



Access switches,  
industrial switches

## **MES14xx, MES24xx, MES3708P**

MES Ethernet switches monitoring and configuration via SNMP,  
firmware version 10.2.3

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## SYMBOLS

Symbol	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 define ranges.
«   »	In the command description, this character means 'or'.
« / »	This sign separates possible and default values when specifying variable values.
<i>Calibri Italic</i>	Calibri Italic is used to indicate variables and parameters that should be replaced with an appropriate word or string.
<b>Bold</b>	Notes and warnings are shown in semibold italic.
< <b><i>Bold Italic</i></b> >	Keyboard keys are shown in bold italic within angle brackets.
<b>Courier New</b>	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 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.
MES3708P	- indexes 1-10 — GigabitEthernet 0/1-10; - indexes 64-72 — Port-Channel 1-8.

- **index-l3** — L3 interface index. It is possible to create up to eight L3 interfaces on MES14xx/MES24x/MES3708P devices. When creating L3 interface via CLI, indexes are assigned in order starting from 74. It is recommended to assign indexes for L3 interfaces within 74-81. Index 73 is always 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 the access via SNMP.

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

- **private** — rights for recording (rw);
- **public** — rights for reading (ro).

## 3 FILE OPERATIONS

### 3.1 Operation with SFTP, TFTP servers

#### 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" \
1.3.6.1.4.1.2076.81.19.10.0 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.cfg
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.cfg" \
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.cfg
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.cfg" \
1.3.6.1.4.1.2076.81.19.10.0 i 1
```

#### Copying of configuration to the 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.cfg 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 1 \
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.cfg" \
1.3.6.1.4.1.2076.81.1.18.0 i 1
```

### Example of copying from a SFTP server to startup-config

**CLI command:**

```
copy sftp://UsernameSFTP:PasswordSFTP@192.168.1.1/MES-config.cfg 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 1 \
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.cfg" \
1.3.6.1.4.1.2076.81.1.18.0 i 1
```

### 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" \
1.3.6.1.4.1.2076.81.19.9.0 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.cfg
```

**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.cfg" \
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.cfg
```

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.cfg" \  
1.3.6.1.4.1.2076.81.19.9.0 i 1
```

### Copying of configuration to the non-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.cfg 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.cfg" \  
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.cfg 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 a 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.cfg" \  
1.3.6.1.4.1.2076.81.19.7.0 i 1
```

### Viewing copy status in non-volatile memory

**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
```

#### **Viewing copy status in startup-config**

SNMP command:

```
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.81.1.19.0
```



**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

### Viewing copy status in volatile memory

**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
```

#### **Viewing copy status in running-config**

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

## **3.2 Switch autoconfiguration**

### Enable/Disable 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 auto-configuration 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**

### View 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
```

### **View 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
```

## 4 SYSTEM MANAGEMENT

### 4.1 System resources

#### View 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
```

#### View 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
```

#### **CPU load monitoring example**

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}
```

### **CPU load monitoring example**

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
```

### **RAM load monitoring example**

```
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
```

### **FLASH load monitoring example**

```
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
```

### View 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
```

### View 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 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
```

### View 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 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
```

### View system MAC address of the switch

**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 system MAC address of the switch

```
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
```

## View port Uptime

**MIB:** SNMPv2-MIB, IF-MIB

**Tables used:** sysUpTime — 1.3.6.1.2.1.1.3, ifEntry — 1.3.6.1.2.1.2.1

```
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: View 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.**

## View information about the firmware and bootloader version

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

**Tables used:** eltMesIssSysBootVarTable — 1.3.6.1.4.1.35265.1.139.18.1.1

Firmware version for the first and the second image

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.4.1
```

Bootloader version:

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.4.2
```

Number of the first and the second image commit:

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.5.1
```

Number of the bootloader commit:

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.5.2
```

Number of the first and the second image build:

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.6.1
```

Number of the first and the second image MD5 Digest:

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.7.1
```

Number of the bootloader MD5 Digest<sup>1</sup>:  
 snmpwalk -v2c -c <community> <IP address> \  
 1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.7.2

Date and time of assembly of the first and the second image:  
 snmpwalk -v2c -c <community> <IP address> \  
 1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.8.1

Date and time of assembly of the bootloader:  
 snmpwalk -v2c -c <community> <IP address> \  
 1.3.6.1.4.1.35265.1.139.18.1.1.3.1.1.8.2

### Example of viewing information about 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
```

## 4.2 Device management

### Set/change 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}"
```

### hostname "mes2428" assignment example

```
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
```

### Switch reboot example

```
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
```

<sup>1</sup> Only for MES2424

### 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 "hh: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 "00:05" \  
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
```

---

### Enable/disable sending 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)}
```

#### **Enable sending snmp-trap coldstart example**

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
```

### Enable/disable sending 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)}
```

#### **Enable sending snmp-trap warmstart example**

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
```

## 5 SYSTEM TIME CONFIGURATION

### Date and time configuration

**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 configuration 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"
```

### Configuration of 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 configuration 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
```

### IPv4 SNTP server address configuration

**MIB:** fsntp.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 SNMP server version 3

CLI command:

```
set snmp 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.

### IPv6 SNMP server address configuration

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 SNMP server version 3

CLI command:

```
set snmp unicast-server ipv6 2001:db8::2 primary version 3
```

SNMP command:

```
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.149.1.2.5.1.8.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.0.2 i 5 \
1.3.6.1.4.1.2076.149.1.2.5.1.3.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.0.2 i 3 \
1.3.6.1.4.1.2076.149.1.2.5.1.4.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.0.2 i 123 \
1.3.6.1.4.1.2076.149.1.2.5.1.5.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.0.2 i 1 \
1.3.6.1.4.1.2076.149.1.2.5.1.8.2.16.32.1.13.184.0.0.0.0.0.0.0.0.0.0.0.2 i 1
```



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

### Daylight saving change configuration

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 daylight saving change configuration

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"
```

### Enable/disable 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 an SNTP client on a 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
```

### Sntp timezone configuration

**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 sntp timezone configuration

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"
```

### Unicast SNTP requests sending interval configuration

**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 the SNTP requests sending interval configuration

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 values 16-16384 and should be the degree of two. For example, 16, 32, 64, etc.**



---

### Configuration of the maximum response time from the SNMP 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 the SNMP server response waiting time**

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
```

### Configuration of the maximum number of attempts to connect to the SNMP 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 the SNMP server response waiting time**

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 INTERFACE CONFIGURATION

### 6.1 Ethernet interface parameters

#### View 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 viewing Description 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
```

#### View 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: View GigabitEthernet 0/2 speed**

```
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
```

#### View administrative state of the port

**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: View 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)**

### Enable/disable configured 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
```

### View operative state of the port

**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: View 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)**

### View the counter of unicast packets 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
```

---

*View the counter of multicast packets 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
```

*View the counter of broadcast packets 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 counter of received octets 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
```



**Octet is the number of bytes.**

**1 octet = 1 byte**

*View 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 counter of CRC Errors 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
```

#### **View 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 counter of Symbol Errors 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 of incoming switch ports load**

**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), KBPPS(4)}.{ifindex}.{interval in
seconds}
```

#### **Example of viewing load 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 of outgoing switch ports load**

**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), KBPPS(6)}.{ifindex}.{5 seconds(5), 1
minute (60), 5 minutes(300)}
```

#### **Example of viewing outgoing load 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
```

### Speed autonegotiation configuration

**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 autonegotiation 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
```

### Duplex mode configuration

**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 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 the duplex mode, you need to disable autonegotiation.**

### Interface speed configuration

**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 configuration 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, you need to disable autonegotiation.**

### Combo port mode configuration

**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 GigabitEthernet 0/25 interface configuration**

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
```

### View list of ports united in 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 GigabitEthernet 0/2 interface membership in 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
```

### System MTU configuration:

**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 system MTU configuration**

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 MTU on the interface:<sup>1</sup>

**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 MTU configuration on GigabitEthernet 0/2 interface**

CLI command:

```
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
```

## **6.2 VLAN configuration**

### Create/delete 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
```

### Port mode configuration

**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)}
```

---

<sup>1</sup> Only for MES2424



### Example of GigabitEthernet 0/2 interface configuration to the 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

```

#### Assign pvid to 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 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
in form of 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 on the desired VLAN.**

**2. An example of making a bitmap mask is given in the «APPENDIX A. Bitmask calculation method» section.**



### Example of changing to 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 delete this setting, set the Destroy(6) parameter in field 1.3.6.1.4.1.35265.54.1.1.2.1.1.5.{ifindex}.{ingress(1), egress(2)}.{c-vlan}

#### Assign 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} s "vlan name"
```

#### Example of assigning vlan 10 name

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"
```

#### View 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 vlan 10 name

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
```

#### Deny default VLAN on 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 denying the default vlan 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
```

## 6.3 L2PT configuration

### Changing 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

LACP:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.2076.137.2.3.0 x <multicast mac-address>
```

STP:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.2076.137.2.2.0 x <multicast mac-address>
```

LLDP:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.2076.137.2.13.0 x <multicast mac-address>
```

ISIS-I1/I2:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.2076.137.2.18.0 x <multicast mac-address>
```

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.2076.137.2.19.0 x <multicast mac-address>
```

Flow-control:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.2076.137.2.20.0 x <multicast mac-address>
```

PVST:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.35265.1.139.21.1.1.0 x <multicast mac-address>
```

VTP:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.35265.1.139.21.1.2.0 x <multicast mac-address>
```

OSPF:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.35265.1.139.21.1.3.0 x <multicast mac-address>
```

RIP:

```
snmpset -v2c -c <community> <IP address> 1.3.6.1.4.1.35265.1.139.21.1.4.0 x <multicast mac-address>
```

### Example of destination address change for 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 01aaaaaaaa
```

### Enabling the L2PT for 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

LACP:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.2076.137.2.8.1.2.<ifindex> i {peer(1) | tunnel(2)}
```

STP:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.2076.137.2.8.1.3.<ifindex> i {peer(1) | tunnel(2)}
```

LLDP:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.2076.137.2.8.1.10.<ifindex> i {peer(1) | tunnel(2)}
```

ISIS-I1/I2

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.2076.137.2.8.1.14.<ifindex> i {peer(1) | tunnel(2)}  
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.2076.137.2.8.1.15.<ifindex> i {peer(1) | tunnel(2)}
```

Flow-control:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.2076.137.2.8.1.16.<ifindex> i {peer(1) | tunnel(2)}
```

PVST:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.35265.1.139.21.1.5.1.1.<ifindex> i {peer(1) | tunnel(2)}
```

VTP:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.35265.1.139.21.1.5.1.2.<ifindex> i {peer(1) | tunnel(2)}
```

OSPF:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.35265.1.139.21.1.5.1.3.<ifindex> i {peer(1) | tunnel(2)}
```

RIP:

```
snmpset -v2c -c <community><IP address> \  
1.3.6.1.4.1.35265.1.139.21.1.5.1.4.<ifindex> i {peer(1) | tunnel(2)}
```

#### **Example of enabling L2PT for the RIP protocol on the 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 the 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
```

**View 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

**Example of viewing L2PT counters**

```
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 IPV4 ADDRESSING CONFIGURATION

### View the indexI3 — 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 the indexI3 — 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-I3} 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 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-I3} i {Active(1), CreatAndWaite(5),
Destroy(6)} \
1.3.6.1.2.1.31.1.1.1.18.{index-I3} s vlan{vid} \
1.3.6.1.4.1.2076.27.1.4.1.2.{index-I3} i 136 \
1.3.6.1.4.1.2076.27.1.4.1.8.{index-I3} 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
```

---

Create 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-13} a {ip address (DEC)} \  
1.3.6.1.4.1.2076.27.1.5.1.3.{index-13} a {netmask}
```

**Example of setting 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
```

View 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 setting 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
```



## 8 IPV6 ADDRESSING CONFIGURATION

### Enable/disable 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-13} 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
```

### Create 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-13}.{ each byte is decimal with
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-13}.{ each byte is decimal with
separator}.{prefix} i {global unicast(1), anycast(2), linklocal(3)} \
1.3.6.1.4.1.2076.28.1.2.4.1.4.{index-13}.{ each byte is decimal with
separator}.{prefix} i {Active(1), Create and wait(5), Destroy(6)}
```

### **Example of setting address: 2001:db08::100/64 interface vlan**

**CLI command:**

```
ipv6 address 2001:db08::100/64 unicast
```

**SNMP command:**

```
snmpset -v2c -c private 192.168.1.30 \
1.3.6.1.4.1.2076.28.1.2.4.1.4.74.32.1.219.8.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.1.0.64 i 5 \
1.3.6.1.4.1.2076.28.1.2.4.1.5.74.32.1.219.8.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.1.0.64 i 1 \
1.3.6.1.4.1.2076.28.1.2.4.1.4.74.32.1.219.8.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.1.0.64 i 1 \
```

## 9 MULTICAST ADDRESSING

### 9.1 Multicast addressing rules

#### Multicast-tv vlan (MVR) configuration

**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 into 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
```

## 10 CONTROL FUNCTIONS

### 10.1 TACACS+ protocol

#### Setting the port attribute as a string defined by the user

**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  
{строка}
```

#### **Example attribute setting 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
```

## 11 PORT MIRRORING

### Port Mirroring configuration

**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-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 mirroring traffic from GigabitEthernet 0/5-6 interfaces to an interface GigabitEthernet 0/10**

**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.**

### VLAN mirroring configuration

**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 mirroring traffic from GigabitEthernet 0/5 interface to GigabitEthernet 0/10 interface to 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.**



### Example of diagnostics date view on GigabitEthernet port 0/12

```
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 length of 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 A pair length view on GigabitEthernet port 0/12

```
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
```



#### **The following types of parameters are possible:**

- 17 — A pair length**
- 18 — B pair length**
- 19 — C pair length**
- 20 — D pair length**

#### View short circuit information for 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 an A pair short circuit information for the 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
```



#### **Parameter types:**

- 1 — pair A**
- 2 — pair B**
- 3 — pair C**
- 4 — pair D**

**The valid values are:**

- 0 — No pair short circuit**
- 1 — Pair short circuit**

## Viewing information about the break 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 an A pair break information for the 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
```



#### **Parameter types:**

- 5 — A pair break**
- 6 — B pair break**
- 7 — D pair break**
- 8 — C pair break**

**The valid values are:**

- 0 — No pair break**
- 1 — Pair break**

## **12.2 Optical transceiver diagnostics**

### 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 request for temperature reading of the transceiver from GigabitEthernet interface 0/25**

```
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
```



#### **Parameter type can take the following values:**

- 1 — SFP transceiver temperature;**
- 2 — power voltage in V;**
- 3 — power current in mA;**
- 4 — power level on trasmission in  $\mu$ W;**
- 5 — power level on reception in  $\mu$ W.**



### Output 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 a transceiver type connector from a 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
```



#### **May take the following values:**

- 0 — unknown;**
- 1 — sc;**
- 7 — lc;**
- 11 — optical-pigtail**
- 255 — vendorspec**

### Output of information about the type of transceiver

**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 a transceiver type from a 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
```



#### **May take the following values:**

- 0 — unknown;**
- 1 — gbic;**
- 2 — sff;**
- 3 — sfp-sfpplus;**
- 255 — vendorspec**

### View 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 a fiber diameter from a 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
```



**May take the following values:**

- 1 — fiber9;**
- 2 — fiber50;**
- 3 — fiber625;**
- 4 — cooper;**
- 65535 — unknown;**

### View transceiver parameters

**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 a transceiver vendor from a 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
```



**Parameter type can take the following values:**

- 3 — Ethernet standard;**
- 4 — Transceiver wave length;**
- 5 — Vendor;**
- 6 — Serial number;**
- 8 — Length in meters;**
- 9 — DDM support (True(1), False(2));**
- 10 — Inventory number;**
- 11 — Revision;**

## 13 POWER OVER ETHERNET (POE)

### View PoE power consumption/nominal capacity

**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 power consumption view**

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 Power over Ethernet on the 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
```

## 14 SECURITY FEATURES

### 14.1 Port security functions

#### Trusted port-security configuration

**MIB:** fscfa.mib

**Tables used:** ifMainExtTable — 1.3.6.1.4.1.2076.27.1.12

```
snmpset -v2c -c <community> <IP address> \  
1.3.6.1.4.1.2076.27.1.12.1.11.{ifindex} i {untrusted(0), trusted(1)}
```

#### **Example of GigabitEthernet 0/2 interface configuration to the list of trusted**

CLI command:

```
port-security-state trusted
```

SNMP command:

```
snmpset -v2c -c private 192.168.1.30 \  
1.3.6.1.4.1.2076.27.1.12.1.11.2 i 1
```

#### View port-security mode

**MIB:** fscfa.mib

**Tables used:** ifMainExtTable — 1.3.6.1.4.1.2076.27.1.12

```
snmpwalk -v2c -c <community> <IP address> \  
1.3.6.1.4.1.2076.27.1.12.1.11
```

#### **Example of port mode view**

CLI command:

```
show interfaces port-security-state
```

SNMP command:

```
snmpwalk -v2c -c public 192.168.1.30 \  
1.3.6.1.4.1.2076.27.1.12.1.11
```

#### View port-security state

**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 state**

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
```

### Enable/disable protected port on the 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 protected port on the 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
```

### Enable/disable port-isolation on the 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 the 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, you need to set the value to 6.**

### View 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
```

## Create a static bind 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-13}.{IP address} x {„MAC address“} \  
1.3.6.1.2.1.4.22.1.4.{index-13}.{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, assign the value 2 in the field 1.3.6.1.2.1.4.22.1.4.**
- 2. The IP address of the device and the IP address of the created static record in the arp table must be on the same subnet.**

## View 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 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 pNetToMediaPhysAddress table value displays the IP address and vlan MAC address.**
- 2. The dot1qTpFdbEntry table value shows the status and the identification number of the port from which the device is available.**

## 14.2 DHCP control

### Enable/disable 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)} 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
```

### Enable/disable DHCP/DHCPv6 snooping vlan

**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} i {Active(1), Create and wait(5),
Destroy(6)} \
1.3.6.1.4.1.29601.2.3.2.1.1.15.{vlan} 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} i {enable(1),
disable(2)}
```

#### **Example of enabling DHCPv6 snooping on 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
```

### Enable/disable IP-source Guard on the 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 the 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
```

### Enable/disable IP-source Guard to the 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

#### Enable/disable IP-source Guard to the L2VLAN:

```
snmpset -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.9.1.1.3.1.2.{vlan-id} i {1(enable) | 2(disable)}
```

#### Enable/disable IPv6-source Guard to the L2VLAN:

```
snmpset -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.9.1.1.3.1.3.{vlan-id} i {1(enable) | 2(disable)}
```

#### **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
```

### Enable/disable ARP Inspection

**MIB:** fsipdb.mib

**Tables used:** fslpArpInspect — 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
```

### Uplink/downlink port role configuration

**MIB:** fscfa.mib

**Tables used:** ifMainTable — 1.3.6.1.4.1.2076.27.1.4

```
snmpset -v2c -c <community> <IP address> \  
1.3.6.1.4.1.2076.27.1.4.1.15.{ifindex} i {uplink(1), downlink(2)}
```

#### **Example of configuring GigabitEthernet 0/2 as uplink**

```
CLI command:  
set port-role uplink  
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
```



### Uplink/downlink port role view

**MIB:** fscfa.mib

**Tables used:** ifMainTable — 1.3.6.1.4.1.2076.27.1.4

```
snmpwalk -v2c -c <community> <IP address> \
1.3.6.1.4.1.2076.27.1.4.1.15
```

#### **Example of port role view**

```
CLI command:
show interfaces port-role
SNMP command:
snmpwalk -v2c -c public 192.168.1.30 \
1.3.6.1.4.1.2076.27.1.4.1.15
```

## **14.3 Port based client authentication (802.1x)**

### Enable 802.1X switch authentication mode

**MIB:** dot1xPaeSystem.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
```

### Enable periodic re-authentication of the client

**MIB:** draft-ietf-bridge-8021x.mib

**Tables used:** dot1xAuthReAuthEnabled — 1.0.8802.1.1.1.2.1.1.13

```
snmpset -v2c -c <community> <IP address> \
1.0.8802.1.1.1.2.1.1.13.{ifIndex} i {true(1), false(2)}
```

#### **Example of enabling periodic re-authentication of the client on the GigabitEthernet 0/2 interface**

```
CLI command:
interface GigabitEthernet 0/2
dot1x reauthentication
SNMP command:
snmpset -v2c -c private 192.168.1.30 \
1.0.8802.1.1.1.2.1.1.13.2 i 1
```

### Period between re-authentications configuration

**MIB:** draft-ietf-bridge-8021x.mib

**Tables used:** dot1xAuthConfigTable — 1.0.8802.1.1.1.2.1.1.12

```
snmpset -v2c -c <community> <IP address> \  
1.0.8802.1.1.1.2.1.1.12.{ifIndex} u {size 300-4294967295}
```

#### **Example of setting a period of 300 seconds between re-authentications 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 \  
1.0.8802.1.1.1.2.1.1.12.2 u 300
```

### Configuration of 802.1X authentication modes on the interface

**MIB:** draft-ietf-bridge-8021x.mib

**Tables used:** dot1xAuthConfigTable — 1.0.8802.1.1.1.2.1.1.6

```
snmpset -v2c -c <community> <IP address> \  
1.0.8802.1.1.1.2.1.1.6.{ifIndex} i {force-Unauthorized(1), auto(2), force-  
Authorized(3)}
```

#### **Example of 802.1X authentication modes configuration on the GigabitEthernet 0/2 interface**

```
CLI command:  
interface GigabitEthernet 0/2  
dot1x port-control auto  
SNMP command:  
snmpset -v2c -c private 192.168.1.30 \  
1.0.8802.1.1.1.2.1.1.6.50 i 2
```

## **14.4 Broadcast storm control (storm-control)**

### Broadcast traffic restriction units configuration

**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 broadcast traffic measurement 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
```

### Traffic restriction configuration 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 a limit of multicast traffic to 16kbps on GigabitEthernet 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 the traffic in 16kbps steps.**

### Traffic restriction configuration in pps

**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 a limit of multicast traffic to 1pps on GigabitEthernet 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

### Configuration of 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 the action when exceeding to the limit of multicast traffic 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

## 15 QUALITY OF SERVICE – QOS

### 15.1 QoS configuration

#### Configuration of outgoing traffic rate limitation on Ethernet ports

**MIB:** eltMeslssAclRateCtrlIgrBandwidth.mib

**Tables used:** issExtRateCtrlEntry — 1.3.6.1.4.1.2076.81.8.1.1.5

```
snmpset -v2c -c <community> <IP address> \  
1.3.6.1.4.1.2076.81.8.1.1.5.{ifindex} i {limiter value}
```

**Example of configuring limit for outgoing traffic speed of 100 Mbit/s on the GigabitInterface0/23 interface.**

```
CLI command:  
rate-limit output 100000  
SNMP command:  
snmpset -v2c -c private 192.168.1.30 \  
1.3.6.1.4.1.2076.81.8.1.1.5.23 i 100000
```

#### Configuration of incoming traffic rate limitation on Ethernet ports

**MIB:** eltMeslssAclRateCtrlIgrBandwidth.mib

**Tables used:** eltMeslssAclRateCtrlEntry - 1.3.6.1.4.1.35265.1.139.1.4.1.7

```
snmpset -v2c -c <community> <IP address> \  
1.3.6.1.4.1.35265.1.139.1.4.1.7.{ifindex} i {limiter value}
```

**Example of configuring limit for incoming traffic speed of 100 Mbit/s on the GigabitInterface0/23 interface.**

```
CLI command:  
rate-limit input 100000  
SNMP command:  
snmpset -v2c -c private 192.168.1.30 \  
1.3.6.1.4.1.35265.1.139.1.4.1.7.23 i 100000
```

## 16 ROUTING

### 16.1 Static Routing

#### View 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. BITMASK CALCULATION METHOD

Bitmasks consist of 128 bytes (hexadecimal bits only 256).

Each digit represents four ports. The required field shall be determined by the port number.

### Example 1

Record a bitmask for GigabitEthernet interfaces 0/20-21:

- for 1G interfaces ifIndex starts with 1;
- for GigabitEthernet port 0/20 ifIndex is 20, for GigabitEthernet 0/21 is 21.

Determination of the digit number:

$20/4=5$   $21/4=5,2$  (Each bit is responsible for 4 ifIndex. When dividing ifindex by 4 to determine the digit number for a record, the resulting value is rounded up).

If we need GigabitEthernet ports 0/20-21 (ifindex 20, 21), they should be recorded in the 5th and 6th fields.

In binary sequence 5 field will be recorded as follows 0001 (Last 1 — 20 index). After transfer to HEX, we get 1.

In binary sequence 6, the field will be recorded as follows 1000 (First 1 — 21 indices). After transfer to HEX, we get 8.

Total in the bit mask will be 4 zeros, 1, 8: 000018.

---

## TECHNICAL SUPPORT

Contact Eltex Service Centre to receive technical support regarding our products:

Feedback form on the site: <https://eltex-co.com/support/>

Servicedesk: <https://servicedesk.eltex-co.ru>

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 Centre Specialist in our technical forum.

Official website: <https://eltex-co.com/>

Technical forum: <https://forum.eltex-co.ru/>

Knowledge base: <https://docs.eltex-co.ru/display/EKB/Eltex+Knowledge+Base>

Download center: <https://eltex-co.com/support/downloads/>