.

Binding a MAC group to an interface

MIB: ELTEX-MES-ISS-VLAN-MIB.mib

Tables used: eltMesIssMacBasedVlanPortEntry — 1.3.6.1.4.1.35265.1.139.3.1.2.3.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.3.1.4.{ifindex}.{group-id} i {active(1), create
and wait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.3.1.2.{ifindex}.{group-id} u {vlan-id}
```

Example of binding a MAC group with the number 5 to gi0/2 interface and vlan 10

```
CLI command:
interface gi 0/2
switchport map macs-group 5 vlan 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.3.1.4.2.5 i 5
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.3.1.2.2.5 u 10
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.3.1.4.2.5 i 1
```

Example of binding a MAC group with the number 5 to gi0/2 interface

```
CLI command:
interface gi 0/2
no switchport map macs-group 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.3.1.4.2.5 i 6
```

6.5 *Configuring Protocol-based VLAN*

Configuring protocol groups

MIB: Q-BRIDGE-MIB

Tables used: dot1vProtocolGroupEntry — 1.3.6.1.2.1.17.7.1.5.1.1

Creating a protocol group

```
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.1.1.4.{frame-type}.2.{ethertype-1}.{ethertype-2} i
{active(1),  create and wait(5), destroy(6)}


snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.1.1.3.{frame-type}.2.{ethertype-1}.{ethertype-2} i {group-
id}
```

Example of creating a protocol group with the number 100, including ethernet frames with ethertype ab:cd

```
CLI command:
map protocol other ab:cd  Enet-v2 protocols-group 100

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
```

```
1.3.6.1.2.1.17.7.1.5.1.1.4.1.2.171.205 i 5
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.1.1.3.1.2.171.205 i 100
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.1.1.4.1.2.171.205 i 1
```

Example of deleting a protocol group with the number 100, including ethernet frames with ethertype ab:cd

```
CLI command:
no map  protocol other ab:cd enet-v2

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.1.1.4.1.2.171.205 i 6
```

{frame-type} is the type of encapsulation of frames, can take values:

- **ethernet (1);**
- **rfc1042(snap) (2);**
- **llcOther (5).**

{ethertype-1}, {ethertype-2} are the first and second half of the ethertype in the decimal system.

Binding a protocol group to an interface

MIB: Q-BRIDGE-MIB

Tables used: dot1vProtocolPortTable — 1.3.6.1.2.1.17.7.1.5.2

```
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.2.1.3.{ifindex}.{group-id} i {create and go(4),
destroy(6)}

snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.2.1.2.{ifindex}.{group-id} i {vlan-id}
```

Example of binding a MAC group with the number 100 to gi0/5 interface and vlan 10

```
CLI command:
interface gi 0/5
switchport map protocol-group 100 vlan 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.2.1.3.5.100 i 4
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.2.1.2.5.100 i 10
```

Example of deleting the binding of the protocol group with the number 100 to gi0/5 interface

```
CLI command:
interface gi 0/2
no switchport map protocol-group 100

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.5.2.1.3.5.100 i 6
```

7 INTERFACES CONFIGURATION

7.1 *Features of Ethernet interfaces*

Viewing the Port Description

MIB: IF-MIB

Tables used: ifXentry — 1.3.6.1.2.1.31.1.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.31.1.1.1.18.{ifIndex}
```

Example of Description viewing on GigabitEthernet 0/1 interface

```
CLI command:
show interfaces description GigabitEthernet 0/1

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.31.1.1.1.18.1
```

Viewing the speed on the interface

MIB: IF-MIB

Tables used: ifXentry — 1.3.6.1.2.1.31.1.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.31.1.1.1.15.{ifindex}
```

Example of viewing the speed on GigabitEthernet 0/2

```
CLI command:
show interface status GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.31.1.1.1.15.2
```

Viewing the port status

MIB: IF-MIB

Tables used: ifEntry — 1.3.6.1.2.1.2.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.2.2.1.7.{ifIndex}
```

Example of viewing GigabitEthernet 0/1 port status

```
CLI command:
show interfaces status GigabitEthernet 0/1

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.2.2.1.7.1
```

Possible options:
up(1);
down(2);
testing(3).

Enabling/disabling the configurable interface

MIB: IF-MIB

Tables used: ifEntry — 1.3.6.1.2.1.2.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.2.2.1.7.{ifIndex} i {up(1),down(2)}
```

Example of disabling GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.2.2.1.7.2 i 2
```

Viewing the port operational status

MIB: IF-MIB

Tables used: ifEntry — 1.3.6.1.2.1.2.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.2.2.1.8.{ifIndex}
```

Example of viewing GigabitEthernet 0/1 port status

```
CLI command:
show interfaces status GigabitEthernet 0/1

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.2.2.1.8.1
```

Possible options:
up(1);
down(2).

Viewing the unicast packets counter on the interface

MIB: IF-MIB

Tables used: ifEntry — 1.3.6.1.2.1.2.2.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.2.2.1.11.{ifIndex}
```

Example of viewing the counter of incoming unicast packets on GigabitEthernet 0/2 interface

```
CLI command:
show interface counters GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.2.2.1.11.2
```

Viewing the multicast packets counter on the interface

MIB: IF-MIB

Tables used: ifXentry — 1.3.6.1.2.1.31.1.1.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.31.1.1.1.2.{ifindex}
```

Example of viewing the counter of incoming multicast packets on GigabitEthernet 0/2 interface

```
CLI command:
show interface counters GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.31.1.1.1.2.2
```

Viewing the broadcast packets counter on the interface

MIB: IF-MIB

Tables used: ifXentry — 1.3.6.1.2.1.31.1.1.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.31.1.1.1.3.{ifindex}
```

Example of viewing the counter of incoming broadcast packets on GigabitEthernet 0/2 interface

```
CLI command:
show interface counters GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.31.1.1.1.3.2
```

Viewing the octet counter on the interface

MIB: IF-MIB

Tables used: ifEntry — 1.3.6.1.2.1.2.2.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.2.2.1.10.{ifindex}
```

Example of viewing the received octet counter on GigabitEthernet 0/2 interface

```
CLI command:
show interface counters GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.2.2.1.10.50
```

By octet is meant the number of bytes.

1 octet = 1 byte

Viewing the CRC Errors counter on the interface

MIB: EtherLike-MIB

Tables used: dot3StatsEntry — 1.3.6.1.2.1.10.7.2.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.10.7.2.1.2.{ifindex}
```

Example of viewing the CRC Errors counter on GigabitEthernet 0/2 interface

```
CLI command:
show interface GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.10.7.2.1.2.2
```

Viewing the Symbol Errors counter on the interface

MIB: EtherLike-MIB

Tables used: dot3StatsEntry — 1.3.6.1.2.1.10.7.2.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.10.7.2.1.18.{ifindex}
```

Example of viewing the Symbol Errors counter on GigabitEthernet 0/2 interface

```
CLI command:
show interface GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.10.7.2.1.18.2
```

Monitoring the incoming load of the switch ports

MIB: ELTEX-MES-ISS-MIB.mib

Tables used: eltMesIssQosMIB — 1.3.6.1.4.1.35265.1.139.5

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.1.139.5.1.5.1.1.{PPS(3), KBPS(4)}.{ifindex}.{interval in
seconds}
```

Example of viewing a download on GigabitEthernet 0/2 interface

```
CLI command:
show interface utilization GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.5.1.5.1.1.3.2.5
```

Monitoring the outgoing load of the switch ports

MIB: ELTEX-MES-ISS-MIB.mib

Tables used: eltMesIssQosMIB — 1.3.6.1.4.1.35265.1.139.5

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.1.139.5.1.5.1.1.{PPS(5), KBPS(6)}.{ifindex}.{5 seconds(5), 1
minute (60), 5 minutes(300)}
```

Example of viewing an outgoing download on GigabitEthernet 0/23 interface

```
CLI command:
show interfaces GigabitEthernet 0/2

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.5.1.5.1.1.5.23.300
```

Configuring an automatic speed matching

MIB: fsiss.mib

Tables used: issPortCtrlEntry — 1.3.6.1.4.1.2076.81.2.2.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.81.2.2.1.2.{ifindex} i {auto(1), {no negotiation(2)}
```

Example of disabling auto-negotiation on GigabitEthernet 0/1 interface

```
CLI command:
no negotiation

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.2.2.1.2.1 i 2
```

Configuring Duplex mode

MIB: fsiss.mib

Tables used: issPortCtrlEntry — 1.3.6.1.4.1.2076.81.2.2.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.81.2.2.1.3.{ifindex} i {full(1), half(2)}
```

Example of enabling the half duplex mode on GigabitEthernet 0/1 interface

```
CLI command:
duplex half

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.2.2.1.3.1 i 2
```

Before configuring duplex mode, disable the auto-negotiation.

Configuring the interface speed

MIB: fsiss.mib

Tables used: issPortCtrlEntry — 1.3.6.1.4.1.2076.81.2.2.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.81.2.2.1.4.{ifindex} i {10M(1), 100M(2), 1G(3), 10G(4)}
```

Example of speed configuring on GigabitEthernet 0/1 interface

```
CLI command:
speed 100

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.2.2.1.4.1 i 2
```

Before configuring the speed, disable the auto-negotiation.

Configuring the combo port mode

MIB: ELTEX-MES-ISS-INTERFACES-MIB.mib

Tables used: eltMesIssPortCtrlTable — 1.3.6.1.4.1.35265.1.139.4.1.2.1.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.1.139.4.1.2.1.1.1.{ifindex} i {force-fiber(1), force-
copper(2), prefer-fiber(3)}
```

Example of configuring GigabitEthernet 0/25 interface

```
CLI command:
media-type force-copper

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.4.1.2.1.1.1.25 i 2
```

Viewing the list of ports combined in the port-channel

MIB: stdla.mib

Tables used: dot3adAggPortEntry — 1.2.840.10006.300.43.1.2.1.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.2.840.10006.300.43.1.2.1.1.4.{ifindex}
```

Example of viewing the membership of GigabitEthernet 0/2 interface in the port-channel

```
CLI command:
show interfaces GigabitEthernet 0/2 etherchannel

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.2.840.10006.300.43.1.2.1.1.4.2
```

Configuring the system MTU

MIB: ELTEX-MES-ISS-CFA-MIB.mib

Tables used: eltMesIssCfaGlobalMtu — 1.3.6.1.4.1.35265.1.139.20.1.1.1.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.20.1.1.1.0 i {mtu 128-12288}
```

Example of configuring the system MTU

```
CLI command:
system mtu 9000

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.20.1.1.1.0 i 9000
```

Configuring the MTU on the interface

MIB: fscfa.mib

Tables used: ifMainTable — 1.3.6.1.4.1.2076.27.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.3.{ifindex} i {mtu 128-12288}
```

Example of configuring the MTU on GigabitEthernet 0/2 interface

```
CLI command:
interface gi 0/2
system mtu 9000

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.3.2 i 9000
```

Enabling/disabling MAC address learning on the interface

MIB: fsvlan.mib

Tables used: dot1qFutureVlanPortUnicastMacLearning — 1.3.6.1.4.1.2076.65.1.10.1.8

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.65.1.10.1.8.{ifindex} i {enable(1), disable(2)}
```

Example of disabling MAC address learning for GigabitEthernet 0/3

```
CLI command:
interface GigabitEthernet 0/3
switchport unicast-mac learning disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.65.1.10.1.8.3 i 2
```

Configuring interface auto-negotiation parameters

MIB: ELTEX-MES-ISS-INTERFACES-MIB

Tables used: eltMesIssPortCtrlEntry — 1.3.6.1.4.1.35265.1.139.4.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.4.1.2.1.1.3.{ifindex} x "{AN-bits} 00"
```

Example of setting 10f 100f 1000f modes for gi0/5 interface

```
CLI command:
int gi 0/5
negotiation 10f 100f 1000f

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.4.1.2.1.1.3.5 x "15 00"
```

AN-bits:

default (0)
unknown (1)
half10M (2)
full10M (3)
half100M (4)
full100M (5)
full1G (7)

Resetting the interface settings

MIB: ELTEX-MES-ISS-INTERFACES-MIB.mib

Tables used: eltMesIssInterfacesGlobals — 1.3.6.1.4.1.35265.1.139.4.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.4.1.1.1.0 i {ifIndex}
```

Example of resetting gi 0/15 interface settings

```
CLI command:
default interface gi 0/15

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.4.1.1.1.0 i 15
```

7.2 *VLAN configuration*

Creating/deleting VLAN

MIB: Q-BRIDGE-MIB

Tables used: dot1qVlanStaticTable — 1.3.6.1.2.1.17.7.1.4.3.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.4.3.1.5.{vlan} i {create and wait(5), destroy(6), active(1),
notinService(2)}\
```

```
1.3.6.1.2.1.17.7.1.4.3.1.5.{vlan} i { create and wait(5), destroy(6),
active(1), notinService(2)}
```

Example of creating vlan 5 on a device

```
CLI command:
vlan 5
vlan active

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.5.5 i 5 \
1.3.6.1.2.1.17.7.1.4.3.1.5.5 i 1
```

Example of deleting vlan 5 on a device

```
CLI command:
no vlan 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.5 i 6
```

Configuring the port mode

MIB: fsiss.mib

Tables used: dot1qFutureVlanPortEntry — 1.3.6.1.4.1.2076.65.1.10.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.65.1.10.1.2.{ifindex} i {access(1), trunk(2), general(3)}
```

Example of configuring GigabitEthernet 0/2 interface in trunk mode

```
CLI command:
switchport mode trunk

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.65.1.10.1.2.2 i 2
```

Assigning pvid to an interface

MIB: Q-BRIDGE-MIB.mib

Tables used: dot1qPortVlanTable — 1.3.6.1.2.1.17.7.1.4.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.7.1.4.5.1.1.{ifindex} u {1-4094}
```

Example of pvid 15 assignment for GigabitEthernet 0/2

```
CLI command:
Interface GigabitEthernet 0/2
 switchport general pvid 15

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.5.1.1.2 u 15
```

Adding VLAN to a port

MIB: Q-BRIDGE-MIB.mib

Tables used: dot1qVlanStaticEntry — 1.3.6.1.2.1.17.7.1.4.3.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.7.1.4.3.1.{tagged(2), forbidden(3), untagged(4)}.{Vlan} x {port
as a bitmask}
```

Example of adding vlan 5 to GigabitEthernet 0/2 interface in tagged mode

```
CLI command:
Interface GigabitEthernet 0/2
 switchport mode general
 switchport general allowed vlan add 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.2.5 x 4000000000
```

Example of adding vlan 5 to GigabitEthernet 0/1 interface in untagged mode

```
CLI command:
interface GigabitEthernet 0/1
 switchport mode general
 switchport general allowed vlan add 5 untagged

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.2.5 x 8000000000 \
1.3.6.1.2.1.17.7.1.4.3.1.4.5 x 8000000000
```

1. To set the port to Untagged mode, the port must be in Tagged mode in the desired VLAN.
2. An example of bitmask composing is given in the "Appendix A. The method of calculating the bit mask" section.

Access port configuration

MIB: Q-BRIDGE-MIB.mib

Tables used: dot1qVlanStaticEntry — 1.3.6.1.2.1.17.7.1.4.3.1,
dot1qPortVlanEntry — 1.3.6.1.2.1.17.7.1.4.3.1.2,
dot1qFutureVlanPortEntry — 1.3.6.1.4.1.2076.65.1.10.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.4.3.1.2.{vlan} x {ifindex as a bitmask}
1.3.6.1.2.1.17.7.1.4.3.1.4.{vlan} x {ifindex as a bitmask}
1.3.6.1.2.1.17.7.1.4.5.1.1.{ifindex} u {vlan}
1.3.6.1.4.1.2076.65.1.10.1.2.{ifindex} i 1
1.3.6.1.2.1.17.7.1.4.5.1.2.{ifindex} i 3
```

Example of configuring GigabitEthernet 0/4 interface in access vlan 10 mode

```
CLI command:
switchport mode access
switchport acceptable-frame-type untaggedAndPrioritytagged
switchport access vlan 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.2.10 x 10000000000000000000000000000000000000000 \
1.3.6.1.2.1.17.7.1.4.3.1.4.10 x 10000000000000000000000000000000000000000 \
1.3.6.1.2.1.17.7.1.4.5.1.1.4 u 101.3.6.1.4.1.2076.65.1.10.1.2.4 i 1 \
1.3.6.1.2.1.17.7.1.4.5.1.2.4 i 3
```

Configuring selective-qinq rules

MIB: ELTEX-VLAN-TRANSLATION-MIB.mib

Tables used: eltexSqinqPortEntry — 1.3.6.1.4.1.35265.54.1.1.2.1.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.4.1.35265.54.1.1.2.1.1.5.{ifindex}.{ingress(1),egress(2)}.{c-vlan} i
{CreateAndWait(5), Destroy(6), Active(1)} \
1.3.6.1.4.1.35265.54.1.1.2.1.1.3.{ifindex}.{ingress(1), egress(2)}.{c-vlan} i
{overrideVlan(1), addVlan(2)} \
1.3.6.1.4.1.35265.54.1.1.2.1.1.4.{ifindex}.{ingress(1), egress(2)}.{c-vlan} i
{s-vlan} \
1.3.6.1.4.1.35265.54.1.1.2.1.1.5.{ifindex}.{ingress(1), egress(2)}.{c-vlan} i
{CreateAndWait(5), Destroy(6), Active(1)}
```

Example of adding ingress s-vlan 1000 to ingress c-vlan 127 on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
 selective-qinq list ingress add-vlan 1000 ingress-vlan 127

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.5.2.1.127 i 5 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.3.2.1.127 i 2 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.4.2.1.127 i 1000 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.5.2.1.127 i 1
```

Example of replacement with ingress s-vlan 2000 for ingress c-vlan 129 on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
 selective-qinq list ingress override-vlan 2000 ingress-vlan 129

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.5.2.1.129 i 5 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.3.2.1.129 i 1 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.4.2.1.129 i 2000 \
1.3.6.1.4.1.35265.54.1.1.2.1.1.5.2.1.129 i 1
```

To remove the setting, it is enough to set the Destroy(6) parameter in the field 1.3.6.1.4.1.35265.54.1.1.2.1.1.5.{ifindex}.{ingress(1), egress(2)}.{c-vlan}

Vlan name assignment

MIB: Q-BRIDGE-MIB.mib

Tables used: dot1qVlanStaticEntry — 1.3.6.1.2.1.17.7.1.4.3.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.4.3.1.1.{Vlan} s "vlan name"
```

Example of vlan 10 name assignment

```
CLI command:
name vlan name

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.1.10 s "vlan name"
```

Viewing the Vlan name

MIB: Q-BRIDGE-MIB.mib

Tables used: dot1qVlanStaticEntry — 1.3.6.1.2.1.17.7.1.4.3.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.4.3.1.1.{Vlan}
```

Example of viewing the name of vlan 10

```
CLI command:
show vlan

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.3.1.1.10
```

Disabling the default VLAN on the interface

MIB: ELTEX-MES-ISS-VLAN-MIB.mib

Tables used: eltMesIssVlanPortDefaultVlanForbidden — 1.3.6.1.4.1.35265.1.139.3.1.2.1.1.8

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.8.{ifindex} i {true(1), false(2)}
```

Example of a default vlan ban for GigabitEthernet 0/3

```
CLI command:
interface GigabitEthernet 0/3
switchport forbidden default-vlan

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.8.3 i 1
```

Enabling/disabling GARP module

MIB: fsvlan.mib

Tables used: dot1qFutureVlan — 1.3.6.1.4.1.2076.65.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.65.1.6.0 i {shutdown(1) | no shutdown(2)}
```

Example of enabling GARP module

```
CLI command:
no shutdown garp

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.65.1.6.0 i 2
```

Enabling/disabling GVRP globally

MIB: Q-BRIDGE-MIB

Tables used: dot1qBase — 1.3.6.1.2.1.17.7.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.1.5.0 i {enable(1) | disable(2)}
```

Example of enabling GVRP globally

```
CLI command:
gvrp enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.1.5.0 i 1
```

Enabling/disabling GVRP on interfaces

MIB: Q-BRIDGE-MIB

Tables used: dot1qPortVlanEntry — 1.3.6.1.2.1.17.7.1.4.5.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.4.5.1.4.{ifindex} {enable(1) | disable(2)}
```

Example of enabling GVRP on gi0/1 interface

```
CLI command:
interface gi0/1
gvrp enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.5.1.4.1 i 1
```

Configuring GARP Timers

MIB: BRIDGE-MIB

Tables used: dot1dPortGarpTable — 1.3.6.1.2.1.17.6.1.3.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.6.1.3.1.1.{join(1) | leave(2) | leaveall(3)}.{ifindex} i
{centisec}
```

Example of configuring GARP join timer 300ms on gi0/1 interface

```
CLI command:
interface gi0/1
set garp timer join 300

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.6.1.3.1.1.1.1 i 30
```

Configuring GVRP vlan restricted registration

MIB: Q-BRIDGE-MIB

Tables used: dot1qPortVlanEntry — 1.3.6.1.2.1.17.7.1.4.5.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.2.1.17.7.1.4.5.1.7.{ifindex} i {enable(1) | disable(1)}
```

Example of enabling GVRP restricted registration on gi0/1 interface

```
CLI command:
interface gi0/1
Vlan restricted enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.7.1.4.5.1.7.1 i 1
```

Viewing GVRP statistics

MIB: fsvlan.mib, Q-BRIDGE-MIB

Tables used: fsMIDot1qFutureVlanPortTable — 1.3.6.1.4.1.2076.120.1.3.1, dot1qPortVlanEntry — 1.3.6.1.2.1.17.7.1.4.5.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.120.1.3.1{counter}.{ifindex}
```

Example of displaying GVRP JoinEmptyTxCount for gi0/1 interface

```
CLI command:
show gvrp statistics

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.120.1.3.1.22
```

Counter:

JoinEmptyTxCount – 22;
JoinEmptyRxCount – 23;
JoinInTxCount – 24;
JoinInRxCount – 25;
LeaveInTxCount – 26;
LeaveInRxCount – 27;
LeaveEmptyTxCount – 28;
LeaveEmptyRxCount – 29;
EmptyTxCount – 30;
EmptyRxCount – 31;
LeaveAllTxCount – 32;
LeaveAllRxCount – 33;
DiscardCount – 34;
FailedRegistrations – 5;
LastPduOrigin – 6.

The FailedRegistrations and LastPduOrigin are viewed via table 1.3.6.1.2.1.17.7.1.4.5.{ifindex}.

7.3 *Configuring interface isolation*

Adding Port-isolation rules

MIB: fsiss.mib

Tables used: issPortIsolationTable — 1.3.6.1.4.1.2076.81.2.3

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.81.2.3.1.5.{ifindex_src}.0.{ifindex_dst} i {create and
go(4)|destroy(6)}
```

Example of gi0/1 interface isolation configuration on gi0/5

```
CLI command:
interface gi0/1
port-isolation add gi 0/5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.2.3.1.5.1.0.5 i 4
```

Example of deleting the isolation of gi0/1 interface on gi0/5

```
CLI command:
interface gi0/1
port-isolation remove gi 0/5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.2.3.1.5.1.0.5 i 6
```

Adding switchport protected rules

MIB: fsvlan.mib

Tables used: dot1qFutureVlanPortTable — 1.3.6.1.4.1.2076.65.1.10

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.120.1.3.1.6.{ifindex} i { enabled(1)| disabled(2)}
```

Example of switchport protected configuration on gi0/5

```
CLI command:
interface gi0/5
switchport protected

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.120.1.3.1.6.5 i 1
```

Example of deleting switchport protected from gi0/5

```
CLI command:
interface gi0/5
no switchport protected

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.120.1.3.1.6.5 i 2
```

7.4 *L2PT configuration*

Changing the destination MAC address

MIB: fsvlnext.mib, ELTEX-MES-ISS-VLAN-TUNNEL-MIB.mib

Tables used: fsVlanTunnelObjects — 1.3.6.1.4.1.2076.137.2,
eltMesIssVlanTunnelObjects — 1.3.6.1.4.1.35265.1.139.21.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.137.2.{STP(2)| LACP(3)| LLDP(13)| IGMP(17) | ISIS-l1(18)|
ISIS-l2(19)| Flow-control(20)}.0 x {multicast mac-address}

snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.21.1.{ PVST(1)| VTP(2)| OSPF(3)| RIP(4)| VRRP(5)}.0 x
{multicast mac-address}
```

Example of changing the destination address for the RIP L2PT protocol

```
CLI command:
rip-tunnel-address 01:aa:aa:aa:aa:aa

SNMP command:
snmpset -v2c –c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.21.1.4.0 x 01aaaaaaaaaa
```

Enabling L2PT on the interface

MIB: fsvlnext.mib, ELTEX-MES-ISS-VLAN-TUNNEL-MIB.mib

Tables used: fsVlanTunnelProtocolTable — 1.3.6.1.4.1.2076.137.2.8,
eltMesIssVlanTunnelProtocolTable — 1.3.6.1.4.1.35265.1.139.21.1.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.137.2.8.1.{LACP(2) | STP(3)| IGMP(6)| LLDP(10)| ISIS-l1(14)|
ISIS-l2(15)| Flow-control(16)}.{ifindex} i {peer(1) | tunnel(2)}

snmpset -v2c -c <community> <IP address>\
1.3.6.1.4.1.35265.1.139.21.1.5.1.{PVST(1)| VTP(2)| OSPF(3)| RIP(4) |
VRRP(5)}.{ifindex} i {peer(1) | tunnel(2)}
```

Example of enabling L2PT for the RIP protocol on gi0/7 interface

```
CLI command:
interface gi0/7
l2protocol-tunnel rip

SNMP command:
snmpset -v2c –c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.21.1.5.1.4.7 i 2
```

Example of disabling L2PT for the RIP protocol on gi0/7 interface

```
CLI command:
interface gi0/7
no l2protocol-tunnel rip

SNMP command:
snmpset -v2c –c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.21.1.5.1.4.7 i 1
```

Viewing L2PT counters

MIB: fsvlnext.mib, ELTEX-MES-ISS-VLAN-TUNNEL-MIB.mib

Tables used: fsVlanTunnelProtocolStatsTable — 1.3.6.1.4.1.2076.137.2.9,
eltMesIssVlanTunnelProtocolStatsTable — 1.3.6.1.4.1.35265.1.139.21.1.6

```
snmpwalk -v2c –c <community> <IP address> \
1.3.6.1.4.1.2076.137.2.9
snmpwalk -v2c –c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.21.1.6
```

Example of viewing counters for L2PT

```
CLI command:
show l2protocol-tunnel

SNMP command:
snmpwalk -v2c –c private 192.168.1.30 \
1.3.6.1.4.1.2076.137.2.9
snmpwalk -v2c –c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.21.1.6
```

7.5 *Managing the errdisable mechanism*

Viewing the errdisable interfaces table

MIB: ELTEX-ERRDISABLE-MIB.mib

Tables used: eltexErrdisableObjects — 1.3.6.1.4.1.35265.53.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.53.1.3.1
```

Example of viewing the interface table in the errdisable state

```
CLI command:
show errdisable interfaces

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.53.1.3.1
```

Manual interfaces restoring

MIB: ELTEX-ERRDISABLE-MIB.mib

Tables used: eltexErrdisableObjects — 1.3.6.1.4.1.35265.53.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.53.1.1.1.0 i { ifindex | all(0)}
```

Example of clearing the errdisable state for gi0/13 interface

```
CLI command:
set interface active gi 0/13

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.53.1.1.1.0 i 13
```

Configuring the timeout to restore the interface

MIB: ELTEX-ERRDISABLE-MIB.mib

Tables used: eltexErrdisableObjects — 1.3.6.1.4.1.35265.53.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.53.1.1.2.0 i {errdisable_interval}
```

Example of configuring the recovery interval for interfaces of 30 seconds:

```
CLI command:
errdisable recovery interval 30

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.53.1.1.2.0 i 30
```

Enabling automatic interface recovery for certain events

MIB: ELTEX-ERRDISABLE-MIB.mib

Tables used: eltexErrdisableObjects — 1.3.6.1.4.1.35265.53.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.53.1.2.1.1.2.{cause} i {enable(1) | disable(2)}
```

Example of enabling automatic interface recovery after errdisable activation for storm-control

```
CLI command:
errdisable recovery cause storm-control

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.53.1.2.1.1.2.1 i 1
```

Cause:
storm-control (1);
loopback-detection (2);
udld (3).

Managing SNMP traps for errdisable events

MIB: ELTEX-ERRDISABLE-MIB.mib

Tables used: eltexErrdisableObjects — 1.3.6.1.4.1.35265.53.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.53.1.2.1.1.3.{cause} i {enable(1)|disable(2)}
```

Example of disabling sending traps after errdisable activation for storm-control:

```
CLI command:
no snmp-server enable traps errdisable storm-control

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.53.1.2.1.1.3.1 i 2
```

8 CONFIGURING PROTOCOLS FOR MONITORING RING TOPOLOGIES

8.1 *Configuring xSTP protocols*

8.1.1 RSTP

Changing the operation mode of spanning tree from MSTP to RSTP

MIB: fsmst.mib, fsrst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1, dot1wFutureRst — 1.3.6.1.4.1.2076.79.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.1 i 2 \
1.3.6.1.4.1.2076.79.1.1 i 1 \
1.3.6.1.4.1.2076.79.1.2 i 1
```

Example of enabling RSTP mode

```
CLI command:
spanning-tree mode rst

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.1 i 2 \
1.3.6.1.4.1.2076.79.1.1 i 1 \
1.3.6.1.4.1.2076.79.1.2 i 1
```

Configuring STP compatibility in RSTP mode

MIB: BRIDGE-MIB

Tables used: dot1dStp — 1.3.6.1.2.1.17.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.2.16.0 i {stp(0) | rstp(2)}
```

Example of enabling STP compatibility mode

```
CLI command:
spanning-tree compatibility stp

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.16.0 i 0
```

Example of disabling STP compatibility mode

```
CLI command:
no spanning-tree compatibility

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.16.0 i 2
```

Enabling and disabling RSTP globally

MIB: fsrst.mib

Tables used: dot1wFutureRst — 1.3.6.1.4.1.2076.79.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.2.0 i {enabled(1)| disabled(2)}
```

Example of disabling RSTP globally

```
CLI command:
no spanning-tree

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.2.0 i 2
```

Example of enabling RSTP globally

```
CLI command:
spanning-tree

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.2.0 i 1
```

Enabling and disabling RSTP on separate interfaces

MIB: BRIDGE-MIB

Tables used: dot1dStp — 1.3.6.1.2.1.17.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.2.15.1.4.{ifindex} i {enable(1) | disable(2)}
```

Example of disabling RSTP on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.15.1.4.5 i 2
```

Example of enabling RSTP on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.15.1.4.5 i 1
```

Enabling and disabling pathcost dynamic

MIB: fsrst.mib

Tables used: dot1wFutureRst — 1.3.6.1.4.1.2076.79.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.13.0 i {true(1) | false(2)}
```

Example of enabling pathcost dynamic

```
CLI command:
spanning-tree pathcost dynamic

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.13.0 i 1
```

Example of disabling pathcost dynamic

```
CLI command:
no spanning-tree pathcost dynamic

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.13.0 i 2
```

Enabling and disabling pathcost dynamic lag-speed

MIB: fsrst.mib

Tables used: dot1wFutureRst — 1.3.6.1.4.1.2076.79.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.14.0 i {true(1) | false(2)}
```

Example of enabling pathcost dynamic lag-speed

```
CLI command:
spanning-tree pathcost dynamic

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.14.0 i 1
```

Example of disabling pathcost dynamic lag-speed

```
CLI command:
no spanning-tree pathcost dynamic lag-speed

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.14.0 i 2
```

Configuring Bridge Priority

MIB: BRIDGE-MIB

Tables used: dot1dStp — 1.3.6.1.2.1.17.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.2.2.0 i {priority}
```

Example of configuring spanning-tree priority 16384

```
CLI command:
spanning-tree priority 16384

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.2.0 i 16384
```

Enabling and disabling auto-edge on interfaces

MIB: fsrst.mib

Tables used: dot1wFutureRst — 1.3.6.1.4.1.2076.79.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.21.{ifindex} i {true(1) | false(2)}
```

Example of enabling auto-edge on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree auto-edge

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.21.5 i 1
```

Example of disabling auto-edge on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree auto-edge

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.21.5 i 2
```

Enabling and disabling portfast on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.2.19.1.2.{ifindex} i {true(1) | false(2)}
```

Example of enabling portfast on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree portfast
shutdown
no shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.19.1.2.5 i 1
1.3.6.1.2.1.2.2.1.7.5 i 2
1.3.6.1.2.1.2.2.1.7.5 i 1
```

Example of disabling portfast on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree portfast
shutdown
no shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.19.1.2.5 i 2
```

```
1.3.6.1.2.1.2.2.1.7.5 i 2
1.3.6.1.2.1.2.2.1.7.5 i 1
```

Configuring spanning-tree cost on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.2.19.1.6.{ifindex} i {cost}
```

Example of configuring spanning-tree cost 100 on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree cost 100

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.19.1.6.5 i 100
```

Example of returning spanning-tree cost on gi0/5 interface to the default value

```
CLI command:
interface gi0/5
no spanning-tree cost

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.19.1.6.5 i 0
```

Configuring spanning-tree port-priority on interfaces

MIB: BRIDGE-MIB

Tables used: dot1dStp — 1.3.6.1.2.1.17.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.2.15.1.2.{ifindex} i {port-priority}
```

Example of configuring spanning-tree port-priority 64 on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree port-priority 64

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.17.2.15.1.2.5 i 64
```

Configuring spanning-tree restricted-role on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.22.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree restricted-role on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree restricted-role

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.22.5 i 1
```

Example of disabling spanning-tree restricted-role on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree restricted-role

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.22.5 i 2
```

Configuring spanning-tree restricted-TCN on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.23.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree restricted-tcn on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree restricted-tcn

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.23.5 i 1
```

Example of disabling spanning-tree restricted-tcn on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree restricted-tcn

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.23.5 i 2
```

Configuring spanning-tree bpdufilter on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.24.{ifindex} i {true(1) | false(2)} \
1.3.6.1.4.1.2076.79.1.12.1.25.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree bpdufilter on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree bpdufilter enable
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.24.5 i 2
1.3.6.1.4.1.2076.79.1.12.1.25.5 i 2
```

Example of disabling spanning-tree bpdufilter on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree bpdufilter

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.24.5 i 1
1.3.6.1.4.1.2076.79.1.12.1.25.5 i 1
```

Configuring spanning-tree loopguard on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.28.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree loopguard on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree guard loop

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.28.5 i 1
```

Example of disabling spanning-tree loopguard on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree guard

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.28.5 i 2
```

Configuring spanning-tree bpduguard on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.34.{ifindex} i {none(0) | enabled(1)}

snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.40.{ifindex} i {disable-discarding(1)|admin-down(2)}
```

Example of enabling spanning-tree bpduguard on gi0/5 interface in admin-down mode

```
CLI command:
interface gi0/5
spanning-tree bpduguard enable admin-down
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.34.5 i 1 \
1.3.6.1.4.1.2076.79.1.12.1.40.5 i 2
```

Example of disabling spanning-tree bpduguard on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree bpduguard none

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.34.5 i 0
```

Configuring spanning-tree rootguard on interfaces

MIB: RSTP-MIB

Tables used: dot1dStpExtPortTable — 1.3.6.1.2.1.17.2.19

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.12.1.35.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree rootguard on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree guard root

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.35.5 i 1
```

Example of disabling spanning-tree rootguard on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree guard

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.12.1.35.5 i 2
```

8.1.2 MSTP

Changing the operation mode of the spanning tree from RSTP to MSTP

MIB: fsmst.mib, fsrst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1, dot1wFutureRst — 1.3.6.1.4.1.2076.79.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.79.1.1 i 2 \
1.3.6.1.4.1.2076.80.1.1 i 1 \
1.3.6.1.4.1.2076.80.1.2 i 1
```

Example of enabling RSTP mode

```
CLI command:
spanning-tree mode mst
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.79.1.1 i 2 \
1.3.6.1.4.1.2076.80.1.1 i 1 \
1.3.6.1.4.1.2076.80.1.2 i 1
```

Configuring STP compatibility in MSTP mode

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.23.0 i {stp(0) | rstp(2)| mstp(3)}
```

Example of enabling STP compatibility mode

```
CLI command:
spanning-tree compatibility stp

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.23.0 i 0
```

Example of disabling STP compatibility mode

```
CLI command:
no spanning-tree compatibility

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.23.0 i 3
```

Configuring MSTP instances

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

Configuring MSTP revision

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.27.0 i {revision} \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i {commit(1) | revert (2)}
```

Example of MSTP revision = 123 task

```
CLI command:
spanning-tree mst configuration
revision 123
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.27.0 i 123 \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i 1
```

Example of removing MSTP revision

```
CLI command:
spanning-tree mst configuration
no revision
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.27.0 i 0 \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i 1
```

Configuring MSTP name

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.26.0 s {name} \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i {commit(1) | revert (2)}
```

Example of MSTP name = test task

```
CLI command:
spanning-tree mst configuration
name test
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.26.0 s "test" \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i 1
```

Configuring MSTP instance-vlan compliance

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.39.1.2.{instance} i {vlan-id} \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i {commit(1) | revert (2)}

snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.39.1.3.{instance} i {vlan-id} \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i {commit(1) | revert (2)
```

Example of setting instance 50 vlan 50 compliance

```
CLI command:
spanning-tree mst configuration
instance 50 vlan 50
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.39.1.2.50 i 50 \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i 1
```

Example of deleting instance 50 vlan 50 compliance

```
CLI command:
spanning-tree mst configuration
no instance 50 vlan 50
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.39.1.3.50 i 50 \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.1.0 i 1
```

Viewing pending configuration for spanning-tree mst configuration mode

MIB: ELTEX-MES-ISS-MST-MIB.mib

Tables used: eltMesIssMstConfigPending — 1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.{version(3), name (2), instance-vlan
mapping(4)}
```

Example of viewing MSTP instance-vlan mapping

```
CLI command:
spanning-tree mst configuration
show pending

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.1.4
```

Enabling and disabling MSTP globally

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.2.0  i {enabled(1)| disabled(2)}
```

Example of disabling MSTP globally

```
CLI command:
no spanning-tree

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.2.0 i 2
```

Example of enabling MSTP globally

```
CLI command:
spanning-tree

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.2.0 i 1
```

Enabling and disabling MSTP on separate interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.13.{ifindex} i {disabled(0) | enabled(1)}
```

Example of disabling MSTP on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.13.5 i 0
```

Example of enabling MSTP on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.13.5 i 1
```

Enabling and disabling pathcost dynamic

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.42.0 i {true(1) | false(2)}
```

Example of enabling pathcost dynamic

```
CLI command:
spanning-tree pathcost dynamic

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.42.0 i 1
```

Example of disabling pathcost dynamic

```
CLI command:
no spanning-tree pathcost dynamic

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.42.0 i 2
```

Enabling and disabling pathcost dynamic lag-speed

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.43.0 i {true(1) | false(2)}
```

Example of enabling pathcost dynamic lag-speed

```
CLI command:
spanning-tree pathcost dynamic lag-speed

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.43.0 i 1
```

Example of disabling pathcost dynamic lag-speed

```
CLI command:
no spanning-tree pathcost dynamic lag-speed

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.43.0 i 2
```

Configuring Bridge Priority

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.12.0 i {priority}
```

Example of configuring spanning-tree priority 16384

```
CLI command:
spanning-tree priority 16384

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.12.0 i 16384
```

Configuring Bridge Priority per instance

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.12.0 i {priority}
```

Example of configuring spanning-tree priority 16384

```
CLI command:
spanning-tree priority 16384

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.12.0 i 16384

per-instance priority
fsMstMstiBridgePriority
1.3.6.1.4.1.2076.80.1.38.1.3 i {priority}
```

Enabling and disabling auto-edge on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.43.{ifindex} i {true(1) | false(2)}
```

Example of enabling auto-edge on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree auto-edge

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.43.5 i 1
```

Example of disabling auto-edge on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree auto-edge

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.43.5 i 2
```

Enabling and disabling portfast on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.9.{ifindex} i {true(1) | false(2)}
```

Example of enabling portfast on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree portfast
shutdown
no shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.9.5 i 1
1.3.6.1.2.1.2.2.1.7.5 i 2
1.3.6.1.2.1.2.2.1.7.5 i 1
```

Example of disabling portfast on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree portfast
shutdown
no shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.9.5 i 2
1.3.6.1.2.1.2.2.1.7.5 i 2
1.3.6.1.2.1.2.2.1.7.5 i 1
```

Configuring spanning-tree cost on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.46.{ifindex} i {cost}
```

Example of configuring spanning-tree cost 100 on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree cost 100

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.46.5 i 100
```

Example of returning spanning-tree cost on gi0/5 interface to the default value

```
CLI command:
interface gi0/5
no spanning-tree cost

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.46.5 i 0
```

Configuring spanning-tree port-priority on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.3.{ifindex} i {port-priority}
```

Example of configuring spanning-tree port-priority 64 on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree port-priority 64

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.3.5 i 64
```

Configuring spanning-tree restricted-role on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.44.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree restricted-role on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree restricted-role
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.44.5 i 1
```

Example of disabling spanning-tree restricted-role on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree restricted-role

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.44.5 i 2
```

Configuring spanning-tree restricted-TCN on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.45.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree restricted-tcn on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree restricted-tcn

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.45.5 i 1
```

Example of disabling spanning-tree restricted-tcn on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree restricted-tcn

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.45.5 i 2
```

Configuring spanning-tree bpdufilter on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.47.{ifindex} i {true(1) | false(2)} \
1.3.6.1.4.1.2076.80.1.40.1.48.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree bpdufilter on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree bpdufilter enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.47.5 i 2 \
```

```
1.3.6.1.4.1.2076.80.1.40.1.48.5 i 2
```

Example of disabling spanning-tree bpdufilter on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree bpdufilter

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.47.5 i 1 \
1.3.6.1.4.1.2076.80.1.40.1.48.5 i 1
```

Configuring spanning-tree loopguard on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.51.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree loopguard on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree guard loop

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.51.5 i 1
```

Example of disabling spanning-tree loopguard on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree guard

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.51.5 i 2
```

Configuring spanning-tree bpduguard on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.55.{ifindex} i {none(0) | enabled(1)}

snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.60.{ifindex} i {disable-discarding(1)|admin-down(2)}
```

Example of enabling spanning-tree bpduguard on gi0/5 interface in admin-down mode

```
CLI command:
interface gi0/5
spanning-tree bpduguard enable admin-down

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.55.5 i 1 \
```

```
1.3.6.1.4.1.2076.80.1.40.1.60.5 i 2
```

Example of disabling spanning-tree bpduguard on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree bpduguard none

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.55.5 i 0
```

Configuring spanning-tree rootguard on interfaces

MIB: fsmst.mib

Tables used: dot1sFutureMst — 1.3.6.1.4.1.2076.80.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.80.1.40.1.56.{ifindex} i {true(1) | false(2)}
```

Example of enabling spanning-tree rootguard on gi0/5 interface

```
CLI command:
interface gi0/5
spanning-tree guard root

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.56.5 i 1
```

Example of disabling spanning-tree rootguard on gi0/5 interface

```
CLI command:
interface gi0/5
no spanning-tree guard

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.80.1.40.1.56.5 i 2
```

8.2 *Configuring LLDP Protocol*

Enabling/disabling LLDP module operation

MIB: fslldp.mib

Tables used: fsLldpSystem — 1.3.6.1.4.1.2076.158.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.1.1.0  {start(1), shutdownInProgress(2), shutdown(3)}
```

Example of LLDP module disabling

```
CLI command:
shutdown lldp

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.158.1.1.0 i 3
```

Enabling/disabling LLDP protocol usage on switch

MIB: fslldp.mib

Tables used: fsLldpSystem — 1.3.6.1.4.1.2076.158.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.1.2.0 {enabled(1), disabled(2)}
```

Example of enabling LLDP protocol usage

```
CLI command:
set lldp enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.158.1.2.0 i 1
```

Setting LLDP Protocol version

MIB: fslldp.mib

Tables used: fslldpv2Config — 1.3.6.1.4.1.2076.158.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.5.1.0 i {lldpv1(1), lldpv2(2)}
```

Example of setting v2 version

```
CLI command:
set lldp version v2

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.158.5.1.0 i 2
```

Setting the LLDP BPDU packet filtering mode

MIB: ELTEX-MES-ISS-LLDP-MIB

Tables used: eltMesIssLldpGlobalConfig — 1.3.6.1.4.1.35265.1.139.10.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.10.1.1.1.0 i {filtering(1), flooding(2)}
```

Example of setting the LLDP BPDU flooding mode

```
CLI command:
lldp lldpdu flooding

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.10.1.1.1.0 i 2
```

Setting the chassis-id-subtype for the lldp frame

MIB: fslldp.mib

Tables used: fsLldpTLV — 1.3.6.1.4.1.2076.158.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.2.1.0   i   {chassiscomp(1),   ifalias(2),   portcomp(3),
macaddr(4), nwaddr(5), ifname(6), local(7)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.2.2.0 s {string}
```

Example of setting the chassis-id-subtype value to TEST1

```
CLI command:
lldp chassis-id-subtype local TEST1

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.158.2.1.0 i 7
snmpset -v2c -c public 192.168.1.30\
1.3.6.1.4.1.2076.158.2.2.0 s TEST1
```

Setting the transmission interval of lldp frames

MIB: stdlldp.mib

Tables used: lldpConfiguration — 1.0.8802.1.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.1.0 i {interval}
```

Example of setting the transmission interval

```
CLI command:
lldp transmit-interval 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.1.0 i 10
```

Setting the reinitialization delay

MIB: stdlldp.mib

Tables used: lldpConfiguration — 1.0.8802.1.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.3.0 i {delay}
```

Example of setting the reinitialization delay

```
CLI command:
lldp reinitialization-delay 7

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.3.0 i 7
```

Setting the minimum delay duration between consecutive LLDP frames

MIB: stdlldp.mib

Tables used: lldpConfiguration — 1.0.8802.1.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.4.0 i {value}
```

```
CLI command:
lldp tx-delay 3

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.4.0 i 3
```

Setting the maximum transmission rate of lldp frames

MIB: stdlldp.mib

Tables used: lldpConfiguration — 1.0.8802.1.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.5.0 i {seconds}
```

```
CLI command:
lldp notification-interval 20

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.5.0 i 20
```

Allowing/prohibiting the transmission/recept of packets over the LLDP protocol on the interface

MIB: stdlldp.mib

Tables used: lldpPortConfigEntry — 1.0.8802.1.1.2.1.1.6.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.6.1.2.{ifIndex}    i {txOnly(1), rxOnly(2), txAndRx(3),
disabled(4)}
```

Example of prohibiting the transmission and reception of packets on gi 0/12 interface

```
CLI command:
interface gigabitethernet 0/12
  no lldp transmit
  no lldp receive
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.6.1.2.12 i 4
```

Definition of basic optional TLV fields that will be included by the device in the transmitted LLDP packet

MIB: stdlldp.mib

Tables used: lldpPortConfigEntry — 1.0.8802.1.1.2.1.1.6.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.6.1.2.{ifIndex} x {portDesc(80) | sysName(40) | sysDesc(20)
| sysCap(10)}
```

Example of enabling the port-descr, sys-name, sys-descr options on gi 0/12 interface

```
CLI command:
interface gigabitethernet 0/12
  lldp tlv-select basic-tlv port-descr
  lldp tlv-select basic-tlv sys-name
  lldp tlv-select basic-tlv sys-descr
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.6.1.4.12 x E0
```

Enabling/disabling the sending of ladders for LLDP events

MIB: stdlldp.mib, fslldp.mib

Tables used: lldpPortConfigTable — 1.0.8802.1.1.2.1.1.6,
fsLldpLocPortTable - 1.3.6.1.4.1.2076.158.2.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.2.3.1.3.{ifIndex} i {remTabChg (1), misCfg(2),
remTabChgAndMisCfg(3)}
1.0.8802.1.1.2.1.1.6.1.3.{ifIndex} i {true(1), false(2) }
```

Example of enabling the sending of ladders when changing the remote side table for gi 0/12 interface

```
CLI command:
interface gigabitethernet 0/12
  lldp notification remote-table-chg
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.158.2.3.1.3.12 i 1 \
1.0.8802.1.1.2.1.1.6.1.3.12 i 1
```

Setting the Port Subtype ID for the LLDP frame

MIB: fslldp.mib

Tables used: fsLldpLocPortTable — 1.3.6.1.4.1.2076.158.2.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.2.3.1.1.{ifIndex} i {ifalias(1), portcomp(2), macaddr(3),
nwaddr(4), ifname(5), agentcircuitid(6), local(7)}
```

Example of setting ifName for gi 0/12 interface

```
CLI command:
interface gigabitethernet 0/12
  lldp port-id-subtype if-name
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
```

```
1.3.6.1.4.1.2076.158.2.3.1.1.12 i 5
```

Determining the control address declared on the interface

MIB: fslldp.mib

Tables used: fsLldpLocPortTable — 1.3.6.1.4.1.2076.158.2.3

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.1.7.1.1.1.4.{ip1}.{ip2}.{ip3}.{ip4} x {portlist}
```

Example of determining 192.168.0.20 control address on gi 0/1, gi 0/12 interfaces

```
CLI command:
interface gigabitethernet 0/1
  lldp tlv-select basic-tlv mgmt-addr ipv4 192.168.0.20
  exit
interface gigabitethernet 0/12
  lldp tlv-select basic-tlv mgmt-addr ipv4 192.168.0.20
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.1.7.1.1.1.4.192.168.0.20 x "80 10 00 00 00 00 00"
```

Definition of TLV fields that will be included in the transmitted LLDP packet

MIB: stdot3lldo.mib

Tables used: lldpXdot3PortConfigTable — 1.0.8802.1.1.2.1.5.4623.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.4623.1.1.1.1.1.{ifIndex} x {macPhyConfigStatus(80) |
linkAggregation(20) | maxFrameSize(10)}
```

Example of enabling the macphy-config and link-aggregation fields on gi 0/16 interface

```
CLI command:
interface gigabitethernet 0/16
  lldp tlv-select dot3tlv macphy-config
  lldp tlv-select dot3tlv link-aggregation
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.4623.1.1.1.1.1.16 x A0
```

Enabling/disabling port-vlan-id fields in transmitted LLDP packet

MIB: stdot1lldp.mib

Tables used: lldpXdot1ConfigPortVlanTable — 1.0.8802.1.1.2.1.5.32962.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.32962.1.1.1.1.1.{ifindex} i {true(1), false(2)}
```

Example of including a field in LLDP package on gi 0/16 interface

```
CLI command:
interface gigabitethernet 0/16
  lldp tlv-select dot1tlv port-vlan-id
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.32962.1.1.1.1.1.16 i 1
```

Enabling/disabling the vlan-name field in transmitted LLDP packet

MIB: stdot1lldp.mib

Tables used: lldpXdot1ConfigPortVlanTable — 1.0.8802.1.1.2.1.5.32962.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.32962.1.1.2.1.1.{ifindex}.{vlan-id} i {true(1), false(2)}
```

Example of including a field in LLDP package on gi 0/16 interface for vlan 30

```
CLI command:
interface gigabitethernet 0/16
  lldp tlv-select dot1tlv vlan-name 30
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.32962.1.1.2.1.1.16.30 i 1
```

Enabling/disabling protocol-vlan-id field in transmitted LLDP packet

MIB: stdot1lldp.mib

Tables used: lldpXdot1ConfigProtoVlanTable — 1.0.8802.1.1.2.1.5.32962.1.1.3

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.32962.1.1.3.1.1.{ifindex}.0 i {true(1), false (2)}
```

Example of including a field in LLDP package on gi 0/16 interface

```
CLI command:
interface gigabitethernet 0/16
  lldp tlv-select dot1tlv protocol-vlan-id all
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.32962.1.1.3.1.1.16.0 i 1
```

Enabling/disabling vid-usage-digest field in transmitted LLDP packet

MIB: stdot1lldp.mib

Tables used: lldpV2Xdot1ConfigVidUsageDigestTable — 1.3.111.2.802.1.1.13.1.5.32962.1.1.5

```
snmpset -v2c -c <community> <IP address> \
1.3.111.2.802.1.1.13.1.5.32962.1.1.5.1.1.{ifindex} i {true(1), false (2)}
```

Example of including a field in LLDP package on gi 0/16 interface

```
CLI command:
interface gigabitethernet 0/16
  lldp tlv-select dot1tlv vid-usage-digest
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
```

```
1.3.111.2.802.1.1.13.1.5.32962.1.1.5.1.1.16 i 1
```

Enabling/disabling the mgmt-vid field in transmitted LLDP packet

MIB: stdot1lldp.mib

Tables used: lldpV2Xdot1ConfigManVidTable — 1.3.111.2.802.1.1.13.1.5.32962.1.1.6

```
snmpset -v2c -c <community> <IP address> \
1.3.111.2.802.1.1.13.1.5.32962.1.1.6.1.1.{ifindex} i {true(1), false (2)}
```

Example of including a field in LLDP package on gi 0/16 interface

```
CLI command:
interface gigabitethernet 0/16
  lldp tlv-select dot1tlv mgmt-vid
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.111.2.802.1.1.13.1.5.32962.1.1.6.1.1.16 i 1
```

Show the port-announced LLDP information

MIB: fslldp.mib, stdlldp.mib
Tables used: fsLldpTLV — 1.3.6.1.4.1.2076.158.2,
lldpLocalSystemData — 1.0.8802.1.1.2.1.3,
lldpXdot3LocalData — 1.0.8802.1.1.2.1.5.4623.1.2,
lldpXdot1LocalData — 1.0.8802.1.1.2.1.5.32962.1.2

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.158.2
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.3
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.4623.1.2
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.32962.1.2
```

Example of viewing the information

```
CLI command:
show lldp local

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.158.2
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.3
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.4623.1.2
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.32962.1.2
```

Show information about neighboring devices running the LLDP protocol

MIB: stdlldp.mib

Tables used: lldpRemoteSystemsData — 1.0.8802.1.1.2.1.4
lldpXdot1RemoteData — 1.0.8802.1.1.2.1.5.32962.1.3

lldpXdot3RemoteData — 1.0.8802.1.1.2.1.5.4623.1.3

```
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.4
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.32962.1.3
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.5.4623.1.3
```

Example of viewing the information

```
CLI command:
show lldp local

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.4
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.32962.1.3
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.5.4623.1.3
```

Show LLDP statistics

MIB: stdlldp.mib

Tables used: lldpStatistics — 1.0.8802.1.1.2.1.2

```
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.2.1.2
```

Example of viewing the information

```
CLI command:
show lldp traffic
show lldp statistics

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.0.8802.1.1.2.1.2
```

Configuring Rootguard for individual MSTI

MIB: ELTEX-MES-ISS-MST-MIB.mib

Tables used: eltMesIssMstMstiConfig — 1.3.6.1.4.1.35265.1.139.14.1.1.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.2.1.1.1.{ifindex}.{msti}    i    {true(1)    |
false(2)}
```

Example of enabling Rootguard in msti 10 on gi0/5 interface

```
CLI command:
interface gi 0/5
spanning-tree mst 10 guard root

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.14.1.1.1.1.2.1.1.1.5.10 i 1
```

8.3 *Configuring ARP protocol*

Enabling/disabling sending gratuitous arp messages

MIB: ELTEX-MES-ISS-ARP-MIB.mib

Tables used: eltMesIssArpInterfaceTable — 1.3.6.1.4.1.35265.1.139.26.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.26.1.1.1.1.1.{ifIndex} i {true(1), false(2)}
```

Example of disabling sending gratuitous arp messages on vlan 1 interface

```
CLI command:
interface vlan 1
  no ip arp gratuitous periodic
  exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.26.1.1.1.1.1.89 i 2
```

Setting the interval between sending gratuitous arp messages

MIB: ELTEX-MES-ISS-ARP-MIB.mib

Tables used: eltMesIssArpGlobals — 1.3.6.1.4.1.35265.1.139.26.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.26.1.2.1.0 i {interval}
```

Example of disabling sending gratuitous arp messages on vlan 1 interface

```
CLI command:
arp gratuitous interval 200

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.26.1.2.1.0 i 200
```

8.4 *Configuring loopback-detection*

8.4.1 Global loopback detection settings

MIB: fslbd.mib

Tables used: fsLbdSystems — 1.3.6.1.4.1.29601.2.123.1

Enabling/disabling loopback detection on device

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.123.1.2.0 i {enabled(1) | disabled(2)}
```

Example of enabling loopback detection globally

```
CLI command:
loopback-detection enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
```

```
1.3.6.1.4.1.29601.2.123.1.2.0 i 1
```

Example of disabling loopback-detection globally

```
CLI command:
loopback-detection disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.1.2.0 i 2
```

Changing the interval for sending loopback-detection messages

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.123.1.3.0 i {interval}
```

Example of setting the loopback-detection message sending interval of 5 seconds

```
CLI command:
loopback-detection interval 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.1.3.0 i 5
```

Changing the destination address of loopback-detection messages

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.123.1.4.0 x {address}
```

Example of setting up a destination address for loopback-detection messages ff:ff:ff:ff:ff:01

```
CLI command:
loopback-detection destination-address ff:ff:ff:ff:ff:01

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.1.4.0 x "ff ff ff ff ff 01"
```

8.4.2 Loopback detection settings on interfaces

MIB: fslbd.mib

Tables used: fsLbdSystems — 1.3.6.1.4.1.29601.2.123.1

Enabling/disabling loopback detection on interface

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.123.2.1.1.7.{ifindex} i {create and go(4)| destroy(6)}
```

Example of enabling loopback detection on gi0/11 interface

```
CLI command:
Interface gi 0/11
loopback-detection enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.2.1.1.7.11 i 4
```

Example of disabling loopback-detection on gi0/11 interface

```
CLI command:
Interface gi 0/11
loopback-detection disable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.2.1.1.7.11 i 6
```

8.4.3 Viewing loopback-detection statistics

MIB: fslbd.mib

Tables used: fsLbdSystems — 1.3.6.1.4.1.29601.2.123.1

Viewing loopback-detection statistics on the interface

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.123.2.1.1.{tx-count(3) | rx-count(4)|
state(5)|pktTxFromPort(6)}.{ifindex}
```

Example of viewing loopback-detection status on gi0/11 interface

```
CLI command:
show loopback-detection gi 0/11

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.2.1.1.5.11
```

Clearing loopback-detection statistics on the interface

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.123.2.1.1.8.{ifindex} i 1
```

Example of clearing loopback-detection statistics on gi0/11 interface

```
CLI command:
clear loopback-detection statistics gi 0/11

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.123.2.1.1.8.11 i 1
```

8.5 *Configuring ERPS Protocol*

Enabling ERPS module

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsCtxtSytemControl — 1.3.6.1.4.1.29601.2.40.1.1.1.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.1.1.1.3 i {start(1) | shutdown(2)}
```

Example of enabling ERPS module

```
CLI command:
no shutdown aps ring
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.1.1.1.3.0 i 1
```

Enabling the operation of ERPS protocol

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsCtxtModuleStatus — 1.3.6.1.4.1.29601.2.40.1.1.1.4.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.1.1.1.4.0 i {enable(1) | disable(2)}
```

Example of allowing the operation of ERPS protocol

```
CLI command:
aps ring enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.1.1.1.4.0 i 1
```

Disabling ERPS ladders

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsCtxtTrapStatus — 1.3.6.1.4.1.29601.2.40.1.1.1.6.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.1.1.1.6.0 i {enable(1) | disable(2)}
```

Example of ladders disabling

```
CLI command:
no aps ring notification enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.1.1.1.6.0 i 2
```

Statistics clearing

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsCtxtClearRingStats — 1.3.6.1.4.1.29601.2.40.1.1.1.7.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.1.1.1.7.0 i {true(1) | false(2)}
```

Example of counters cleaning

```
CLI command:
clear aps ring statistics

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.1.1.1.7.0 i 1
```

Changing the vlan grouping manager

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsCtxtVlanGroupManager — 1.3.6.1.4.1.29601.2.40.1.1.1.9.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.1.1.1.9.0 i {mstp(1) | erps(2)}
```

Example of changing a grouping manager to an erps

```
CLI command:
aps ring vlan-group-manager erps

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.1.1.1.9.0 i 2
```

Adding vlan to vlan group

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsVlanGroupRowStatus — 1.3.6.1.4.1.29601.2.40.1.2.1.3.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.1.2.1.3.0.{vlan-id}.{vlan-group} i {create and go(4) |
destroy(6)}
```

Example of adding vlan 2 to a group

```
CLI command:
aps ring map vlan-group 1 add 2

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.1.2.1.3.0.2.1 i 4
```

Creating a ring

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingRowStatus — 1.3.6.1.4.1.29601.2.40.2.1.1.15.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.1.1.15.0.{ring number} i {create and wait(5)}
```

Example of creating a ring with ID 1

```
CLI command:
aps ring group 1

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.1.1.15.0.1 i 5
```

Assigning west/east ports and managing r-aps vlan

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingPort1 — 1.3.6.1.4.1.29601.2.40.2.1.1.4.0,

fsErpsRingPort2 — 1.3.6.1.4.1.29601.2.40.2.1.1.5.0, fsErpsRingVlanId — 1.3.6.1.4.1.29601.2.40.2.1.1.2.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.1.1.4.0.{ring number} i {ifindex} \
1.3.6.1.4.1.29601.2.40.2.1.1.5.0.{ring number} i {ifindex} \
1.3.6.1.4.1.29601.2.40.2.1.1.2.0.{ring number} i {vlan-id}
```

Assigning west/east ports and r-aps vlan

```
CLI command:
aps working gigabitethernet 0/1 gigabitethernet 0/2 vlan 5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.1.1.4.0.1 i 1 \
1.3.6.1.4.1.29601.2.40.2.1.1.5.0.1 i 2 \
1.3.6.1.4.1.29601.2.40.2.1.1.2.0.1 i 5
```

Configuring the Maintenance domain (MD) level

MIB: ELTEX-MES-ISS-ERPS-MIB

Tables used:
eltMesIssErpsRingIfmRowStatus — 1.3.6.1.4.1.35265.1.139.29.1.1.2.1.2.0,
eltMesIssErpsRingIfmMdLevel — 1.3.6.1.4.1.35265.1.139.29.1.1.2.1.1.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.29.1.1.2.1.2.0.{ring number} i {create and go(5) |
destroy(6)} \
1.3.6.1.4.1.35265.1.139.29.1.1.2.1.1.0.{ring number} u {level (0-7)} \
1.3.6.1.4.1.35265.1.139.29.1.1.2.1.2.0.{ring number} i {active(1)}
```

Example of setting MD 7 level

```
CLI command:
aps working level 7

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.29.1.1.2.1.2.0.1 i 5 \
1.3.6.1.4.1.35265.1.139.29.1.1.2.1.1.0.1 u 7 \
1.3.6.1.4.1.35265.1.139.29.1.1.2.1.2.0.1 i 1
```

Binding a vlan group to a ring

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingProtectedVlanGroupId — 1.3.6.1.4.1.29601.2.40.2.1.1.17.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.1.1.17.0.{ring number} i {vlan-group}
```

Example of binding 3 vlan groups to a ring

```
CLI command:
aps map vlan-group 3

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.1.1.17.0.1 i 3
```

Changing the protection-type

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingProtectionType — 1.3.6.1.4.1.29601.2.40.2.1.1.18.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.1.1.18.0.{ring number} i {port-based(1) | service-
based(2)}
```

Example of changing protection-type to service-based

```
CLI command:
aps protection-type service-based

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.1.1.18.0.1 i 2
```

Specifying the neighbor port

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingRplNeighbourPort — 1.3.6.1.4.1.29601.2.40.2.1.1.20.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.1.1.20.0.{ring number} i {ifindex}
```

Example of setting up rpl neighbor

```
CLI command:
aps neighbor gigabitethernet 0/21

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.1.1.20.0.1 i 21
```

Specifying the rpl-owner

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingRplPort — 1.3.6.1.4.1.29601.2.40.2.1.1.6.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.1.1.6.0.{ring number} i {ifindex}
```

Example of configuring rpl neighbor

```
CLI command:
aps owner tengigabitethernet 0/1

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.1.1.6.0.1 i 25
```

Configuring timers

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingConfigHoldOffTime — 1.3.6.1.4.1.29601.2.40.2.3.1.1, fsErpsRingConfigGuardTime — 1.3.6.1.4.1.29601.2.40.2.3.1.2,
fsErpsRingConfigWTRTime — 1.3.6.1.4.1.29601.2.40.2.3.1.3,
fsErpsRingConfigPeriodicTime — 1.3.6.1.4.1.29601.2.40.2.3.1.4,
fsErpsRingConfigWTBTime — 1.3.6.1.4.1.29601.2.40.2.3.1.9

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.3.1.{holdoff(1)} | guard(2) | wtr(3) | periodic(4) |
wtb(9)}.0.{ring number} i {timer (ms)}
```

Example of configuring wtb timer

```
CLI command:
aps timers wtb 80 seconds

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.3.1.9.0.1 u 80000
```

Force/manual switch port lock

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingConfigSwitchPort — 1.3.6.1.4.1.29601.2.40.2.3.1.5.0, fsErpsRingConfigSwitchCmd — 1.3.6.1.4.1.29601.2.40.2.3.1.6.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.3.1.5.0.{ring number} i {ifindex} \
1.3.6.1.4.1.29601.2.40.2.3.1.6.0.{ring number} i {none(1) | forceswitch(2) |
manualswitch(3)}
```

Example of configuring force switch mode

```
CLI command:
aps force te0/1

SNMP command:
snmpset -v2c -c private 192.168.1.30 1.3.6.1.4.1.29601.2.40.2.3.1.5.0.1 i 25
snmpset -v2c -c private 192.168.1.30 1.3.6.1.4.1.29601.2.40.2.3.1.6.0.1 i 2
```

Clearing the force/manual switch status

MIB: ARICENT-ERPS-MIB

Tables used: fsErpsRingConfigClear — 1.3.6.1.4.1.29601.2.40.2.3.1.10.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.40.2.3.1.10.0.{ring number} i {none(1) | clear(2)}
```

Example of clearing the force switch state

```
CLI command:
aps clear

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.40.2.3.1.10.0.1 i 2
```

9 CONFIGURING IPV4 ADDRESSING

Viewing indexl3 — vlan compliance

MIB: fscfa.mib

Tables used: ifmainEntry — 1.3.6.1.4.1.2076.27.1.4.1

```
snmpwalk -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.21
```

Example of viewing indexl3 — vlan compliance

```
SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.21
```

Shutdown/no shutdown interface vlan

MIB: fscfa.mib

Tables used: ifmainEntry — 1.3.6.1.4.1.2076.27.1.4.1

```
snmpset -v2c -c <community>  <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.4.{index-l3} i {up(1), down(2)}
```

Example of enabling interface vlan

```
CLI command:
no shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.4.74 i 1
```

Creating an interface vlan

MIB: fscfa.mib, IF-MIB

Tables used: ifmainEntry — 1.3.6.1.4.1.2076.27.1.4.1
ifXEntry — 1.3.6.1.2.1.31.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.8.{index-l3} i {Active(1), CreatAndWaite(5),
Destroy(6)} \
1.3.6.1.2.1.31.1.1.1.18.{index-l3} s vlan{vid} \
1.3.6.1.4.1.2076.27.1.4.1.2.{index-l3} i 136 \
1.3.6.1.4.1.2076.27.1.4.1.8.{index-l3} i {Active(1), CreatAndWaite(5),
Destroy(6)}
```

Example of creating L3 Vlan 10

```
CLI command:
interface vlan 10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.8.74 i 5 \
1.3.6.1.2.1.31.1.1.1.18.74 s vlan10 \
1.3.6.1.4.1.2076.27.1.4.1.2.74 i 136 \
1.3.6.1.4.1.2076.27.1.4.1.8.74 i 1
```

Creating IP address on interface vlan:

MIB: fscfa.mib

Tables used: ifipentry — 1.3.6.1.4.1.2076.27.1.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.5.1.2.{index-l3} a {ip address (DEC)} \
1.3.6.1.4.1.2076.27.1.5.1.3.{index-l3} a {netmask}
```

Example of configuring 192.168.10.30/24 address on vlan 30

```
CLI command:
interface vlan 30
ip address 192.168.10.30 255.255.255.0

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.5.1.2.74 a 192.168.10.30 \
1.3.6.1.4.1.2076.27.1.5.1.3.74 a 255.255.255.0
```

Viewing the IP address on interface vlan

MIB: fscfa.mib

Tables used: ifipentry — 1.3.6.1.4.1.2076.27.1.5.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.5.1.2
```

Example of configuring 192.168.10.30/24 address on vlan 30

```
CLI command:
show ip interfaces

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.5.1.2
```

10 CONFIGURING IPV6 ADDRESSING

Enabling/disabling IPv6 addressing on interface vlan

MIB: fsipv6.mib

Tables used: fsipv6IF — 1.3.6.1.4.1.2076.28.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.28.1.2.1.1.6.{index-l3} i {enable(1), disable(2)}
```

Example of enabling IPv6 addressing on vlan interface

```
CLI command:
interface vlan 2
ipv6 enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.28.1.2.1.1.6.74 i 1
```

Creating IPv6 address on interface vlan

MIB: fsipv6.mib

Tables used: fsipv6Addr — 1.3.6.1.4.1.2076.28.1.2.4.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.28.1.2.4.1.4.{index-l3}.{ each byte is separated by a decimal
separator}.{prefix} i {Active(1), Create and wait(5), Destroy(6)} \
1.3.6.1.4.1.2076.28.1.2.4.1.5.{index-l3}.{ each byte is separated by a decimal
separator}.{prefix} i {global unicast(1), anycast(2), linklocal(3)} \
1.3.6.1.4.1.2076.28.1.2.4.1.4.{index-l3}.{ each byte is separated by a decimal
separator}.{prefix} i {Active(1), Create and wait(5), Destroy(6)}
```

Example of configuring 2001:db08::100/64 interface vlan address

```
CLI command:
ipv6 address 2001:db08::100/64 unicast

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.28.1.2.4.1.4.74.32.1.219.8.0.0.0.0.0.0.0.0.0.1.0.64 i 5 \
1.3.6.1.4.1.2076.28.1.2.4.1.5.74.32.1.219.8.0.0.0.0.0.0.0.0.0.1.0.64 i 1 \
1.3.6.1.4.1.2076.28.1.2.4.1.4.74.32.1.219.8.0.0.0.0.0.0.0.0.0.1.0.64 i 1 \
```

11 GROUP ADDRESSING

11.1 *Multicast addressing rules*

Configuring multicast-tv vlan (MVR)

MIB: ELTEX-MES-ISS-VLAN-MIB.mib

Tables used: eltMesIssVlanPortTable — 1.3.6.1.4.1.35265.1.139.3.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.6.{ifIndex} u {vlan-id} \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.7.{ifindex} i {tagged(1), untagged(2)}
```

Example of configuring multicast-tv vlan 622 on GigabitEthernet 0/2 interface in tagged mode

```
CLI command:
Interface GigabitEthernet 0/2
switchport multicast-tv vlan 622 tagged

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.6.2 u 622 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.7.2 i 1
```

Configuring the group filtering function

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.16.0.1 i  {enabled(1), disabled(2)}
```

Example of enabling group filtering function

```
CLI command:
ip igmp snooping multicast-vlan enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.16.0.1 i  1
```

Configuring multicast traffic processing mode

MIB: fssnp.mib

Tables used: fsSnoopInstanceGlobalTable — 1.3.6.1.4.1.2076.105.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.1.1.2.0 i {ipbased(1), macbased(2)}
```

Example of configuring multicast traffic processing mode by IP address

```
CLI command:
snooping multicast-forwarding-mode ip

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
```

```
1.3.6.1.4.1.2076.105.2.1.1.2.0 i 1
```

Configuring the configuration level of the vacation processing mechanisms (VLAN-based or port-based configuration)

MIB: fssnp.mib

Tables used: fsSnoopInstanceGlobalTable — 1.3.6.1.4.1.2076.105.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.1.1.4.0 i {vlan-based(1), port-based(2)}
```

Example of configuring port-based configuration processing

```
CLI command:
snooping leave-process config-level port

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.1.1.4.0 i 2
```

Configuring ports where received reports are processed

MIB: fssnp.mib

Tables used: fsSnoopInstanceGlobalTable — 1.3.6.1.4.1.2076.105.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.1.1.6.0 i {non-router-ports(1), all-ports(2)}
```

Example of configuring the processing of received reports on all ports

```
CLI command:
snooping report-process config-level all-Ports

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.1.1.6.0 i 2
```

11.2 *Internet Group Management Protocol (IGMP Snooping)*

Enabling/disabling IGMP/MLD Snooping module

MIB: fssnp.mib

Tables used: fsSnoopInstanceGlobalTable — 1.3.6.1.4.1.2076.105.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.1.1.3.0  i {start(1), shutdown(2)}
```

Example of disabling IGMP/MLD Snooping module

```
CLI command:
shutdown snooping

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.1.1.3.0 i 2
```

Enabling/disabling IGMP Snooping function usage

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.3.0.1 i {enabled(1), disabled(2)}
```

Example of permission IGMP Snooping function usage

```
CLI command:
ip igmp snooping

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.3.0.1 i 1
```

Allowing/prohibiting IGMP Snooping usage by the switch for VLAN interface

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan_id}.1         i         {notInService(2),
createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.4.0.{vlan_id}.1 i {enabled(1), disabled(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan_id}.1 i {active(1)}
```

Example of allowing IGMP Snooping function usage for vlan 3 interface

```
CLI command:
ip igmp snooping vlan 3

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.4.0.3.1 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 1
```

Example of prohibiting IGMP Snooping function usage for vlan 3 interface

```
CLI command:
no ip igmp snooping vlan 3

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.4.0.3.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 1
```

Defining the port to which the multicast router is connected for a given VLAN

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {notInService(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.11.0.{vlan-id}.1 x {portlist}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {active(1)}
```

Example of defining gi 0/1, gi 0/7 ports as ports to which the multicast router is connected for vlan 3 interface

```
CLI command:
vlan 3
ip igmp snooping mrouter gigabitethernet 0/1,0/7
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.11.0.3.1 x 0x8200
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 1
```

Enabling/disabling IGMP Snooping Immediate-Leave process on VLAN interface

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {notInService(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.7.0.{vlan-id}.1 i {enabled(1), disabled(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {active(1)}
```

Example of enabling IGMP Snooping Immediate-Leave process on vlan 3 interface

```
CLI command:
vlan 3
ip igmp snooping immediate-leave
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.7.0.3.1 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 1
```

Enabling/disabling the switch substitution of the source address for the specified IP address in IGMP-report packets in the specified VLAN

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopVlanFilterTable — 1.3.6.1.4.1.35265.1.139.8.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.2.1.1.3.0.{vlan-id}.1 x {InetAddress}
```

Example of enabling the switch to replace the source address with 192.168.0.1 address in IGMP-report packets in vlan 3

```
CLI command:
vlan 3
ip igmp snooping replace source-ip 192.168.10.1
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.2.1.1.3.0.7.1 x "0xC0 A8 0A 01"
```

Setting the time interval in seconds after which the device sends a group-query to the mrouter

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.9.0.1 i {2-5}
```

Example of setting 5 seconds interval

```
CLI command:
ip igmp snooping group-query-interval 5

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.9.0.1 i 5
```

Setting the time interval after which the mrouter is deleted if it does not receive IGMP reports

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.6.0.1 i {130-1225}
```

Example of setting 200 seconds interval

```
CLI command:
ip igmp snooping port-purge-interval 200

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.6.0.1 i 200
```

Enabling/disabling query sending to all ports

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.18.0.1 i {allports(1), nonrtrports(2)}
```

Example of enabling query sending to all ports

```
CLI command:
ip igmp snooping query-forward all-ports

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.18.0.1 i 1
```

Setting the interval for which IGMPv2 reports for the same group will not be redirected

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.7.0.1 i {1-25}
```

Example of setting 10 seconds interval

```
CLI command:
ip igmp snooping report-suppression-interval 10

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.7.0.1 i 10
```

Setting the maximum number of queries related to the group sent to mrouter

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.8.0.1 i {1-5}
```

Example of setting the maximum number of query in 5 packets

```
CLI command:
ip igmp snooping retry-count 5

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.8.0.1 i 5
```

Allowing/prohibiting the transmission of query packets on the device

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
```

```
1.3.6.1.4.1.2076.105.2.2.1.13.0.1 i {enabled(1), disabled(2)}
```

Example of allowing the transmission of query packets on a device

```
CLI command:
ip igmp snooping send-query enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.13.0.1 i 1
```

Allowing/prohibiting IGMP filtering functions usage on interfaces

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.15.0.1 i {enabled(1), disabled(2)}
```

Example of allowing IGMP filtering functions usage on interfaces

```
CLI command:
ip igmp snooping filter

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.15.0.1 i 1
```

Setting 802.1p value for IGMP packets to be used by the switch on VLAN interface

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopVlanFilterTable

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.2.1.1.1.0.{vlan-id}.1 i {cos(0-7), disabled(255)}
```

Example of setting 802.1p value to 5 on vlan 3 interface

```
CLI command:
vlan 3
ip igmp snooping cos 5
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.2.1.1.1.0.3.1 i 5
```

Installing IGMP protocol version on VLAN interface

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.6.0.{vlan-id}.1 i {v1(1), v2(2), v3(3)}
```

Example of installing version v2 on vlan 3 interface

```
CLI command:
vlan 3
```

```
ip igmp snooping version v2
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.6.0.3.1 i 2
```

Setting the maximum response time for a request

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterXTable — 1.3.6.1.4.1.2076.105.3.8

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.8.1.8.0.2.1 {vlan-id}.1 i {0..65025)
```

Example of setting the maximum response time to a request of 4 seconds on vlan 3 interface

```
CLI command:
vlan 3
ip igmp snooping max-response-code 40
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.8.1.8.0.3.1 i 40
```

Configure the IGMP version for the router port for VLAN

MIB: fssnp.mib

Tables used: fsSnoopRtrPortTable — 1.3.6.1.4.1.2076.105.5.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.3.1.5.{ifIndex}.{vlan-id}.1 i {v1(1), v2(2), v3(3)}
```

Example of configuring v2 version for gi 0/2 port of vlan 3 interface

```
CLI command:
vlan 3
ip igmp snooping mrouter-port gigabitethernet 0/2 version v2
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.3.1.5.2.3.1 i 2
```

Enabling/disabling support for issuing igmp-query requests by the switch in VLAN

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterEntry — 1.3.6.1.4.1.2076.105.3.4.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {notInService(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.9.0.{vlan-id}.1 i {enabled(1), disabled(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {active(1)
```

Example of enabling support for issuing igmp-query requests by a switch in vlan 3

```
CLI command:
vlan 3
  ip igmp snooping querier
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.9.0.3.1 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 1
```

Setting a timeout by which the system sends basic requests to all members of the multicast group to check their activity

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterEntry — 1.3.6.1.4.1.2076.105.3.4.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {notInService(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.10.0.{vlan-id}.1 i (15-150)
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i {active(1)}
```

Example of setting a timeout for 100 seconds

```
CLI command:
vlan 3
  ip igmp snooping query-interval 100
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.10.0.3.1 i 100
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.1 i 1
```

Enabling/disabling unregistered traffic filtering mode in VLAN

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopVlanFilterTable

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.2.1.1.2.0.{vlan_id}.1 i {enable (1), disable (2)}
```

Example of enabling unregistered traffic filtering mode in vlan 3

```
CLI command:
vlan 3
  ip igmp snooping sparse-mode enable
 exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.2.1.1.2.0.3.1 i 1
```

Creating/deleting a static entry in the multicast table

MIB: fssnp.mib

Tables used: fsSnoopVlanStaticMcastGrpTable — 1.3.6.1.4.1.2076.105.3.9

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.9.1.7.0.{vlan_id}.1.4.0.0.0.0.4.{IP-address}i
{createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.9.1.6.0.{vlan_id}.1.4.0.0.0.0.4. {IP-address} x
{portlist}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.9.1.7.0.{vlan_id}.1.4.0.0.0.0.4.{IP-address} i
{active(1)}
```

Example of creating a static record for group 233.3.2.1 in vlan 3

```
CLI command:
vlan 3
  ip igmp snooping static-group 233.3.2.1 ports gi 0/1
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.9.1.7.0.3.1.4.0.0.0.0.4.233.3.2.1 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.9.1.6.0.3.1.4.0.0.0.0.4.233.3.2.1 x 80
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.9.1.7.0.3.1.4.0.0.0.0.4.233.3.2.1 i
```

Example of deleting a static record for group 233.3.2.1 in vlan 3

```
CLI command:
vlan 3
  no ip igmp snooping static-group 233.3.2.1 ports gi 0/1
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.9.1.7.0.3.1.4.0.0.0.0.4.233.3.2.1 i 6
```

Configuring multicast-tv vlan (MVR)

MIB: ELTEX-MES-ISS-VLAN-MIB.mib

Tables used: eltMesIssVlanPortTable — 1.3.6.1.4.1.35265.1.139.3.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.6.{ifIndex} u {vlan-id} \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.7.{ifindex} i {tagged(1), untagged(2)}
```

Example of configuring multicast-tv vlan 622 on GigabitEthernet 0/2 interface in tagged mode

```
CLI command:
Interface GigabitEthernet 0/2
switchport multicast-tv vlan 622 tagged

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.6.2 u 622 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.7.2 i 1
```

Allowing IGMP snooping to be configured on the interface

MIB: fssnp.mib

Tables used: fsSnoopPortTable — 1.3.6.1.4.1.2076.105.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.1.1.11.{ifIndex}.1 i {createAndGo(4)}
```

Example of configuring gi 0/2 interface

```
There is no CLI command, it will be executed at any first interface
configuration

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.1.1.11.2.1 i 4
```

Removing all IGMP snooping settings on the interface

MIB: fssnp.mib

Tables used: fsSnoopPortTable — 1.3.6.1.4.1.2076.105.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.1.1.11.{ifindex}.1 i {destroy(6)}
```

Example of deleting settings on gi 0/2 interface

```
No command.

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.1.1.11.2.1 i 6
```

Setting a limit on the number of groups on the interface

MIB: fssnp.mib

Tables used: fsSnoopPortTable — 1.3.6.1.4.1.2076.105.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.1.1.5.2.1 i {none(0), groups(1), channels(2)} \
1.3.6.1.4.1.2076.105.5.1.1.6.2.1 u {limit}
```

Example of setting a limit of 13 groups on gi 0/2 interface

```
CLI command:
interface gigabitethernet 0/2
  ip igmp snooping limit groups 13
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.1.1.5.2.1 i 1 \
1.3.6.1.4.1.2076.105.5.1.1.6.2.1 u 13
```

Configuring filtering by filter-id on the interface

MIB: fssnp.mib

Tables used: fsSnoopPortTable — 1.3.6.1.4.1.2076.105.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.1.1.7.{ifIndex}.1 u {filter-id}
```

Example of setting up a filter with index 345 on gi 0/2 interface

```
CLI command:
interface gigabitethernet 0/2
  ip igmp snooping filter-profileId 345
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.1.1.7.2.1 u 345
```

Configuring the leave mode on interface

MIB: fssnp.mib

Tables used: fsSnoopPortTable — 1.3.6.1.4.1.2076.105.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.1.1.3.{ifIndex}.1 i {explicithosttrack(1), fastleave(2),
normalleave(3)}
```

Example of configuring the fast-leave mode on gi 0/2 interface

```
CLI command:
interface gigabitethernet 0/2
  ip igmp snooping leavemode fastLeave
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.1.1.3.2.1 i 2
```

Viewing information about multicast routers in a specified VLAN group

MIB: fssnp.mib
Tables used: fsSnoopVlanRouterTable — 1.3.6.1.4.1.2076.105.3.3

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.3.1.5.0.{vlan-id}.1
```

Example of viewing information about multicast routers in vlan 3

```
CLI command:
show ip igmp snooping mrouter vlan 3

SNMP command:
snmpget -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.3.1.5.0.3.1
```

Viewing information about multicast groups participating in a group newsletter

MIB: fssnmp.mib

Tables used: fsSnoopVlanMcastGroupTable — 1.3.6.1.4.1.2076.105.3.5

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.5.1.7.0.{vlan-id}.1
```

Example of viewing information about multicast groups in vlan 3

```
CLI command:
show ip igmp snooping groups vlan 3

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.5.1.7.0.3.1
```

Enabling/disabling Query drop on interface

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterXEntry — 1.3.6.1.4.1.2076.105.3.8.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.8.1.10.0.{vlan}.1 x {portlist}
```

Example of enabling Query drop on gi 0/2, gi 0/6 interfaces and po 1 for vlan interface 2

```
CLI command:
vlan 2
ip igmp snooping blocked-router gi 0/2,0/16 po 1
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.8.1.10.0.2.1 x 0x500100000000000080
```

11.3 *MLD Snooping is a protocol for monitoring multicast traffic in IPv6*

Enabling/disabling MLD Snooping

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.3.0.2 i {enabled(1), disabled(2)}
```

Example of enabling MLD Snooping

```
CLI command:
ipv6 mld snooping

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.3.0.2 i 1
```

Allowing/prohibiting MLD Snooping usage by the switch for VLAN interface

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan_id}.2 i {notInService(2),
createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.4.0.{vlan_id}.2 i {enabled(1), disabled(2)}
```

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan_id}.2 i {active(1)}
```

Example of allowing IMLD Snooping function usage for vlan 3 interface

```
CLI command:
vlan 3
  ipv6 mld snooping
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.4.0.3.2 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 1
```

Example of prohibiting IMLD Snooping function usage for vlan 3 interface

```
CLI command:
vlan 3
  no ipv6 mld snooping
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.4.0.3.2 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 1
```

Example of prohibiting all settings of the IGMP Snooping function usage and delete for vlan 3 interface

```
CLI command:
vlan 3
  no ipv6 mld snooping
  #TODO
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 6
```

Setting the timeout by which the system sends the main query requests

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.9.0.2 i {2-5}
```

Example of setting 5 seconds interval

```
CLI command:
ipv6 mld snooping group-query-interval 5

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.9.0.2 i 5
```

Setting the timeout for clearing the port of MLD tracking router, after which the port is deleted if no controlpackets are received by MLD router

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.5.0.2 i {60-600}
```

Example of setting the port cleanup timeout to 150 seconds

```
CLI command:
ipv6 mld snooping mrouter-time-out 150

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.5.0.2 i 150
```

Setting the cleanup interval of MLD tracking port, after which the port is deleted if MLD reports are not received

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.6.0.2 i {130-225}
```

Example of setting the port cleanup timeout to 200 seconds

```
CLI command:
ipv6 mld snooping port-purge-interval 200

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.6.0.2 i 200
```

Enabling/disabling proxy-report function on the device

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.4.0.2 i {enabled(1), disabled(2)}
```

Example of setting 200 seconds interval

```
CLI command:
ipv6 mld snooping proxy-reporting

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.4.0.2 i 1
```

Enabling/disabling query sending to all ports

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.18.0.2 i {all-ports(1), non-rtr-ports(2)}
```

Example of enabling query sending to all ports

```
CLI command:
ipv6 mld snooping query-forward all-ports

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.18.0.2 i 1
```

Setting a time interval for prohibiting the transmission of MLDvSnooping-reports, during which MLDv1 report messages will not be redirected to router ports for the same group

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.7.0.2 i {1-25}
```

Example of setting 10 seconds interval

```
CLI command:
ipv6 mld snooping report-suppression-interval 10

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.7.0.2 i 10
```

Setting the maximum number of group requests sent to the port when receiving the MLDv1 message

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.8.0.2 i {1-5}
```

Example of setting the maximum number of requests in 5 packets

```
CLI command:
ipv6 mld snooping retry-count 5

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.8.0.2 i 5
```

Enabling the function of transmitting MLD requests when changing the topology

MIB: fssnp.mib

Tables used: fsSnoopInstanceConfigTable — 1.3.6.1.4.1.2076.105.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.2.2.1.13.0.2 i {enabled(1), disabled(2)}
```

Example of allowing the transmission of query packets on a device

```
CLI command:
ipv6 mld snooping send-query enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.2.2.1.13.0.2 i 1
```

Binding MLD tracking router port to the VLAN

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.2 i {notInService(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.11.0.{vlan-id}.2 x {portlist}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.2 i {active(1)}
```

Example of defining gi 0/1, gi 0/7 ports as ports to which the multicast router is connected for vlan 3 interface

```
CLI command:
vlan 3
  ipv6 mld snooping mrouter gigabitethernet 0/1,0/7
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.11.0.3.2 x 0x8200
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.3.2 i 1
```

Configuring MLD tracking version in VLAN

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.6.0.{vlan-id}.2 i {v1(1), v2(2), v3(3)}
```

Example of installing version v1 on vlan 3 interface

```
CLI command:
vlan 3
ip igmp snooping version v1
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.6.0.3.2 i 1
```

11.4 *Multicast traffic restriction functions*

Creating multicast profile

MIB: fstac.mib

Tables used: fsTacMcastProfileTable — 1.3.6.1.4.1.29601.2.8.2.1, fsTacMcastPrfFilterTable — 1.3.6.1.4.1.29601.2.8.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.8.2.1.1.5.{profile-id}.1 i {createAndWait(5)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.8.2.1.1.3 i {permit(1), deny (2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.8.2.2.1.6.{profile-id}.1.4.{start-ip1}.{start-ip2}.{start-
ip3}.{start-ip4}.4.{end-ip1}.{end-ip2}.{end-ip3}.{end-ip4}.4.0.0.0.0.4.0.0.0.0
i {active(1)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.8.2.1.1.5.{profile-id}.1 i {activate{1}}
```

Example of profile configuring with 1234 index

```
CLI command:
ip mcast profile 1234
  permit
  range 233.3.2.1 233.3.2.2
  profile active
 exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.8.2.1.1.5.1234.1 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.8.2.1.1.3.1234.1 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.8.2.2.1.6.1234.1.4.233.3.2.1.4.233.3.2.2.4.0.0.0.0.4.0.0.0.
0 i 4
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.8.2.1.1.5.1234.1 i 1
```

Deleting multicast profile

MIB: fstac.mib

Tables used: fsTacMcastProfileTable — 1.3.6.1.4.1.29601.2.8.2.1, fsTacMcastPrfFilterTable — 1.3.6.1.4.1.29601.2.8.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.8.2.1.1.5.{profile-id}.1 i {destroy(6)}
```

Example of profile deleting with 1234 index

```
CLI command:
no ip mcast profile 1234

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.8.2.1.1.5.1234.1 i 6
```

Binding multicast profile to vlan

MIB: fssnp.mib

Tables used: fsSnoopVlanFilterXTable — 1.3.6.1.4.1.2076.105.3.8, fsSnoopVlanFilterTable — 1.3.6.1.4.1.2076.105.3.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i 2
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.8.1.6.0.{vlan-id}.1 u {profile_index}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.3.4.1.12.0.{vlan-id}.1 i 1
```

Example of profile binding with 1234 index to vlan 2

```
CLI command:
vlan 7
ip igmp snooping multicast-vlan profile 1234
exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.7.1 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.8.1.6.0.7.1 u 1234
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.3.4.1.12.0.7.1 i 1
```

11.5 *IGMP join authorization using the RADIUS server*

Enabling IGMP authorization globally

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopConfigs — 1.3.6.1.4.1.35265.1.139.8.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.4.1.0 i {true(1) | false(2)}
```

Example of enabling IGMP authorization globally

```
CLI command:
snooping authentication

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.4.1.0 i 1
```

Changing the cache table timeout

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopConfigs — 1.3.6.1.4.1.35265.1.139.8.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.4.2.0 i {timeout}
```

Example of setting 1000-second timeout for cache table

```
CLI command:
snooping authentication cache-time 1000

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.4.2.0 i 1000
```

Enabling IGMP authorization on interface

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopAuthPortEntry — 1.3.6.1.4.1.35265.1.139.8.1.3.2.1, fsSnoopPortEntry — 1.3.6.1.4.1.2076.105.5.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.105.5.1.1.11.{ifindex}.1 i {create and go(4) | destroy(6)} \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.3.{ifindex}.1 i {none(1) | radius(2)}
```

Example of enabling IGMP authorization on gi0/2 interface

```
CLI command:
interface gi0/2
ip igmp snooping authentication radius

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.105.5.1.1.11.2.1 i 4 \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.3.2.1 i 2
```

Enabling required parameter on interface

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopAuthPortEntry — 1.3.6.1.4.1.35265.1.139.8.1.3.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.4.{ifindex}.1 i {true(1)| false(2)}
```

Example of enabling required parameter on gi0/2 interface

```
CLI command:
interface gi0/2
ip igmp snooping authentication radius required

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.4.2.1 i 1
```

Enabling forward-first parameter on interface

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopAuthPortEntry — 1.3.6.1.4.1.35265.1.139.8.1.3.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.5.{ifindex}.1 i {true(1)| false(2)}
```

Example of enabling required parameter on gi0/2 interface

```
CLI command:
interface gi0/2
ip igmp snooping authentication forward-first

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.5.2.1 i 1
```

Binding exception profiles to interface

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopAuthPortEntry — 1.3.6.1.4.1.35265.1.139.8.1.3.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.6.{ifindex}.1 i {profile-id}
```

Example of binding mcast-profile 1 to gi0/2 interface

```
CLI command:
interface gi0/2
ip igmp snooping authentication exception mcast profile 1

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.3.2.1.6.2.1 u 1
```

Profiles are created in the section "Multicast traffic restriction functions".

Viewing the cache table

MIB: ELTEX-MES-ISS-SNOOP-MIB.mib

Tables used: eltMesIssSnoopAuthCacheTable — 1.3.6.1.4.1.35265.1.139.8.1.3.3

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.8.1.3.3
```

Example of viewing IGMP authorization cache table

```
CLI command:
show ip igmp snooping authentication cache

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.8.1.3.3
```

11.6 *IGMP proxy configuration*

Enabling IGMP module

MIB: fsigmp.mib

Tables used: fsIgmpGlobalStatus — 1.3.6.1.4.1.2076.36.1.1

```
snmpset -v2c -c <community> <IP address> \
```

```
1.3.6.1.4.1.2076.36.1.1.0 i {enabled(1) | disabled(2)}
```

Example of enabling IGMP module globally

```
CLI command:
set ip igmp enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.36.1.1.0 i 1
```

Enabling IGMP proxy function globally

MIB: fsigp.mib

Tables used: fsigmpproxyStatus — 1.3.6.1.4.1.2076.124.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.124.1.1.0 i {enabled(1) | disabled(2)}
```

Example of enabling IGMP proxy function globally

```
CLI command:
ip igmp proxy-service

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.124.1.1.0 i 1
```

Enabling IGMP module on vlan interface

MIB: fsigmp.mib

Tables used: fsIgmpInterfaceTable — 1.3.6.1.4.1.2076.36.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.36.1.4.1.2.{ifindex} i {up(1) | down(2)}
```

Example of enabling the IGMP module on vlan 100 interface

```
CLI command:
interface vlan 100
set ip igmp enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.36.1.4.1.2.92 i 1
```

Enabling IGMP fast-leave function on interface vlan interface

MIB: fsigmp.mib

Tables used: fsIgmpInterfaceTable — 1.3.6.1.4.1.2076.36.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.36.1.4.1.3.{ifindex} i {enable(1) | disable(0)}
```

Example of enabling IGMP fast-leave function on vlan 100 interface

```
CLI command:
interface vlan 100
ip igmp immediate-leave

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.36.1.4.1.3.92 i 1
```

Assigning IGMP proxy upstream interface

MIB: fsigp.mib

Tables used: fsIgmpProxyRtrIfaceTable — 1.3.6.1.4.1.2076.124.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.124.2.1.1.7.{ifindex} i {create and go(4) | destroy(6)}
```

Example of enabling the IGMP module on vlan 100 interface

```
CLI command:
interface vlan 100
ip igmp-proxy mrouter

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.124.2.1.1.7.92 i 4
```

Viewing ip igmp forwarding-database table

MIB: fsigp.mib

Tables used: fsigmpproxyMRoute — 1.3.6.1.4.1.2076.124.3

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.124.3
```

Example of command for IGMP forwarding-database table viewing

```
CLI command:
show ip igmp-proxy forwarding-database

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.124.3
```

12 MANAGEMENT FUNCTIONS

12.1 *AAA mechanism*

Setting the authentication mode when authorization is not possible on the server

MIB: ELTEX-MES-ISS-AAA-MIB.mib

Tables used: eltMesIssAaaGlobalConfig — 1.3.6.1.4.1.35265.1.139.7.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.1.5.0 i {chain(1) | break(2)}
```

Example of setting the chain authentication method

```
CLI command:
aaa authentication mode chain

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.1.5.0 i 1
```

Configuring the AAA servers list

MIB: ELTEX-MES-ISS-AAA-MIB.mib

Tables used: eltMesIssAaaGlobalConfig — 1.3.6.1.4.1.35265.1.139.7.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.4.{list name length}.{list name in
dec}.{entry index(1-3)} i {active(1) | create and go(4) | destroy(6)} \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.3.{list name length}.{list name in
dec}.{entry index(1-3)} i {local(1) | radius(2) | tacacs(3)}
```

Example of creating a servers list with "aaa" name

```
CLI command:
aaa authentication user-defined aaa local radius tacacs

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.4.3.97.97.97.1 i 4 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.3.3.97.97.97.1 i 1 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.3.3.97.97.97.2 i 2 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.3.3.97.97.97.3 i 3
```

Example of deleting a servers list with "aaa" name

```
CLI command:
no aaa authentication list aaa

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.4.3.97.97.97.3 i 6 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.4.3.97.97.97.2 i 6 \
1.3.6.1.4.1.35265.1.139.7.1.1.6.1.1.4.3.97.97.97.1 i 6
```

Binding the AAA servers list to the terminal

MIB: ELTEX-MES-ISS-AAA-MIB.mib

Tables used: eltMesIssAaaLineLoginAuthenticationTable — 1.3.6.1.4.1.35265.1.139.7.1.2.1, eltMesIssAaaLineEnableAuthenticationTable — 1.3.6.1.4.1.35265.1.139.7.1.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.2.1.1.2.{console(1) | telnet(2) | ssh(3)} s {list
name}
1.3.6.1.4.1.35265.1.139.7.1.2.2.1.2.{console(1) | telnet(2) | ssh(3)} s {list
name}
```

Example of binding the AAA servers list to a telnet terminal

```
CLI command:
line telnet
aaa authentication login aaa
aaa authentication enable aaa

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.2.1.1.2.2 s aaa
1.3.6.1.4.1.35265.1.139.7.1.2.2.1.2.2 s aaa
```

Example of unbinding the AAA servers list from the telnet terminal

```
CLI command:
line telnet
no aaa authentication login
no aaa authentication enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.2.1.1.2.2 s default
1.3.6.1.4.1.35265.1.139.7.1.2.2.1.2.2 s default
```

Allowing the authorization of commands for console, Telnet, SSH

MIB: ELTEX-MES-ISS-MIB.mib

Tables used: eltMesIssAaaCommandAuthorizationTable — 1.3.6.1.4.1.35265.1.139.7.1.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.1.4.1.2.{privilege(1-15)} i {local(1),
remoteTacacs(2), tacacsFallbackToLocal(3)}
```

Example of configuring authorization of user commands with privilege level 6 on the TACACS server, and if it is unavailable, locally

```
CLI command:
aaa authorization command 6 tacacs local

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.1.4.1.2.6 i 3
```

Allowing the authorization of commands for console, Telnet, SSH at the line level

MIB: ELTEX-MES-ISS-MIB.mib

Tables used: eltMesIssAaaLineCommandAuthorizationTable — 1.3.6.1.4.1.35265.1.139.7.1.2.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.2.4.1.2.{console(1), telnet(2), ssh(3)} i
{local(1), remoteTacacs(2), tacacsFallbackToLocal(3), global(255)}
```

Example of configuring authorization of user commands with privilege level 6 on the TACACS server, and if it is unavailable, locally

```
CLI command:
line telnet
  aaa authorization command tacacs local
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.2.4.1.2.2 i 3
```

12.2 *TACACS+ protocol*

Setting the port attribute in a user-defined string format

MIB: ELTEX-MES-ISS-AAA-MIB.mib

Tables used: eltMesIssAaaTacacsAttrPortFormat — 1.3.6.1.4.1.35265.1.139.7.1.1.2.2.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.1.2.2.1.1.2.{console(1), telnet(2), ssh(3)} s
{string}
```

Example of configuring an attribute for telnet

```
CLI command:
tacacs attributes port telnet vty%n

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.1.2.2.1.1.2.2 s vty%n
```

Setting the authentication method for TACACS+

MIB: ELTEX-MES-ISS-AAA-MIB.mib

Tables used: eltMesIssAaaTacacsGlobalConfig — 1.3.6.1.4.1.35265.1.139.7.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.7.1.1.2.1.0 i {ascii(1) | pap(2)}
```

Example of setting the authentication method for TACACS+

```
CLI command:
tacacs-server authentication type ascii

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.7.1.1.2.1.0 i 1
```

12.3 *RADIUS protocol*

Configuring the NAS-ID value

MIB: radauth.mib

Tables used: radiusAuthClient — 1.3.6.1.2.1.67.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.67.1.2.1.1.1.0 s "{name}"
```

Example of viewing IGMP authorization cache table

```
CLI command:
radius attributes nas-id user-defined SW3

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.67.1.2.1.1 s SW3
```

Configuring the Radius server

MIB: fsradius.mib

Tables used: radiusExtServerTable — 1.3.6.1.4.1.2076.25.1.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.25.1.3.1.8.{radius-server index (1-5)} i {active(1),
createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.25.1.3.1.2.{radius-server index (1-5)} a {Radius-server IP
address}
1.3.6.1.4.1.2076.25.1.3.1.3.{radius-server index (1-5)} i {auth (1), acct
(2), both (3)}
1.3.6.1.4.1.2076.25.1.3.1.4.{radius-server index (1-5)} s "secret key"
1.3.6.1.4.1.2076.25.1.3.1.5.{radius-server index (1-5)} i  {enabled (1),
disabled (2), destroy (3)}
1.3.6.1.4.1.2076.25.1.3.1.6.{radius-server index (1-5)} i (1 .. 120)
1.3.6.1.4.1.2076.25.1.3.1.7.{radius-server index (1-5)} i (1 .. 254)
```

Example of configuring Radius server with ip and secret key

```
CLI command:
radius-server host 192.168.10.70 key 9bcjK0hfrI6B0DDvInWnZLepKmSggGrw

SNMP command:
snmpset -v2c -c private 192.168.1.30 1.3.6.1.4.1.2076.25.1.3.1.8.1 i 5
snmpset -v2c -c private 192.168.1.30 1.3.6.1.4.1.2076.25.1.3.1.2.1 a
192.168.10.70 \
1.3.6.1.4.1.2076.25.1.3.1.3.1 i 1 \
1.3.6.1.4.1.2076.25.1.3.1.4.1 s "9bcjK0hfrI6B0DDvInWnZLepKmSggGrw" \
1.3.6.1.4.1.2076.25.1.3.1.5.1 i 1 \
1.3.6.1.4.1.2076.25.1.3.1.6.1 i 10 \
1.3.6.1.4.1.2076.25.1.3.1.7.1 i 3 \
snmpset -v2c -c private 192.168.1.30 1.3.6.1.4.1.2076.25.1.3.1.8.1 i 1
```

Example of Radius server deleting

```
CLI command:
no radius-server host 192.168.10.70
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 1.3.6.1.4.1.2076.25.1.3.1.8.1 i 6
```

12.4 *Access lists (ACL) for device management*

Restrict device management by a given access filter

MIB: ELTEX-MES-ISS-IP-MIB

Tables used: eltMesIssIpAuthMgrEntry — 1.3.6.1.4.1.35265.1.139.24.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.8.{ipv4(1), ipv6(2)}.{ipv4(4),
ipv6(16)}.{IpAddr}.{PrefixLength} i  {active(1), notInService(2), notReady(3),
createAndGo(4), createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.4.{ipv4(1), ipv6(2)}.{ipv4(4),
ipv6(16)}.{IpAddr}.{PrefixLength} x {PortList}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.5.{ipv4(1), ipv6(2)}.{ipv4(4),
ipv6(16)}.{IpAddr}.{PrefixLength} x {VlanList}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.7.{ipv4(1), ipv6(2)}.{ipv4(4),
ipv6(16)}.{IpAddr}.{PrefixLength} i {snmp(1), telnet{2}, http(4), https(8),
ssh(16)}
```

Example of ACL configuring for IPv6 address

```
CLI command:
authorized-manager ip-source fd00:: 16

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.8.2.16.253.0.0.0.0.0.0.0.0.0.0.0.0.0.0.16
i 4
```

Example of ACL configuring for IPv4 address specifying interfaces, VLANs, and services

```
CLI command:
authorized-manager ip-source 192.168.0.0 255.255.255.0 interface gi 0/3 vlan 10
service telnet ssh

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.8.1.4.192.168.0.0.24 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.4.1.4.192.168.0.0.24 x 0x20
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.5.1.4.192.168.0.0.24 x 0x0040
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.7.1.4.192.168.0.0.24 i 18
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.24.1.2.1.1.8.1.4.192.168.0.0.24 i 1
```

13 PORT MIRRORING

Configuring port mirroring

MIB: fsiss.mib

Tables used: issMirror — 1.3.6.1.4.1.2076.81.3,
issMirrorCtrlExtnTable — 1.3.6.1.4.1.2076.81.3.6,
issMirrorCtrlExtnSrcTable — 1.3.6.1.4.1.2076.81.3.7,
issMirrorCtrlExtnDestinationTable — 1.3.6.1.4.1.2076.81.3.9

```
snmpset -v2c -c <community> <IP address> \
 1.3.6.1.4.1.2076.81.3.1.0 i {disable(1), enable(2)} \
 1.3.6.1.4.1.2076.81.3.6.1.6.{session-id} i {Active(1), Create and wait(5),
Destroy(6)} \
1.3.6.1.4.1.2076.81.3.6.1.2.{session-id} i 1 \
 1.3.6.1.4.1.2076.81.3.7.1.2.{session-id}.{ifindex-source} i {add(1),
delete(2)} \
 1.3.6.1.4.1.2076.81.3.7.1.3.{session-id}.{ifindex-source} i {rx{1}, tx{2},
both{3}} \
 1.3.6.1.4.1.2076.81.3.9.1.2.{session-id}.{ifindex-destation} i {add(1),
delete(2)} \
 1.3.6.1.4.1.2076.81.3.6.1.6.{session-id} i {Active(1), Create and wait(5),
Destroy(6)}
```

Example of mirroring traffic from GigabitEthernet 0/5-6 interfaces to GigabitEthernet 0/10 interface

```
CLI command:
monitor session 2 source interface GigabitEthernet 0/5 both
monitor session 2 source interface GigabitEthernet 0/6 both
monitor session 2 destination interface GigabitEthernet 0/10

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.3.1.0 i 2 \
1.3.6.1.4.1.2076.81.3.6.1.6.2 i 5 \
1.3.6.1.4.1.2076.81.3.6.1.2.2 i 1 \
1.3.6.1.4.1.2076.81.3.7.1.2.2.5 i 1 \
1.3.6.1.4.1.2076.81.3.7.1.2.2.6 i 1 \
1.3.6.1.4.1.2076.81.3.7.1.3.2.5 i 3 \
1.3.6.1.4.1.2076.81.3.7.1.3.2.6 i 3 \
1.3.6.1.4.1.2076.81.3.9.1.2.2.10 i 1 \
1.3.6.1.4.1.2076.81.3.6.1.6.2 i 1
```

The session-id parameter can be a number in the range 1-4.

Configuring mirroring in VLAN

MIB: fsiss.mib

Tables used: issMirror — 1.3.6.1.4.1.2076.81.3,
issMirrorCtrlExtnTable — 1.3.6.1.4.1.2076.81.3.6,
issMirrorCtrlExtnSrcTable — 1.3.6.1.4.1.2076.81.3.7,
issMirrorCtrlExtnDestinationTable — 1.3.6.1.4.1.2076.81.3.9

```
snmpset -v2c -c <community> <IP address> \
 1.3.6.1.4.1.2076.81.3.1.0 i {disable(1), enable(2)} \
```

```
 1.3.6.1.4.1.2076.81.3.6.1.6.{session-id} i {Active(1), Create and wait(5),
Destroy(6)}  \
 1.3.6.1.4.1.2076.81.3.6.1.2.{session-id} i 1 \
 1.3.6.1.4.1.2076.81.3.6.1.3.{session-id} i {source-vlan(1), destination-
vlan(2), disabled(3)} \
 1.3.6.1.4.1.2076.81.3.6.1.4.{session-id} i {vlan} \
 1.3.6.1.4.1.2076.81.3.7.1.2.{session-id}.{ifindex-source} i {add(1),
delete(2)} \
 1.3.6.1.4.1.2076.81.3.7.1.3.{session-id}.{ifindex-source} i {rx{1}, tx{2},
both(3)} \
 1.3.6.1.4.1.2076.81.3.9.1.2.{session-id}.{ifindex-destination} i {add(1),
delete(2)} \
 1.3.6.1.4.1.2076.81.3.6.1.6.{session-id} i {Active(1), Create and wait(5),
Destroy(6)}
```

Example of traffic mirroring from GigabitEthernet 0/5 interface to GigabitEthernet 0/10 interface in vlan 100

```
CLI command:
monitor session 2 source interface GigabitEthernet 0/5 both
monitor session 2 destination interface GigabitEthernet 0/10
monitor session 2 destination remote vlan 100

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.3.1.0 i 2 \
1.3.6.1.4.1.2076.81.3.6.1.6.2 i 5 \
1.3.6.1.4.1.2076.81.3.6.1.2.2 i 1 \
1.3.6.1.4.1.2076.81.3.6.1.3.2 i 2 \
1.3.6.1.4.1.2076.81.3.6.1.4.2 i 100 \
1.3.6.1.4.1.2076.81.3.7.1.2.2.5 i 1 \
1.3.6.1.4.1.2076.81.3.7.1.3.2.5 i 3 \
1.3.6.1.4.1.2076.81.3.9.1.2.2.10 i 1 \
1.3.6.1.4.1.2076.81.3.6.1.6.2 i 1
```

The session-id parameter can be a number in the range 1-4.

14 PHYSICAL LEVEL DIAGNOSTIC FUNCTIONS

14.1 *Copper cable diagnostics*

Running the copper cable diagnostics

MIB: ELTEX-PHY-MIB.mib

Tables used: rlPhyTestSetTable — 1.3.6.1.4.1.35265.52.1.2.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.52.1.2.1.1.1.1.{ifIndex} i 1
```

Example of running diagnostics from GigabitEthernet 0/12 port

```
CLI command:
test cable-diagnostics GigabitEthernet 0/12

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.2.1.1.1.1.12 i 1
```

Monitoring the copper cable diagnostic status

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTestGetEntry — 1.3.6.1.4.1.35265.52.1.2.1.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.52.1.2.1.2.1.2.{ifIndex}
```

Example of viewing the diagnostic status on GigabitEthernet 0/12 port

```
CLI command:
test cable-diagnostics GigabitEthernet 0/12

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.2.1.2.1.2.12
```

Possible values:

1 — Port is inactive;
2 — Diagnostic is successful;
3 — Diagnostic is not finished;
4 — Not supported;
5 — Failed to run;
6 — Diagnostic is interrupted;
7 — Diagnostic error.

Viewing the diagnostic date of copper cable

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTestGetEntry — 1.3.6.1.4.1.35265.52.1.2.1.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.52.1.2.1.2.1.5.{ifIndex}
```

Example of viewing the diagnostic date on GigabitEthernet 0/12 port

```
CLI command:
test cable-diagnostics GigabitEthernet 0/12

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.2.1.2.1.5.12
```

Measuring the pairs length

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTestGetEntry — 1.3.6.1.4.1.35265.52.1.2.1.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.52.1.2.1.2.1.3.{ifindex}.{parameter type}
```

Example of viewing the A pair length on GigabitEthernet 0/12 port

```
CLI command:
test cable-diagnostics GigabitEthernet 0/12

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.2.1.2.1.3.12.17
```

Possible values:

17 — Pair A length;
18 — Pair B length;
19 — Pair C length;
20 — Pair D length;

Viewing the information about a short circuit in pairs

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTestGetEntry — 1.3.6.1.4.1.35265.52.1.2.1.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.52.1.2.1.2.1.3.{ifindex}.{parameter type}
```

Example of viewing the information about a short circuit on the A pair behind GigabitEthernet 0/12 port

```
CLI command:
test cable-diagnostics GigabitEthernet 0/12

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.2.1.2.1.3.12.1
```

Parameters type:

1 — pair A;
2 — pair B;
3 — pair C;
4 — Pair D.

Possible values:

0 — No pair short circuit;
1 — Pair short circuit.

Viewing the information about the gap by pairs

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTestGetEntry — 1.3.6.1.4.1.35265.52.1.2.1.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.52.1.2.1.2.1.3.{ifindex}.{parameter type}
```

Example of viewing the information about the breakup on the A pair behind GigabitEthernet 0/12 port

```
CLI command:
test cable-diagnostics GigabitEthernet 0/12

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.2.1.2.1.3.12.5
```

Parameters type:

5 — pair A breakup;
6 — pair B breakup;
7 — pair D breakup;
8 — pair C breakup;

Possible values:

0 — No pair breakup;
1 — Pair breakup.

14.2 *Optical transceiver diagnostic*

Taking DDM readings

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTransceiverDiagnosticTable — 1.3.6.1.4.1.35265.52.1.1.3.2

```
snmpwalk  -v2c  -c  <community>  <IP address> \
1.3.6.1.4.1.35265.52.1.1.3.2.1.8.{ifindex}.{parameter type}.1
```

Example of requesting the transceiver temperature readings from GigabitEthernet 0/25 interface

```
CLI command:
show fiber-ports optical-transceiver GigabitEthernet 0/25

SNMP command:
snmpwalk -v2c -c  public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.1.3.2.1.8.25.1.1
```

Possible values:

1 — SFP transceiver temperature;
2 — supply voltage, V;
3 — supply current, mA;
4 — transmission power level, dBm;
5 — receiving power level, dBm.

Information output from the type connector field

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTransceiverDiagnosticTable — 1.3.6.1.4.1.35265.52.1.1.3.2

```
snmpwalk  -v2c  -c  <community>  <IP address> \
1.3.6.1.4.1.35265.52.1.1.3.1.1.1.{ifindex}
```

Example of viewing the transceiver type connector from GigabitEthernet 0/25 interface

```
CLI command:
show fiber-ports optical-transceiver GigabitEthernet 0/25

SNMP command:
snmpwalk -v2c -c  public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.1.3.1.1.1.25
```

Possible values:

0 — unknown;
1 — sc;
7 — lc;
11 — optical-pigtail;
255 — vendorspec.

Information output about the transceiver type

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTransceiverDiagnosticTable — 1.3.6.1.4.1.35265.52.1.1.3.2

```
snmpwalk  -v2c  -c  <community>  <IP address> \
1.3.6.1.4.1.35265.52.1.1.3.1.1.2.{ifindex}
```

Example of viewing transceiver type from GigabitEthernet 0/25 interface

```
CLI command:
show fiber-ports optical-transceiver GigabitEthernet 0/25

SNMP command:
snmpwalk -v2c -c  public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.1.3.1.1.2.25
```

Possible values:

0 — unknown;
1 — gbic;
2 — sff;
3 — sfp-sfpplus;
255 — vendorspec.

Viewing the fiber diameter

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTransceiverDiagnosticTable — 1.3.6.1.4.1.35265.52.1.1.3.2

```
snmpwalk  -v2c  -c  <community>  <IP address> \
1.3.6.1.4.1.35265.52.1.1.3.1.1.7.{ifindex}
```

Example of viewing the fiber diameter from GigabitEthernet 0/25 interface

```
CLI command:
show fiber-ports optical-transceiver GigabitEthernet 0/25

SNMP command:
snmpwalk -v2c -c  public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.1.3.1.1.7.25
```

Possible values:

1 — fiber9;
2 — fiber50;
3 — fiber625;
4 — cooper;
65535 — unknown.

Viewing the transceiver characteristics

MIB: ELTEX-PHY-MIB.mib

Tables used: eltexPhyTransceiverDiagnosticTable — 1.3.6.1.4.1.35265.52.1.1.3.2

```
snmpwalk  -v2c  -c  <community>  <IP address> \
 1.3.6.1.4.1.35265.52.1.1.3.1.1.{parameter type}.{ifindex}
```

Example of viewing the transceiver manufacturer from GigabitEthernet 0/25 interface

```
CLI command:
show fiber-ports optical-transceiver GigabitEthernet 0/25

SNMP command:
snmpwalk -v2c -c  public 192.168.1.30 \
1.3.6.1.4.1.35265.52.1.1.3.1.1.5.25
```

Possible values:

3 — Ethernet;
4 — Transmitter wavelength ;
5 — Manufacturer;
6 — Serial number;
8 — Range in meters;
9 — DDM support (True(1), False(2));
10 — Inventory number;
11 — Revision.

15 POWER OVER ETHERNET (POE)

Viewing the consumed/rated power of PoE

MIB: rfc3621.mib

Tables used: pethMainPseEntry — 1.3.6.1.2.1.105.1.3.1.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.105.1.3.1.1.{nominal(2), consumed(4)}.{unit}
```

Example of viewing the power consumption

```
CLI command:
show power detail

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.105.1.3.1.1.4.1
```

Disabling Power over Ethernet on the port

MIB: rfc3621.mib

Tables used: pethPsePortAdminEnable — 1.3.6.1.2.1.105.1.1.1.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.105.1.1.1.3.{unit}.{ifindex} i {auto(1), never(2)}
```

Example of disabling PoE on GigabitEthernet 0/2 port

```
CLI command:
Interface GigabitEthernet 0/2
power inline never

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.105.1.1.1.3.1.2 i 2
```

16 SECURITY FUNCTIONS

16.1 *PPPoE Intermediate-agent*

For the functionality to work, you need to configure trusted ports (see paragraphs 14.1-14.2).

Global PPPoE-IA Settings

MIB: fspia.mib, ELTEX-MES-ISS-PPPOE-MIB.mib

Tables used:fsPIASnpSystem — 1.3.6.1.4.1.29601.2.9.1,
eltMesIssPppoeGlobals — 1.3.6.1.4.1.35265.1.139.2.1.1

Enabling/disabling the module with memory release:

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.1.1.0 i {no shutdown(1) | shutdown(2)}
```

Enabling/disabling pppoe passthrough function:

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.2.1.1.1.0 i {enable(1) | disable(2)}
```

Enabling/disabling the function globally:

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.1.2.0 i {enabled(1) | disabled(2)}
```

Setting the timeout for sessions:

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.1.4.0 i {timeout}
```

Example of enabling PPPoE-IA globally and setting a session timeout of 300 seconds

```
CLI command:
pppoe-ia snooping

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.3.6.1.4.1.29601.2.9.1.2.0 i 1 \
1.3.6.1.4.1.29601.2.9.1.4.0 i 300
```

PPPoE-IA settings in l2Vlan

MIB: fspia.mib

Tables used: fsPIASnpVlan — 1.3.6.1.4.1.29601.2.9.2

Enabling/disabling PPPoE-IA in l2vlan:

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.15.0.{vlan-id} i {create and go(4) | destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.3.0.{vlan-id} i {enabled(1) | disabled(2))}
```

Viewing PPPoE-IA statistics in l2vlan:

Accepted PADI:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.4.0.{vlan-id}
```

Accepted PADO:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.5.0.{vlan-id}
```

Accepted PADR:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.6.0.{vlan-id}
```

Accepted PADS:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.7.0.{vlan-id}
```

Accepted PADT:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.8.0.{vlan-id}
```

Transmitted frames:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.9.0.{vlan-id}
```

Generic error frames transmitted:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.10.0.{vlan-id}
```

Discarded PADO/PADS frames on untrusted interface:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.11.0.{vlan-id}
```

Discarded PADI/PADR frames on trusted interface:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.12.0.{vlan-id}
```

Discarded frames:

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.13.0.{vlan-id}
```

Clearing PPPoE-IA statistics in l2vlan:

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.2.1.1.14.0.{vlan-id} i 1
```

Example of enabling PPPoE-IA in vlan 1

```
CLI command:
vlan 1
pppoe-ia snooping

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.3.6.1.4.1.29601.2.9.2.1.1.15.0.1 i 4 \
1.3.6.1.4.1.29601.2.9.2.1.1.3.0.1 i 1
```

Operating with PPPoE-IA session table

MIB: fspia.mib

Tables used: fsPIASnpSessionTable — 1.3.6.1.4.1.29601.2.9.1.5

```
snmpget -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.9.1.5.1.{interface (3), session-id(4)}.{vlan-id}.{mac-
address}
```

Example of viewing information about PPPoE-IA session in vlan 1 with 50:3e:aa:03:23:ef MAC address

```
CLI command:
show pppoe intermediate-agent session

SNMP command:
snmpget -v2c -c  private 192.168.1.30 \
1.3.6.1.4.1.29601.2.9.1.5.1.3.1.80.62.170.3.35.239 \
```

16.2 *Port protection functions*

Viewing the port-security status

MIB: fsipdb.mib

Tables used: fsIpDdSrcGuardConfigTable — 1.3.6.1.4.1.29601.2.2.5.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.5.1.1.2
```

Example of viewing port-security status

```
CLI command:
show port-security

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.2.5.1.1.2
```

Enabling/disabling the protected port on interface

MIB: AricentMIVlan-MIB

Tables used: fsMIDot1qFutureVlan — 1.3.6.1.4.1.2076.120.1.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.120.1.3.1.6.{ifindex} i {true(1), false(2)}
```

Example of enabling the protected port on GigabitEthernet 0/5 interface

```
CLI command:
switchport protected

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.120.1.3.1.6.5 i 1
```

Enabling/disabling port-isolation on interface

MIB: fsiss.mib

Tables used: issPortIsolationTable — 1.3.6.1.4.1.2076.81.2.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.2.3.1.5.{ifindex}.0.{ifindex} i {Createandgo(4),
destroy(6)}
```

Example of enabling port-isolation on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
port-isolation add GigabitEthernet 0/5

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.2.3.1.5.2.0.5 i 4
```

To delete the setting, set the value to 6.

Viewing the MAC table

MIB: Q-BRIDGE-MIB

Tables used: dot1qTpFdbTable — 1.3.6.1.2.1.17.7.1.2.2

```
snmpwalk -v2c -c <community> <IP address> \
 1.3.6.1.2.1.17.7.1.2.2
```

Example

```
CLI command:
show mac address-table

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.17.7.1.2.2
```

Creating a static binding in arp table

MIB: RFC1213-MIB

Tables used: ipNetToMediaTable — 1.3.6.1.2.1.4.22

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.2.1.4.22.1.2.{index-l3}.{IP address} x {"MAC address"}  \
1.3.6.1.2.1.4.22.1.4.{index-l3}.{IP address}  i 4
```

Example of binding ip 192.168.1.21 and MAC aa:bb:cc:dd:ee:ff to vlan 1

```
CLI command:
arp 192.168.1.21 aa:bb:cc:dd:ee:ff vlan 1

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.2.1.4.22.1.2.73.192.168.1.21 x "aabbccddeeff" \
1.3.6.1.2.1.4.22.1.4.73.192.168.1.21 i 4
```

1. To remove the binding, set the value 2 in the field 1.3.6.1.2.1.4.22.1.4.

2. The IP addresses of the device and static record being created in the arp table must be on the same subnet.

Viewing the arp table

MIB: RFC1213-MIB.mib, Q-BRIDGE-MIB.mib

Tables used: pNetToMediaPhysAddress — 1.3.6.1.2.1.4.22.1.2,
dot1qTpFdbEntry — 1.3.6.1.2.1.17.7.1.2.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.4.22.1.2.{(2) ip address, (3)MAC address}
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.17.7.1.2.2.1
```

Example of viewing the arp table

```
CLI command:
show arp

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.4.22.1.2
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.17.7.1.2.2.1
```

1. The value of pNetToMediaPhysAddress table displays the IP and MAC addresses of vlan.

2. The value of dot1qTpFdbEntry table displays the status and identification number of the port from which the device is accessible.

Enabling the protection function on port-security interface

MIB: ELTEX-MES-ISS-VLAN-MIB

Tables used: eltMesIssVlanPortSecurityStatus — 1.3.6.1.4.1.35265.1.139.3.1.2.1.1.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.3.{ifindex} i {true(1), false(2)}
```

Example of configuring port-security on GigabitEthernet 0/1

```
CLI command:
switchport port-security enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.3.1 i 1
```

Configuring port-security mode

MIB: ELTEX-MES-ISS-VLAN-MIB

Tables used: eltMesIssVlanPortSecurityMode — 1.3.6.1.4.1.35265.1.139.3.1.2.1.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.4.{ifindex}  i  {max-addresses(1),  lock(2),
secure-permanent(3), secure-delete-on-reset(4)}
```

Example of configuring port-security mode max-addresses on GigabitEthernet 0/1

```
CLI command:
switchport port-security mode max-addresses

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.4.1 i 1
```

Setting the number of mac addresses that the port can examine

MIB: ELTEX-MES-ISS-VLAN-MIB

Tables used: eltMesIssVlanPortSecurityMacLimit — 1.3.6.1.4.1.35265.1.139.3.1.2.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.2.{ifindex} u {max mac addresses}
```

Example of setting a 10 mac addresses limit on GigabitEthernet 0/25

```
CLI command:
switchport port-security mac-limit 10
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.3.1.2.1.1.2.25 u 10
```

16.3 *DHCP control*

Enabling/disabling DHCP/DHCPv6 snooping globally

MIB: fsdhcsnp.mib

Tables used: ifMainTable — 1.3.6.1.4.1.29601.2.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.3.1.{dhcpv4(1)| dhcpv6(3)}.0 i {enable(1)| disabled(2)}
```

Example of enabling DHCPv6 snooping globally

```
CLI command:
ip dhcpv6 snooping

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.3.6.1.4.1.29601.2.3.1.3.0 i 1
```

Enabling/disabling DHCP/DHCPv6 snooping in l2vlan

MIB: fsdhcsnp.mib

Tables used: ifMainTable — 1.3.6.1.4.1.29601.2.3

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.3.2.1.1.15.{vlan-id} i {Active(1)| Create and wait(5)|
Destroy(6)} \
1.3.6.1.4.1.29601.2.3.2.1.1.15.{vlan-id} i {Active(1)| Create and wait(5)|
Destroy(6)} \
1.3.6.1.4.1.29601.2.3.2.1.1.{dhcpv4(2)| dhcpv6(16)}.{vlan-id} i {enable(1)|
disable(2)}
```

Example of enabling DHCPv6 snooping in vlan 5

```
CLI command:
vlan 5
ip dhcpv6 snooping

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.3.6.1.4.1.29601.2.3.2.1.1.15.5 i 5 \
1.3.6.1.4.1.29601.2.3.2.1.1.15.5 i 1 \
1.3.6.1.4.1.29601.2.3.2.1.1.16.5 i 1
```

Creating/deleting a static entry in the DHCP snooping table

MIB: fsipdb.mib

Tables used: fsIpDbStaticBindingTable — 1.3.6.1.4.1.29601.2.2.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.2.1.1.6.<vlan_id>.<MAC-address в DEC> i {createAndWait(5),
destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.2.1.1.3.<vlan id>.<MAC-address в DEC> a {IP address}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.2.1.1.4.<vlan id>.<MAC-address в DEC> i {ifindex}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.2.1.1.5.<vlan id>.<MAC-address в DEC> a {IP address}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.2.1.1.6.<vlan id>.<MAC-address в DEC> i {active(1)}
```

Example of creating a static entry in the DHCP snooping table

```
CLI command:
ip source binding 5C:5A:47:A5:E3:6B vlan 2 192.168.1.103 interface
gigabitethernet 0/2 gateway 192.168.1.3

SNMP command:
snmpset -v2c -c private 192.168.1.30
1.3.6.1.4.1.29601.2.2.2.1.1.6.2.92.90.71.165.227.107 i 5
snmpset -v2c -c private 192.168.1.30
1.3.6.1.4.1.29601.2.2.2.1.1.3.2.92.90.71.165.227.107 a 192.168.1.103
snmpset -v2c -c private 192.168.1.30
1.3.6.1.4.1.29601.2.2.2.1.1.4.2.92.90.71.165.227.107 i 2
snmpset -v2c -c private 192.168.1.30
1.3.6.1.4.1.29601.2.2.2.1.1.5.2.92.90.71.165.227.107 a 192.168.1.3
snmpset -v2c -c private 192.168.1.30
1.3.6.1.4.1.29601.2.2.2.1.1.6.2.92.90.71.165.227.107 i 1
```

Example of deleting a static entry in the DHCP snooping table

```
CLI command:
no ip source binding 5C:5A:47:A5:E3:6B vlan 2

SNMP command:
snmpset -v2c -c private 192.168.1.30
1.3.6.1.4.1.29601.2.2.2.1.1.6.2.92.90.71.165.227.107 i 6
```

Enabling/disabling IP source Guard on interface

MIB: fsipdb.mib

Tables used: fsIpDdSrcGuardConfigTable — 1.3.6.1.4.1.29601.2.2.5.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.5.1.1.2.{ifindex} i {disable(1)| enable(3)}
```

Example of enabling IP source Guard on GigabitEthernet 0/5 interface

```
CLI command:
ip verify source port-security

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.2.5.1.1.2.5 i 3
```

Enabling/disabling IP source Guard in L2VLAN

MIB: ELTEX-MES-ISS-IPDB-MIB.mib

Tables used: eltMesIssIpDbSrcGuardVlanEntry — 1.3.6.1.4.1.35265.1.139.9.1.1.3.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.9.1.1.3.1.{IPv4(2), IPv6(3)}.{vlan-id} i {enable(1) |
disable(2)}
```

Example of enabling IP-source Guard in Vlan5

```
CLI command:
ip verify source port-security

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.9.1.1.3.1.2.5 i 1
```

Enabling/disabling ARP Inspection

MIB: fsipdb.mib

Tables used: fsIpArpInspect — 1.3.6.1.4.1.29601.2.2.6

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.6.1.0 i {enable(1)| disable(2)}
```

Example of enabling ARP Inspection

```
CLI command:
ip arp inspection enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.2.6.1.0 i 1
```

Configuring a trusted Interface

MIB: fscfa.mib

Tables used: ifMainTable — 1.3.6.1.4.1.2076.27.1.4, ifMainExtTable — 1.3.6.1.4.1.2076.27.1.12

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.15.{ifindex} i {uplink(1)| downlink(2)} \
1.3.6.1.4.1.2076.27.1.12.1.11.{ifindex} i {untrusted(0)| trusted(1)}
```

Example of configuring GigabitEthernet 0/2 interface in the trusted list

```
CLI command:
Interface gi 0/2
set port-role uplink
port-security-state trusted

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.15.2 i 1 \
1.3.6.1.4.1.2076.27.1.12.1.11.2 i 1
```

Viewing trusted interfaces

MIB: fscfa.mib

Tables used: ifMainTable — 1.3.6.1.4.1.2076.27.1.4,

ifMainExtTable — 1.3.6.1.4.1.2076.27.1.12

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.15 \
1.3.6.1.4.1.2076.27.1.12.1.11
```

Example of viewing the ports role

```
CLI command:
show interfaces port-role
show interfaces port-security-state

SNMP command:
snmpwalk -v2c -c  public 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.15 \
1.3.6.1.4.1.2076.27.1.12.1.11
```

16.4 *Port-based client authentication (802.1x)*

Enabling and disabling the 802.1x module

MIB: fsPnac.mib

Tables used: fsPnacPaeSystem — 1.3.6.1.4.1.2076.64.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.64.1.1.0 i {start(1)| shutdown(2)}
```

Example of enabling the 802.1x module

```
CLI command:
no shutdown dot1x
```

```
SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.3.6.1.4.1.2076.64.1.1.0 i 1
```

Installing a database for 802.1x authentication

MIB: fsPnac.mib

Tables used: fsPnacPaeSystem — 1.3.6.1.4.1.2076.64.1.3.0

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.64.1.3.0 i {remoteServer(1) | localServer(2)}
```

Example of installing a database for 802.1x authentication

```
CLI command:
aaa authentication dot1x default group radius

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.3.6.1.4.1.2076.64.1.3.0 i 1
```

Enabling 802.1x authentication on switch

MIB: StdPnac.mib

Tables used: dot1xPaeSystemAuthControl — 1.0.8802.1.1.1.1.1.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.1.1.0 i {enabled(1), disabled(2)}
```

Example of enabling 802.1x

```
CLI command:
dot1x system-auth-control

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.1.1.0 i 1
```

Enabling periodic re-authentication of the client

MIB: StdPnac.mib

Tables used: dot1xAuthReAuthEnabled — 1.0.8802.1.1.1.1.2.1.1.13

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.13.{ifIndex} i {true(1), false(2)}
```

Example of enabling periodic client reauthentication on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
dot1x reauthentication

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.13.2 i 1
```

Setting the period between repeated authentication checks

MIB: StdPnac.mib

Tables used: dot1xAuthConfigTable — 1.0.8802.1.1.1.1.2.1.1.12

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.12.{ifIndex} u {size (300-4294967295)}
```

Example of setting a period of 300 seconds between repeated checks on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
dot1x timeout reauth-period 300

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.12.2 u 300
```

Configuring 802.1x authentication modes on interface

MIB: StdPnac.mib

Tables used: dot1xAuthConfigTable — 1.0.8802.1.1.1.1.2.1.1.6

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.6.{ifIndex} i {force-Unauthorized(1), auto(2), force-
Authorized(3)}
```

Example of configuring 802.1x authentication in auto mode on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
dot1x port-control auto

SNMP command:
snmpset -v2c -c  private 192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.6.2 i 2
```

Managing the 802.1x user mode on interface

MIB: fsPnac.mib

Tables used: fsPnacPaePortTable — 1.3.6.1.4.1.2076.64.1.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.64.1.5.1.2.{ifindex} i {portBased(1) | macBased(2)}
```

Example of managing the 802.1x user mode on interface

```
CLI command:
int gi 0/2
dot1x host-mode multi-session

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.3.6.1.4.1.2076.64.1.5.1.2.2 i 2
```

Managing the 802.1x port-control mode on interface

MIB: StdPnac.mib

Tables used: dot1xAuthConfigTable — 1.0.8802.1.1.1.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.6.{ifindex} i {forceUnauthorized (1) | auto (2)
|forceAuthorized (3)}
```

Example of managing the 802.1x port-control mode on interface

```
CLI command:
int gi 0/13
dot1x port-control auto

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.6.13 i 2
```

Setting the reauth-max parameter

MIB: fsPnac.mib

Tables used: fsPnacPaePortTable — 1.3.6.1.4.1.2076.64.1.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.64.1.5.1.9.{ifindex} u {re-auth-max (1-10)}
```

Example of setting the reauth-max parameter

```
CLI command:
int gi 0/2
dot1x reauth-max 10

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.3.6.1.4.1.2076.64.1.5.1.9.2 u 10
```

Initializing the connection on interface

MIB: StdPnac.mib

Tables used: dot1xPaePortTable — 1.0.8802.1.1.1.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.1.2.1.4.{ifindex} i {true(1) | false(2)}
```

Example of connection initialization on interface

```
CLI command:
dot1x initialize interface gi 0/2

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.1.2.1.4.2 i 1
```

Manual user authentication on interface

MIB: StdPnac.mib

Tables used: dot1xPaePortTable — 1.0.8802.1.1.1.1.1.2

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.1.2.1.5.{ifindex} i {true(1) | false(2)}
```

Example of manual user authentication on interface

```
CLI command:
dot1x re-authenticate interface gi 0/2

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.1.2.1.5.2 i 1
```

Setting 802.1x timers on interface

MIB: StdPnac.mib

Tables used: dot1xAuthConfigTable — 1.0.8802.1.1.1.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.{QuietPeriod(7) |
AuthTxPeriod(8)|SuppTimeout(9)|ServerTimeout(10)|MaxReq(11)|AuthPeriod(12) }.{i
findex} u {period}
```

Example of setting a quiet-period timer on interface

```
CLI command:
int gi 0/2
dot1x timeout quiet-period 40

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.7.2 u 40
```

Enabling automatic authentication on interface

MIB: StdPnac.mib

Tables used: dot1xAuthConfigTable — 1.0.8802.1.1.1.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.13.2 i 1
```

Example of enabling automatic authentication on interface

```
CLI command:
int gi 0/2
dot1x reauthentication

SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.13.2 i 1
```

Managing control-direction

MIB: StdPnac.mib

Tables used: dot1xAuthConfigTable — 1.0.8802.1.1.1.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.1.1.3.{ifindex} i {both(0) | in(1)}
```

Example of control-direction managing

```
CLI command:
int gi 0/2
dot1x control-direction in
```

```
SNMP command:
snmpset -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.2.1.1.3.2 i 1
```

Viewing 802.1x client data

MIB: StdPnac.mib

Tables used: dot1xAuthSessionStatsTable — 1.0.8802.1.1.1.1.2.4

```
snmpwalk -v2c -c <community> <IP address> \
1.0.8802.1.1.1.1.2.4
```

Example of commands for viewing 802.1x client data

```
CLI command:
show dot1x mac-statistics

SNMP command:
snmpwalk -v2c -c  private  192.168.1.30 \
1.0.8802.1.1.1.1.2.4
```

16.5 *Broadcast storm control*

Setting units of measurement for limiting broadcast traffic

MIB: ELTEX-MES-ISS-ACL-MIB.mib

Tables used: eltMesIssAclRateControl — 1.3.6.1.4.1.35265.1.139.1.4

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.1.4.2.0 i {pps(1), kbps(2)}
```

Example of enabling the measurement of broadcast traffic in kbps mode

```
CLI command:
storm-control mode kbps

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.1.4.2.0 i 2
```

Configuring traffic limits in kbps

MIB: ELTEX-MES-ISS-ACL-MIB.mib

Tables used: eltMesIssAclRateCtrlEntry **—** 1.3.6.1.4.1.35265.1.139.1.4.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.1.4.1.1.{unknown unicast(1), broadcast(2),
multicast(3)}.{ifindex} i {0-4194272}
```

Example of setting multicast traffic limits to 16kbps on GigaibitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
storm-control multicast level kbps 16

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
```

```
1.3.6.1.4.1.35265.1.139.1.4.1.1.3.2 i 16
```

It is possible to limit traffic in increments of 16 kbps.

Configuring traffic limits in kbps

MIB: ELTEX-MES-ISS-ACL-MIB.mib

Tables used: eltMesIssAclRateCtrlEntry — 1.3.6.1.4.1.35265.1.139.1.4.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.1.4.1.1.{unknown unicast(4), broadcast(5),
multicast(6)}.{ifindex} i {0-262142}
```

Example of setting multicast traffic limits to 16kbps on GigaibitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
storm-control multicast level pps 1

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.1.4.1.1.6.2 i 1
```

Configuring actions when traffic limits are exceeded

MIB: ELTEX-MES-ISS-ACL-MIB.mib

Tables used: eltMesIssAclRateCtrlEntry — 1.3.6.1.4.1.35265.1.139.1.4.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.1.4.1.1.{unknown unicast(8), broadcast(9),
multicast(10)}.{ifindex} i {none(0), trap(1), shutdown(3)}
```

Example of configuring an action when the multicast traffic limit is exceeded on GigabitEthernet 0/2 interface

```
CLI command:
Interface GigabitEthernet 0/2
storm-control multicast action shutdown

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.1.4.1.1.10.2 i 3
```

16.6 *ARP Inspection*

Enabling/disabling ARP inspection on device

MIB: ARICENT-IPDB-MIB

Tables used: fsIpArpInspect — 1.3.6.1.4.1.29601.2.2.6
fsIpArpInsVlanTable — 1.3.6.1.4.1.29601.2.2.6.9

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.6.1.0 i {enabled(1) | disabled(2)}
```

Example of enabling arp inspection globally

```
CLI command:
ip arp inspection enable

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.2.6.1.0 i 1
```

Example of disabling arp inspection globally

```
CLI command:
ip arp inspection enable

SNMP command:
snmpset -v2c -c private 192.168.1.30\
1.3.6.1.4.1.29601.2.2.6.1.0 i 2
```

Enabling/disabling arp inspection in VLAN

MIB: ARICENT-IPDB-MIB

Tables used: fsIpArpInspect — 1.3.6.1.4.1.29601.2.2.6
fsIpArpInsVlanTable — 1.3.6.1.4.1.29601.2.2.6.9

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.6.9.1.9.{vlan_id} i {create and go(4)| destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.6.9.1.2.{vlan_id} i {enabled(1) | disabled(2)}
```

Example of enabling arp inspection in VLAN 100

```
CLI command:
ip arp inspection vlan 100

SNMP command:
snmpset -v2c -c private 10.10.10.1
\1.3.6.1.4.1.29601.2.2.6.9.1.9.100 i 4
snmpset -v2c -c private 10.10.10.1
\1.3.6.1.4.1.29601.2.2.6.9.1.2.100 i 1
```

Example of disabling arp inspection in VLAN 100

```
CLI command:
no ip arp inspection vlan 100

SNMP command:
snmpset -v2c -c private 10.10.10.1 \
1.3.6.1.4.1.29601.2.2.6.9.1.9.100 i 6
```

Enabling/disabling arp inspection validate

MIB: ARICENT-IPDB-MIB

Tables used: fsIpArpInspect — 1.3.6.1.4.1.29601.2.2.6

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.2.6.2.0 x {disable(00) | dstmac(02) | dstmac-ipaddr(06) |
ipaddr(04) | srcmac(01) | srcmac-dstmac(03) | srcmac-dstmac-ipaddr(07) |
srcmac-ipaddr(05)}
```

Example of enabling arp inspection validate

```
CLI command:
ip arp inspection validate srcmac-dstmac-ipaddr

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.2.6.2.0 x 07
```

Example of disabling arp inspection validate

```
CLI command:
Interface gi 0/11
no ip arp inspection validate

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.2.6.2.0 x 00
```

16.7 *Configuring MAC Address Notification*

Allowing/prohibiting events registration for adding and deleting MAC addresses

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1.1.0 i {true(1), false(2)}
```

Example of allowing events registration for adding and deleting MAC addresses

```
CLI command:
mac-address-table notification change

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.1.0 i 1
```

Setting the maximum time interval between sending SNMP notifications

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1.2.0 u (0-604800)
```

Example of setting a time interval of 30 seconds

```
CLI command:
mac-address-table notification change interval 30

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.2.0 u 30
```

Configuring maximum number of events about changing the state of the MAC address table saved in the history

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1.7.0 u (0-604800)
```

Example of setting the maximum number of events in 300 records

```
CLI command:
mac-address-table notification change history 300

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.7.0 u 300
```

Enabling/disabling ladders sending to syslog about events of studying or deleting MAC addresses

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnGlobalObjects — 1.3.6.1.4.1.9.9.215.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.1.5.0 i {true(1), false(2)}
```

Example of enabling ladders sending

```
CLI command:
logging events mac-address-table change

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.5.0 i 1
```

Enabling/disabling snmp traps sending on interface about of studying of MAC addresses

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnIfConfigTable — 1.3.6.1.4.1.9.9.215.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.2.1.1.1.{ifIndex} i {true(1), false(2)}
```

Example of enabling snmp traps sending on gi 0/6 interface

```
CLI command:
interface gigabitethernet 0/6
  snmp trap mac-address-table change learnt
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.2.1.1.1.6 i 1
```

Enabling/disabling snmp traps sending of deleting MAC address on interface

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnIfConfigTable — 1.3.6.1.4.1.9.9.215.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.9.9.215.1.2.1.1.2.{ifIndex} i {true(1), false(2)}
```

Example of enabling snmp traps sending on gi 0/6 interface

```
CLI command:
interface gigabitethernet 0/6
  snmp trap mac-address-table change removed
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.2.1.1.2.6 i 1
```

Displaying all notifications about changes in the status of MAC addresses saved in the history

MIB: CISCO-MAC-NOTIFICATION-MIB.mib

Tables used: cmnHistoryTable — 1.3.6.1.4.1.9.9.215.1.1.8

Example of viewing the history of changes in the status of MAC addresses

```
CLI command:
show mac-address-table notification change history

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.9.9.215.1.1.8
```

16.8 *DCS*

Enabling/disabling DCS globally for individual protocols

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.1.1.2.{protocol} i {true(1) | false(2)}
```

Example of enabling option 82 substitution for dhcp snooping

```
CLI command:
dcs information option dhcp enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.1.1.2.1 i 1
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Enabling/disabling the option in individual vlans

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsVlanInfoOptTable — 1.3.6.1.4.1.35265.1.139.13.1.1.6

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.6.1.4.{vlan-id}.{protocol} i {create and go(4) |
destroy(6)}
1.3.6.1.4.1.35265.1.139.13.1.1.6.1.3.{vlan-id}.{protocol} i {True(1) | False(2)}
```

Example of enabling option 82 for DHCP relay in vlan 10

```
CLI command:
vlan 10
dcs dcs information option dhcp-relay enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.6.1.4.10.4 i 4
1.3.6.1.4.1.35265.1.139.13.1.1.6.1.3.10.4 i 1
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Enabling/disabling the option on individual interfaces

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsPortInfoOptTable — 1.3.6.1.4.1.35265.1.139.13.1.1.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.5.1.2.{ifindex}.{protocol} i {True(1) | False(2)}
```

Example of enabling option 82 for DHCP relay on gi0/5

```
CLI command:
Interface gi 0/5
dcs dcs information option dhcp-relay enable

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.5.1.2.5.4 i 1
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Choosing the option format for agent-curcuit-id

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.1.1.3.{protocol} i {tr101(1) | user-defined(2)}
```

Example of changing the format of option 82 for dhcp snooping to user-defined

```
CLI command:
dcs agent-circuit-id suboption-type dhcpv4 user-defined

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.1.1.3.1 i 2
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Example of changing the format of option 82 for dhcp snooping to tr101

```
CLI command:
dcs agent-circuit-id suboption-type dhcpv4 tr-101

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.1.1.3.1 i 1
```

Configuring access-node-id for tr101 mode

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.2.1.2.{protocol} s {access-node-id}
```

Example of changing access-node-id for dhcp snooping to 'eltex'

```
CLI command:
dcs agent-circuit-id format-type identifier-string "eltex"

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.2.1.2.1 s "eltex"
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Setting the format of the tr101 option

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.2.1.3.{protocol} i {format}
```

Example of changing tr101 for dhcp snooping to pv

```
CLI command:
dcs agent-circuit-id format-type option pv

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.2.1.3.1 i 3
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Format:
1 — sp;
2 — sv;
3 — pv;
4 — spv.

Setting the delimiter of the tr101 option

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.2.1.4.{protocol} i {delimiter}
```

Example of changing tr101 delimiter for dhcp snooping to hash

```
CLI command:
dcs agent-circuit-id format-type delimiter hash

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.2.1.4.1 i 2
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Delimiter:
1 — std;
2 — hash;
3 — dot;
4 — comma;
5 — semicolon;
6 — slash;
7 — space.

Configuring user-defined string for agent-curcuit-id/remote-id

In order an option to work, you need to convert the format of the agent-curcuit-id option to user-defined.

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.{agent-curcuit-id(3) | remote-id
(4)}.1.2.{protocol} s {"template/string"}
```

Example of configuring the client MAC address as agent-curcuit-id user-defined string for dhcp snooping

```
CLI command:
dcs agent-circuit-id user-defined "%c"

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.3.1.2.1 s "%c"
```

Example of configuring the client MAC address as remote-id user-defined string for dhcp snooping

```
CLI command:
dcs remote-agent-id user-defined "%c"

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.4.1.2.1 s "%c"
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Template:
%aX: ip-address of the vlan X in format A.B.C.D
%c: client mac
%h: hostname
%p: short port name (fa 0/1)
%P: long port name (fa 1/0/1)
%t: port type
%m: mac-address of port in format H-H-H-H-H-H
%M: mac-address of system in format H-H-H-H-H-H
%u: unit number
%s: slot number
%i: port ifIndex
%v: vlan id
%: single %

Configuring user-defined encoding ascii/binary(hex) for agent-curcuit-id/remote-id

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.{agent-curcuit-id(3) | remote-id
(4)}.1.3.{protocol} i {ascii(1) | binary(2)}
```

Example of configuring agent-curcuit-id user-defined string transmission in binary format for dhcp snooping

```
CLI command:
dcs agent-circuit-id suboption-type dhcpv4 user-defined binary

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.3.1.3.1 i 2
```

Protocol:
1 — dhcp snooping;
2 — dhcpv6 snooping;
3 — pppoe-ia snooping;
4 — dhcp-relay.

Example of configuring remote-id user-defined string transmission in binary format for dhcp snooping

```
CLI command:
dcs remote-agent-id suboption-type dhcpv4 user-defined binary

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.4.1.3.1 i 2
```

Configuring user-defined add-subtypes for agent-curcuit-id/remote-id

MIB: ELTEX-MES-ISS-DCS-MIB.mib

Tables used: eltMesIssDcsObjects — 1.3.6.1.4.1.35265.1.139.13.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.13.1.1.{agent-curcuit-id(3) | remote-id
(4)}.1.4.{protocol} i {ascii(1) | binary(2)}
```

Example of configuring agent-curcuit-id user-defined string transmission with the addition of option subtype for dhcp snooping

```
CLI command:
dcs agent-circuit-id suboption-type dhcpv4 user-defined add-subtypes

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.3.1.4.1 i 1
```

Example of configuring remote-id user-defined string transmission with the addition of option subtype for dhcp snooping

```
CLI command:
dcs remote-agent-id suboption-type dhcpv4 user-defined add-subtypes

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.13.1.1.4.1.4.1 i 1
```

16.9 *IPv6 ND inspection*

Enabling/disabling ND inspection globally

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.1.1.0 i {disable(1) | enable(2)}
```

Example of enabling ND inspection globally

```
CLI command:
ipv6 nd inspection

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.25.1.1.1.1.0 i 2
```

Enabling ND inspection on interface

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.4.{ifindex} i {create and go(4) |
destroy(6)} \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.1.{ifindex} i {disable(1) | enable(2)}
```

Configuring the trust mode on interface

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.3.{ifindex} i {untrusted(1) | trusted(2)}
```

Binding the ND inpspection policy to interface

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.2.{ifindex} i {policy-id}
```

Example of enabling ND inspection on gi0/5 interface, setting the trust mode and binding the ND inspection policy with the number 1

```
CLI command:
interface gi 0/5
ipv6 nd inspection
ipv6 nd inspection trust-state untrusted
ipv6 nd inspection attach-policy 1

SNMP command:
```

```
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.4.5 i 4 \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.1.5 i 2 \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.3.5 i 2 \
1.3.6.1.4.1.35265.1.139.25.1.1.2.1.1.2.5 i 1
```

16.9.1 Configuring ND inspection policies

Creating ND inspection src-addr-acl

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.3.2.1.5.{acl_number}.{seq} i {create and go(4) |
destroy(6)} \
1.3.6.1.4.1.35265.1.139.25.1.1.3.2.1.3.{acl_number}.{seq} x {"src-ipv6-address"}
\
1.3.6.1.4.1.35265.1.139.25.1.1.3.2.1.4.{acl_number}.{seq} i {prefix-len}
```

Example of configuring ND inspection ipv6-src-address acl with number 1 for prefix 2001::ff:fe0d:ea31/128

```
CLI command:
ipv6 nd inspection src-addr-acl 1 seq 5 2001::ff:fe0d:ea31/128

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.2.1.5.1.5 i 4 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.2.1.3.1.5 x "20010000000000000000fffe0dea31"
\
1.3.6.1.4.1.35265.1.139.25.1.1.3.2.1.4.1.5 i 128
```

Creating ND inspection tgt-addr-acl

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.3.3.1.5.{acl_number}.{seq} i {create and go(4) |
destroy(6)} \
1.3.6.1.4.1.35265.1.139.25.1.1.3.3.1.3.{acl_number}.{seq} x {"tgt-ipv6-address"}
\
1.3.6.1.4.1.35265.1.139.25.1.1.3.3.1.4.{acl_number}.{seq} x {prefix-len}
```

Example of configuring ND inspection ipv6-tgt-address acl with number 1 for prefixes 2001::ff:fe0d:ea31/128

```
CLI command:
ipv6 nd inspection tgt-addr-acl 1 seq 5 2001::ff:fe0d:ea31/128

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.3.1.5.1.5 i 4 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.3.1.3.1.5 x "20010000000000000000fffe0dea31"
\
1.3.6.1.4.1.35265.1.139.25.1.1.3.3.1.4.1.5 i 128
```

Creating ipv6 nd inspection tgt-mac-addr-acl

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.3.4.1.4.{acl_number}.{seq} i {create and go(4) |
destroy(6)}\
1.3.6.1.4.1.35265.1.139.25.1.1.3.4.1.3.{acl_number}.{seq} x {"tgt-mac"}
```

Example of setting ND inspection tgt-mac-address acl with number 1 for address 00:00:00:0d:ea:31

```
CLI command:
ipv6 nd inspection tgt-mac-acl 1 seq 5 00:00:00:0d:ea:31

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.4.1.4.1.5 i 4 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.4.1.3.1.5 x "0000000dea31"
```

Creating a policy

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.3.1.1.8.{policy-id} i {create and go(4) |
destroy(6)}
```

Binding ipv6 nd inspection acl to a policy

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.3.1.1.{src-addr-acl(2) | tgt-addr-acl(6) | tgt-
mac-addr-acl(7)}.{policy-id} i {acl-num | none(0)}
```

Configuring the rflag, sflag, oflag parameters

MIB: ELTEX-MES-ISS-IP6-MIB

Tables used: eltMesIssL2Ip6NDInsp — 1.3.6.1.4.1.35265.1.139.25.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.25.1.1.3.1.1.{rflag(3) | sflag(4) | oflag(5)}.{policy-
id} i {none(1)| disabled(2) | enabled(3)}
```

Example of creating policy 1 and binding src-addr-acl 1 to it

```
CLI command:
ipv6 nd inspection policy 1
match src-addr-acl 1
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.1.1.8.1 i 4 \
```

```
1.3.6.1.4.1.35265.1.139.25.1.1.3.1.1.2.1 i 1 \
1.3.6.1.4.1.35265.1.139.25.1.1.3.1.1.7.1 i 1
```

16.10 *Access Control Lists (ACL) configuration*

UDB offset configuration

MIB: fsissacl.mib,fsissmet.mib,ELTEX-MES-ISS-ACL-MIB.mib

Tables used: eltMesIssAclUdbOffsetConfigTable — 1.3.6.1.4.1.35265.1.139.1.3.1

```
1.3.6.1.4.1.35265.1.139.1.3.1.1.2.{udb_index(1-4)} i {offset-type}
1.3.6.1.4.1.35265.1.139.1.3.1.1.3.{udb_index(1-4)} i {offset-byte(0-255)}
```

Example of UDB offset configuration

```
CLI command:
user-defined offset 1 l4 2

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.1.3.1.1.2.1 i 4 \
1.3.6.1.4.1.35265.1.139.1.3.1.1.3.1 i 2
```

Offset-type:

l2 (1);
ethertype (2);
l3 (3);
l4 (4).

For MES24xx UDB, the offset can only be even.

MAC ACL Configuration

MIB: fsissacl.mib,fsissmet.mib,ELTEX-MES-ISS-ACL-MIB.mib

Tables used: issAclL2FilterTable — 1.3.6.1.4.1.29601.2.21.2.1
eltMesIssAclL2FilterTable — 1.3.6.1.4.1.35265.1.139.1.1.1
eltMesIssAclIfTable — 1.3.6.1.4.1.35265.1.139.1.5.1
issMetroL2FilterTable — 1.3.6.1.4.1.2076.81.8.4.1.1

To change any of the ACL parameters, issAclL2FilterStatus (1.3.6.1.4.1.29601.2.21.2.1.1.11) must be switched to the notInService (2) state.

L2 ACL Status Management

```
1.3.6.1.4.1.29601.2.21.2.1.1.11.{mac-acl} i {active(1) | notInService (2) |
create nad wait(5) | destroy(6)}
```

Setting the rule priority

 **By default, the priority of all rules is the same. ACL with a smaller number have higher priority.**

```
1.3.6.1.4.1.29601.2.21.2.1.1.2.{mac-acl} i {priority}
```

Configuring ethertype filtering

```
1.3.6.1.4.1.29601.2.21.2.1.1.3.{mac-acl} i {ethertype_decimal}
```

Configuring filtering by destination MAC address

```
1.3.6.1.4.1.29601.2.21.2.1.1.5.{mac-acl} x {dst-mac-address}
1.3.6.1.4.1.35265.1.139.1.1.1.1.1.{mac-acl} x {dst-mac-mask}
```

Configuring filtering by source MAC address

```
1.3.6.1.4.1.29601.2.21.2.1.1.6.{mac-acl} x {src-mac-address}
1.3.6.1.4.1.35265.1.139.1.1.1.1.2.{mac-acl} x {src-mac-mask}
```

Configuring filtering by vlan-id

```
1.3.6.1.4.1.29601.2.21.2.1.1.7.{mac-acl} i {vlan-id}
```

Configuring filtering by CoS label

```
1.3.6.1.4.1.2076.81.8.4.1.1.1.4.{mac-acl} i {CoS}
```

Setting an action for a rule

```
1.3.6.1.4.1.29601.2.21.2.1.1.9.{mac-acl} i {permit(1) | deny(2)}
```

Setting a sub-action for a rule

```
1.3.6.1.4.1.29601.2.21.2.1.1.14.{mac-acl} i {none(0) | modify-vlan(1) | nested-
vlan(2) | modify-cvlan(3)}
1.3.6.1.4.1.29601.2.21.2.1.1.15.{mac-acl} i {modify/nested-vlan-id}
```

Configuring udb offset binding
The values and mask consist of 8 bytes, 2 bytes for each udb-offset

```
1.3.6.1.4.1.35265.1.139.1.1.1.1.3.{mac-acl} x {bytes}
1.3.6.1.4.1.35265.1.139.1.1.1.1.4.{mac-acl} x {bytes-mask}
```

Assignment to the physical interface

```
1.3.6.1.4.1.29601.2.21.2.1.1.8.{mac-acl} x {port-mask(8 bytes)}
1.3.6.1.4.1.29601.2.21.2.1.1.8.{mac-acl} x "0800000000000000" - port 5
```

LAG assignment

```
1.3.6.1.4.1.29601.2.21.2.1.1.20.{mac-acl} x {port-mask(12 bytes)}
1.3.6.1.4.1.29601.2.21.2.1.1.20.{mac-acl} x "000000000000000080000000" - po 1
```

Assignment to l2vlan

```
1.3.6.1.4.1.35265.1.139.1.5.1.1.6.1.{vlan-id}.1.{mac-acl(1)  |  ip-acl(2)}.{mac-acl-index} i {create and go(4) | destroy(6)}
```

MAC ACL configuration example

```
CLI command:
mac access-list extended 1010
permit 00:00:00:00:10:00 ff:ff:ff:ff:ff:00 00:00:00:00:20:00 ff:ff:ff:ff:ff:00 encaptype 0x800 vlan 500 cvlan-priority 5 sub-action modify-vlan 600 user-defined offset1 0xf000 0xff00
!
interface gi 0/5
mac access-group 1010 in
!
interface po 1
mac access-group 1010 in
!
vlan 400
mac access-group 1010 in

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.21.2.1.1.11.1010 i 5 \
1.3.6.1.4.1.29601.2.21.2.1.1.3.1010 i 2048 \
1.3.6.1.4.1.29601.2.21.2.1.1.5.1010 x "000000001000" \
1.3.6.1.4.1.35265.1.139.1.1.1.1.1.1010 x "fffffffff00" \
1.3.6.1.4.1.29601.2.21.2.1.1.6.1010 x "000000002000" \
1.3.6.1.4.1.35265.1.139.1.1.1.1.2.1010 x "fffffffff00" \
1.3.6.1.4.1.29601.2.21.2.1.1.7.1010 i 500 \
1.3.6.1.4.1.2076.81.8.4.1.1.1.4.1010 i 5 \
1.3.6.1.4.1.29601.2.21.2.1.1.9.1010 i 1 \
1.3.6.1.4.1.29601.2.21.2.1.1.14.1010 i 1 \
1.3.6.1.4.1.29601.2.21.2.1.1.15.1010 i 600 \
1.3.6.1.4.1.29601.2.21.2.1.1.8.1010 x "0800000000000000" \
1.3.6.1.4.1.29601.2.21.2.1.1.20.1010 x "00000000000000000800000000" \
1.3.6.1.4.1.35265.1.139.1.5.1.1.6.1.400.1.1.1010 i 4 \
1.3.6.1.4.1.35265.1.139.1.1.1.1.3.1010 x "f000000000000000" \
1.3.6.1.4.1.35265.1.139.1.1.1.1.4.1010 x "ff000000000000000" \
1.3.6.1.4.1.29601.2.21.2.1.1.11.1010 i 1
```

Viewing the MAC ACL counter

MIB: fsissacl.mib

Tables used: issAclL2FilterTable — 1.3.6.1.4.1.29601.2.21.2.1
snmpwalk -v2c -c <community> <IP address> \
.1.3.6.1.4.1.29601.2.21.2.1.1.10.{acl_num}

Example of viewing a counter for ACL 1:

```
CLI command:
show access-lists 1
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
 .1.3.6.1.4.1.29601.2.21.2.1.1.10.1
```

Zeroing the MAC ACL counter

MIB: fsissacl.mib

Tables used: issAclL2FilterTable — 1.3.6.1.4.1.29601.2.21.2.1
snmpwalk -v2c -c <community> <IP address> \
.1.3.6.1.4.1.29601.2.21.2.1.1.23.{acl_num} i 1

Example of zeroing the counter for ACL 1:

```
CLI command:
clear mac access-list 1 counter
SNMP command:
snmpset-v2c -c private 192.168.1.30 \
 1.3.6.1.4.1.29601.2.21.2.1.1.23.1 i 1
```

IP/IPv6 ACL configuration

MIB: fsissacl.mib,fsissmet.mib, ELTEX-MES-ISS-ACL-MIB.mib

Tables used: issAclL3FilterTable — 1.3.6.1.4.1.29601.2.21.3.1
eltMesIssAclL3FilterTable — 1.3.6.1.4.1.35265.1.139.1.2.1
eltMesIssAclIfTable — 1.3.6.1.4.1.35265.1.139.1.5.1

To change any of the ACL parameters, issAclL3FilterStatus (1.3.6.1.4.1.29601.2.21.3.1.1.25) must be switched to the notInService (2) state.

L3 ACL Status Management

```
1.3.6.1.4.1.29601.2.21.3.1.1.25.{ip-acl} i {active(1) | notInService (2) | create nad wait(5) | destroy(6)}
```

Determining the rule priority

By default, the priority of all rules is the same. ACL with a smaller number have higher priority.

```
1.3.6.1.4.1.29601.2.21.3.1.1.2.{ip-acl} i {priority}
```

Configuring filtering by protocol type

```
1.3.6.1.4.1.29601.2.21.3.1.1.3.{ip-acl} i {protocol-type}
```

Configuring L3 ACL type (IP/IPv6)

```
1.3.6.1.4.1.29601.2.21.3.1.1.6.{ip-acl} i {ipv4(1) | ipv6(2)}
```

Configuring filtering by destination prefix

```
1.3.6.1.4.1.29601.2.21.3.1.1.7.{ip-acl} x {ipv4/ipv6-address}
1.3.6.1.4.1.29601.2.21.3.1.1.9.{ip-acl} i {prefix-lenght}
```

Configuring filtering by sourse prefix

```
1.3.6.1.4.1.29601.2.21.3.1.1.8.{ip-acl} x {ipv4/ipv6-address}
1.3.6.1.4.1.29601.2.21.3.1.1.10.{ip-acl} i {prefix-lenght}
```

Configuring filtering by destination L4 ports

```
1.3.6.1.4.1.29601.2.21.3.1.1.11.{ip-acl} i {min-port}
1.3.6.1.4.1.29601.2.21.3.1.1.12.{ip-acl} i {max-port}
```

Configuring filtering by sourse L4 ports

```
1.3.6.1.4.1.29601.2.21.3.1.1.13.{ip-acl} i {min-port}
1.3.6.1.4.1.29601.2.21.3.1.1.14.{ip-acl} i {max-port}
```

Configuring ToS filtering

```
1.3.6.1.4.1.29601.2.21.3.1.1.19.{ip-acl} i {tos-bits}
```

Configuring DSCP filtering

```
1.3.6.1.4.1.29601.2.21.3.1.1.20.{ip-acl} i {dscp}
```

Configuring filtering by traffic-class

```
1.3.6.1.4.1.35265.1.139.1.2.1.1.3.{ip-acl} i {traffic-class}
```

Setting an action for a rule

```
1.3.6.1.4.1.29601.2.21.3.1.1.22.{ip-acl} i {permit(1) | deny(2)}
```

Setting a sub-action for a rule

```
1.3.6.1.4.1.29601.2.21.3.1.1.26.{ip-acl} i {none(0) | modify-vlan(1) | nested-
vlan(2) }
1.3.6.1.4.1.29601.2.21.3.1.1.27.{ip-acl} i {modify/nested-vlan-id}
```

Configuring udb offset binding (not supported for ipv6)
the values and mask consist of 8 bytes, 2 bytes for each udb-offset

```
1.3.6.1.4.1.35265.1.139.1.2.1.1.1.{ip-acl} x {bytes}
1.3.6.1.4.1.35265.1.139.1.2.1.1.2.{ip-acl} x {bytes-mask}
```

Assignment to the physical interface

```
1.3.6.1.4.1.29601.2.21.3.1.1.15.{ip-acl} x {port-mask(8 bytes)}
```

LAG assignment

```
1.3.6.1.4.1.29601.2.21.3.1.1.30.{ip-acl} x {port-mask(12 bytes)}
```

Assignment to l2vlan

```
1.3.6.1.4.1.35265.1.139.1.5.1.1.6.1.{vlan-id}.1.2.{ip-acl} i {create and go(4)
| destroy(6)}
```

Example of IP ACL configuration

```
CLI command:
ip access-list extended 1010
deny udp 1.1.0.0 255.255.0.0 gt 500 2.2.2.0 255.255.255.0 range 400 800 dscp 56
user-defined offset1 0xf000 0xff00
!
interface gi 0/5
ip access-group 1010 in
!
interface po 1
ip access-group 1010 in
!
vlan 400
ip access-group 1010 in
```

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.21.3.1.1.25.1010 i 5 \
1.3.6.1.4.1.29601.2.21.3.1.1.3.1010 i 17 \
1.3.6.1.4.1.29601.2.21.3.1.1.6.1010 i 1 \
1.3.6.1.4.1.29601.2.21.3.1.1.7.1010 x "01010000" \
1.3.6.1.4.1.29601.2.21.3.1.1.9.1010 i 16 \
1.3.6.1.4.1.29601.2.21.3.1.1.8.1010 x "0202020" \
1.3.6.1.4.1.29601.2.21.3.1.1.10.1010 i 24 \
1.3.6.1.4.1.29601.2.21.3.1.1.11.1010 i 400 \
1.3.6.1.4.1.29601.2.21.3.1.1.12.1010 i 800 \
1.3.6.1.4.1.29601.2.21.3.1.1.13.1010 i 501 \
1.3.6.1.4.1.29601.2.21.3.1.1.20.1010 i 56 \
1.3.6.1.4.1.29601.2.21.3.1.1.22.1010 i 2 \
1.3.6.1.4.1.35265.1.139.1.2.1.1.1.1010 x "f000000000000000" \
1.3.6.1.4.1.35265.1.139.1.2.1.1.2.1010 x "ff00000000000000" \
1.3.6.1.4.1.29601.2.21.3.1.1.15.1010 x "0800000000000000" \
1.3.6.1.4.1.29601.2.21.3.1.1.30.1010 x "00000000000000000080000000" \
1.3.6.1.4.1.35265.1.139.1.5.1.1.6.1.400.1.2.1010 i 4 \
1.3.6.1.4.1.29601.2.21.3.1.1.25.1010 i 1
```

Viewing the IP ACL counter:

MIB: fsissacl.mib

Tables used: issAclL3FilterTable — 1.3.6.1.4.1.29601.2.21.3.1
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.21.3.1.1.23.{acl_num}

Example of viewing a counter for ACL 1001:

```
CLI command:
show access-lists 1001
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
 1.3.6.1.4.1.29601.2.21.3.1.1.23.1001
```

Reset the IP ACL counter

MIB: fsissacl.mib

Tables used: issAclL3FilterTable — 1.3.6.1.4.1.29601.2.21.3.1
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.21.3.1.1.33.{acl_num} i 1

Example of zeroing the counter for ACL 1001

```
CLI command:
clear ip access-list 1001 counter
SNMP command:
snmpset-v2c -c private 192.168.1.30 \
.1.3.6.1.4.1.29601.2.21.3.1.1.33.1001 i 1
```

16.11 *Configuring the protection against DOS attacks*

Setting the time interval between SYSLOG messages about exceeding the limit of incoming TCP traffic with the SYN flag

MIB: ELTEX-MES-ISS-FIREWALL-MIB
Tables used: eltMesIssFwlGlobals — 1.3.6.1.4.1.35265.1.139.27.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.27.1.1.1.0 i {interval}
```

Example of setting 15 seconds interval

```
CLI command:
firewall
notification interval 15
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.27.1.1.1.0 i 15
```

Enabling the speed limit for incoming TCP traffic with the SYN flag

MIB: ELTEX-MES-ISS-FIREWALL-MIB

Tables used: eltMesIssFwlGlobals — 1.3.6.1.4.1.35265.1.139.27.1.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.27.1.2.1.0 i  {true(1), false(2)}
```

Example of enabling the speed limit for incoming TCP traffic with the SYN flag

```
CLI command:
firewall
ip tcp limit syn-flag enable
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.27.1.2.1.0 i 1
```

Setting the speed value for incoming TCP traffic with the SYN flag

MIB: ELTEX-MES-ISS-FIREWALL-MIB
Tables used: eltMesIssFwlTcpSynLimitInterfaceTable — 1.3.6.1.4.1.35265.1.139.27.1.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.27.1.2.2.1.1.{ifIndex} i {disable(0), pps(1..262143)}
```

Example of setting the speed value for incoming TCP traffic with the SYN flag

```
CLI command:
interface gigabitethernet 0/13
ip tcp limit syn-flag 40
exit

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.27.1.2.2.1.1.13 i 40
```

17 FUNCTIONS OF THE DHCP RELAY INTERMEDIARY

Enabling/disabling DHCP Relay globally

MIB: fsmidhcpRelay.mib

Tables used: fsMIDhcpContextTable — 1.3.6.1.4.1.29601.2.92.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.92.2.1.1.2.0 i {enable(1), disabled(2)}
```

Example of enabling DHCP Relay globally

```
CLI command:
service dhcp-relay

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.92.2.1.1.2.0 i 1
```

Setting the IP address of an available DHCP server for DHCP Relay

MIB: fsmidhcpRelay.mib

Tables used: fsMIDhcpRelaySrvAddressTable — 1.3.6.1.4.1.29601.2.92.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.92.2.2.1.2.0.{IP-address сервера} i {active (1),
notInService (2), notReady (3), createAndGo (4), createAndWait (5), destroy
(6)}
```

Example of configuring the IP address of a DHCP server for DHCP Relay

```
CLI command:
ip dhcp server A.B.C.D

SNMP command:
snmpset -v2c -c private 192.168.1.30\
1.3.6.1.4.1.29601.2.92.2.2.1.2.0.192.168.1.1 i 4
```

Activating the transfer of DHCP packets to an available DHCP server

MIB: fsmidhcpRelay.mib

Tables used: fsMIDhcpContextTable — 1.3.6.1.4.1.29601.2.92.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.92.2.1.1.3.0 i {enable(1), disabled(2)}
```

Example of activating the transfer of DHCP packets to an available DHCP server

```
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.92.2.1.1.3.0 i 1
```

Viewing the status of DHCP Relay

MIB: fsmidhcpRelay.mib

Tables used: fsMIDhcpContextTable — 1.3.6.1.4.1.29601.2.92.2.1

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.92.2.1.1.2

snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.92.2.1.1.3
```

Example of viewing the status of DHCP Relay

```
CLI command:
show ip dhcp relay information

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.92.2.1.1.2
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.92.2.1.1.3
```

Viewing the status of the IP address of DHCP server for DHCP Relay

MIB: fsmidhcpRelay.mib

Tables used: fsMIDhcpRelaySrvAddressTable — 1.3.6.1.4.1.29601.2.92.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.92.2.2.1.2
```

Example of viewing the status of DHCP server IP address for DHCP Relay

```
SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.92.2.2.1.2
```

18 QUALITY OF SERVICE (QOS)

18.1 *QoS configuration*

Setting the speed limit of outgoing traffic on Ethernet ports

MIB: eltMesIssAclRateCtrlIgrBandwidth.mib

Tables used: issExtRateCtrlEntry — 1.3.6.1.4.1.2076.81.8.1.1.1.5

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.81.8.1.1.1.5.{ifindex} i {limiter value}
```

Example of setting an outgoing traffic speed limit of 100 Mbps on GigabitInterface0/23 interface

```
CLI command:
rate-limit output 100000

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.81.8.1.1.1.5.23 i 100000
```

Setting the speed limit of incoming traffic on Ethernet ports

MIB: eltMesIssAclRateCtrlIgrBandwidth.mib

Tables used: eltMesIssAclRateCtrlEntry — 1.3.6.1.4.1.35265.1.139.1.4.1.1.7

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.1.4.1.1.7.{ifindex} i {limiter value}
```

Example of setting an incoming traffic speed limit of 100 Mbps on GigabitInterface0/23 interface

```
CLI command:
rate-limit input 100000

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.1.4.1.1.7.23 i 100000
```

Configuring the CoS label source on interface

MIB: ELTEX-MES-ISS-QOS-MIB.mib

Tables used: eltMesIssQoSRemarkPortTable — 1.3.6.1.4.1.35265.1.139.5.1.4.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.5.1.4.1.1.3.{ifindex} i {none(1), user-priority(2),
inner-vlan(3)}
```

Example of setting the copy of CoS label from C-vlan to S-vlan when using dot1q tunnel

```
CLI command:
interface                                                              gi0/5
qos def-vlanPri source inner-vlanPri

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.5.1.4.1.1.3.5 i 3
```

Example of configuring CoS label for all traffic on interface with the qos interface gi 0/5 def-user-priority 7 command

```
CLI command:
interface gi0/5
qos def-vlanPri source user-pri

SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.35265.1.139.5.1.4.1.1.3.5 i 2
```

Viewing QoS statistics on interface, the number of packets extracted from queues

MIB: fsqosxtd.mib

Tables used: fsQoSCoSQStatsDeQPkts — 1.3.6.1.4.1.29601.2.6.1.5.2.1.4

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.5.2.1.4.{ifIndex}
```

Example of viewing the number of packets extracted from queues on gi 0/2 interface

```
CLI command:
show qos queue-stats interface gi 0/2

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.5.2.1.4.2
```

Viewing QoS statistics on the interface, the number of dropped packets

MIB: fsqosxtd.mib

Tables used: fsQoSCoSQStatsDiscardPkts — 1.3.6.1.4.1.29601.2.6.1.5.2.1.6

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.5.2.1.6.{ifIndex}
```

Example of viewing the number of packets dropped on gi 0/2 interface

```
CLI command:
show qos queue-stats interface gi 0/2

SNMP command:
snmpwalk -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.5.2.1.6.2
```

Creating/deleting a list of traffic classification criteria

MIB: fsqosxtd.mib

Tables used: fsQoSClassMapTable — 1.3.6.1.4.1.29601.2.6.1.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.{classMapId} i {active(1), notInService(2),
notReady(3), createAndGo(4), createAndWait(5), destroy(6)}

snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.2.1.{macACL(3), ipACL(4)}.{classMapId} i {aclId}
```

Example of creating a list of traffic classification criteria

```
CLI command:
class-map 1008
  match access-group ip-access-list 1108
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.4.1008 u 1108
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 1
```

Example of deleting a list of traffic classification criteria

```
CLI command:
no class-map 1008

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 6
```

Adding criteria for classifying traffic by MAC ACL and IP ACL

MIB: fsqosxtd.mib

Tables used: fsQoSClassMapTable — 1.3.6.1.4.1.29601.2.6.1.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.2.1.3.{classMapId} i {macAclId}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.2.1.4.{classMapId} i {ipAclId}
```

Example of creating a list of traffic classification criteria

```
CLI command:
class-map 1008
  match access-group ip-access-list 1108
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.4.1008 u 1108
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 1
```

Example of deleting a list of traffic classification criteria

```
CLI command:
no class-map 1008

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 6
```

Setting/deleting an internal priority for the specified class

MIB: fsqosxtd.mib

Tables used: fsQoSClassToPriorityTable — 1.3.6.1.4.1.29601.2.6.1.2.3, fsQoSClassMapTable — 1.3.6.1.4.1.29601.2.6.1.2.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.3.1.4.{trafficClass} i {active(1), notInService(2),
notReady(3), createAndGo(4), createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.3.1.2.{trafficClass} u {regenPri}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.3.1.2.{trafficClass} s {groupName}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.{classMapId} i {active(1), notInService(2),
notReady(3), createAndGo(4), createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.2.2.1.6.{classMapId} u {trafficClass}
```

Example of setting internal priority 6 for class 1008, priority class ID is 3008

```
CLI command:
class-map 1008
  set class 1008 regen-priority 6 group-name GR1008
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.3.1.4.1008 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.3.1.2.1008 u 6
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.3.1.3.1008 s GR1008
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.3.1.4.1008 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.6.1008 u 1008
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.2.2.1.10.1008 i 1
```

Initially, an entry is created in the fsQoSClassToPriorityTable table with id 3008, then this entry is binding to class-map 1008.

Creating/deleting a traffic classification strategy

MIB: fsqosxtd.mib

Tables used: fsQoSPolicyMapTable — 1.3.6.1.4.1.29601.2.6.1.3.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.2.1.37.{policyMapId} i {active(1), notInService(2),
notReady(3), createAndGo(4), createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.2.1.4.{policyMapId} u {trafficClass}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.2.1.5.{policyMapId} i {vlanPri(1), ipDscp(3)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.2.1.6.{policyMapId} u {0-63}
```

Example of setting a traffic classification strategy

```
CLI command:
policy-map 3008
```

```
  set policy class 1008 default-priority-type vlanPri 4

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.37.3008 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.4.3008 u 1008
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.5.3008 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.6.3008 u 4
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.37.3008 i 1
```

Setting the speed limit for outgoing traffic

MIB: fsqosxtd.mib, ELTEX-MES-ISS-QOS-MIB.mib

Tables used: fsQoSMeterTable — 1.3.6.1.4.1.29601.2.6.1.3.1,
eltMesIssQoSMeterTable — 1.3.6.1.4.1.35265.1.139.5.1.2.1

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.11.{meterId} i {active(1), notInService(2),
notReady(3), createAndGo(4), createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.3.{meterId} i {avgRate(2), srTCM(3), trTCM(4)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.5.{meterId} u {colorAware(1), colorBlind(2)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.6.{meterId} u {CIR: 0-65535}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.7.{meterId} u {CBS: 0-65535}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.8.{meterId} u {EIR: 0-65535}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.1.1.9.{meterId} u {EBS: 0-65535}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.35265.1.139.5.1.2.1.1.1.{meterId} i {bytes(1), packets(2)}
```

Example of setting a limit of 2048 bytes according to avgRate algorithm

```
CLI command:
meter 508
  meter-type avgRate cir 2048 mode bytes

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.1.1.11.508 i 5
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.1.1.3.508 i 2 \
1.3.6.1.4.1.29601.2.6.1.3.1.1.6.508 u 2048 \
1.3.6.1.4.1.35265.1.139.5.1.2.1.1.1.508 i 1
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.1.1.11.508 i 1
```

Setting a limit for the flow rate

MIB: fsqosxtd.mib

Tables used: fsQoSPolicyMapTable — 1.3.6.1.4.1.29601.2.6.1.3.2

```
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.2.1.37.{policyMapId} i {active(1), notInService(2),
notReady(3), createAndGo(4), createAndWait(5), destroy(6)}
snmpset -v2c -c <community> <IP address> \
1.3.6.1.4.1.29601.2.6.1.3.2.1.7.{policyMapId} u {meterId}
```

Example of setting a limit for the flow rate

```
CLI command:
policy-map 3008
  set meter 508
  exit

SNMP command:
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.37.3008 i 2
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.7.3008 u 508
snmpset -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.29601.2.6.1.3.2.1.37.3008 i 1
```

19 ROUTING

19.1 *Static routing*

Viewing the routing table

MIB: IP-FORWARD-MIB

Tables used: ipCidrRouteTable — 1.3.6.1.2.1.4.24.4

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.2.1.4.24.4
```

Example

```
CLI command:
show ip route

SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.2.1.4.24.4
```

APPENDIX A. THE METHOD OF CALCULATING THE BIT MASK

Bitmasks consist of 128 bytes (256 hexadecimal digits in total).
Each digit represents four ports. The required field is determined by the port number.

Example 1

Writing a bitmask for GigabitEthernet 0/20-21 interfaces:

- for 1G interfaces, ifIndex starts with 1;
- for GigabitEthernet 0/20 port, ifIndex is 20, for GigabitEthernet 0/21 it is 21.

Determining the discharge number:

20/4=5 21/4=5.2 (Each digit is responsible for 4 ifIndex. When dividing ifindex by 4 to determine the number of digits to be recorded, the resulting value is rounded up).

If GigabitEthernet ports 0/20-21 (ifindex 20, 21) are nedded, then they should be written in the 5th and 6th fields.

In binary sequence 5, the field will be written as follows 0001 (The last 1 is the 20 index). Converting to HEX, we get 1.

In binary sequence 6, the field will be written as follows 1000 (The first 1 is 21 index). Converting to HEX, we get 8.

In total, there will be 4 zeros in the bitmask, 1, 8: 000018.

TECHNICAL SUPPORT

For technical assistance in issues related to operation of ELTEX Enterprise Ltd. equipment, please contact our Service Center:

Feedback form on the website: **https://eltex-co.com/support/**

Visit ELTEX official website to get the relevant technical documentation and software, benefit from our knowledge base, send us online request or consult a Service Center Specialist.

Official website: **https://eltex-co.com/**
Download center: **https://eltex-co.com/support/downloads/**