Moxa Command Line Interface (FW_5.x)

Version 1.8, March 2025

www.moxa.com/products

Models covered by this user manual (only applies to products using firmware version 5.0 or higher):
EDS-510E, EDS-518E, EDS-528E, EDS-G508E, EDS-G512E, EDS-G516E, EDS-G512E-8PoE, IKS-6726A, IKS-6728A, IKS-6728A-8PoE, IKS-G6524A, ICS-G7526A, ICS-G7528A, ICS-G7748A, ICS-G7750A, ICS-G7752A, IKS-G6824A, ICS-G7826A, ICS-G7828A, ICS-G7848A, ICS-G7850A, ICS-G7852A, PT-G7728, PT-G7828

Moxa Command Line Interface (FW_5.x)

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1. Command Modes

CLI (Command Line Interface)

The CLI (command line interface) for Moxa switches can be accessed through either the serial console or Telnet console. For either type of connection, access to the command line interface is generally referred to as an EXEC session.

Configuring a Switch to CLI Mode

The default configuration mode for both the serial console and Telnet console is MENU mode. To change the Moxa switch to CLI configuration mode, **Login Mode** from **Basic Settings** and then press **y** to activate the change. You will then be able to view the CLI display in the console. (Note that the default login user name is **admin**, without a password.)

1. Select **Basic Settings**.

```
                        EDS-408A series   V3.0 build 11062110
-----------------------------------------------------------------------------

1.Basic Settings        - Basic settings for network and system parameter.
2.SNMP Settings         - The settings for SNMP.
3.Comm. Redundancy      - Establish Ethernet communication redundant path.
4.Traffic Prioritization- Prioritize Ethernet traffic to help determinism.
5.Virtual LAN           - Set up a VLAN by IEEE802.1Q VLAN or Port-based VLAN.
6.Multicast Filtering   - Enable the multicast filtering capability.
7.Bandwidth Management   - Restrict unpredictable network traffic.
8.Auto Warning          - Warning email and/or relay output by events.
9.Line Swap             - Fast recovery after moving devices to different ports.
a.Set Device IP         - Assign IP addresses to connected devices.
b.Diagnosis             - Ping command and the settings for Mirror port, LLDP.
c.Monitor               - Monitor a port and network status.
d.MAC Address Table     - The complete table of Ethernet MAC Address List.
e.System log            - The settings for Syslog and Event log.
f.Exit                  - Exit
                - Use the up/down arrow keys to select a category,
                        and then press Enter to select. -
```

2. Select **Login mode**.

```
                MOXA EtherDevice Switch EDS-408A-3M-SC-T
 Basic Settings
[System] [Password] [Accessible IP] [Port] [Network] [Time] [DIP] [GARP Timer]
[Backup Media] [Restart] [Factory default] [Upgrade] [Login mode] [Activate]
[Main menu]
 Toggle login mode
 ESC: Previous menu    Enter: Select


    Basic Settings
```

3. Press **y** to activate.

```
                  MOXA EtherDevice Switch EDS-408A-3M-SC-T
 Basic Settings
[System] [Password] [Accessible IP] [Port] [Network] [Time] [DIP] [GARP Timer]
[Backup Media] [Restart] [Factory default] [Upgrade] [Login mode] [Activate]
[Main menu]
 Toggle login mode
 ESC: Previous menu    Enter: Select



             Current login mode: Menu

             Press Y to change to CLI mode? [y/N]
```

4. Now log in to access CLI display mode.

```
login as:
```

To permanently change the login mode as CLI, users can connect the device via telnet or SSH by following the commands on page 54 under the "login mode" section.

Basic Operation

The CLI is organized in different configuration levels. When you first enter CLI mode, type **?** to view a quick help panel that shows the basic commands of the first configuration level. Type any of the commands shown on the screen to access the next configuration level. The quick help panel, accessed from any level by typing **?**, is a useful tool for understanding the commands in any level.

```
                    EDS-408A series  V3.0 build 11062110
-----------------------------------------------------------------------------
EDS-408A-3M-SC-T#
  quit                  - Exit command line interface
  exit                  - Exit command line interface
  reload                - Halt and perform a cold restart
  terminal              - Configure terminal page length
  login                 - Change login mode
  copy                  - Copy from one file to another
  save                  - Save running configuration to flash
  ping                  - Send echo messages
  clear                 - Clear information
  show                  - Show running system information
  configure             - Enter configuration mode
EDS-408A-3M-SC-T#
```

To enter the next level, type the commands shown in the console.

```
EDS-408A-3M-SC-T# configure
EDS-408A-3M-SC-T(config)#
```

To leave access the next higher level, type **exit**.

```
EDS-408A-3M-SC-T(config)# exit
EDS-408A-3M-SC-T#
```

To jump directly back to the first level, type **Ctrl + z**.

```
EDS-408A-3M-SC-T(config-vlan)#
EDS-408A-3M-SC-T#
```

Useful Interactive "Help" Features

The CLI includes several types of interactive commands. The **Help** commands are listed in the following table:

Command	Purpose
?	Provides a brief description of the Help feature in any command level.
Partial command?	Provides a list of commands that begin with the character string (no space between the command and the question mark).
Partial command<Tab>	Completes a partial command name (no space between the command and <Tab>).
Command ?	Lists the keywords, arguments, or both associated with the command (type a space between the command and the question mark).
Command keyword ?	Lists the arguments that are associated with the keyword (type a space between the keyword and the question mark).

Understanding All Commands

To understand all the details of the commands supported in the CLI of Moxa switches, refer to the following table.

Mode	Access Method	Prompt	Exit Method	About This Mode
User EXEC	Begin a session with your switch and login with **user**.	Switch>	Enter exit or quit.	Use this mode to display system information.
Privileged EXEC	Begin a session with your switch and login with **admin**.	Switch#	Enter exit or quit.	Use this mode to verify commands that you have entered.
Global configuration	While in privileged EXEC mode, enter the configure command.	Switch(config)#	To exit to privileged EXEC mode, enter exit or press Ctrl-Z.	Use this mode to configure parameters that apply to the entire switch.
Redundancy configuration	From global configuration mode, enter the redundancy command.	Switch(config-rdnt)#	To exit to privileged EXEC mode, press Ctrl-Z. To exit to global configuration mode, enter the exit command.	Use this mode to configure Turbo Ring V1/V2, Turbo Chain, and Spanning Tree parameters.
Interface configuration	From global configuration mode, specify an interface by entering the interface command followed by an interface identification.	Switch(config-if)#	To exit to privileged EXEC mode, press Ctrl-Z. To exit to global configuration mode, enter the exit command.	
Router configuration	From global configuration mode, specify a protocol by entering the router command.	Switch(config-rip)#
Switch(config-ospf)#	To exit to privileged EXEC mode, press Ctrl-Z. To exit to global configuration mode, enter the exit command.	

2. Commands

access-ip

Use **access-ip** in the VLAN configuration command as to restrict access to the switch to specified IP addresses. Use the **no** form of this command to disable this feature or to remove the IP addresses from access list.

Commands

access-ip [ip-address netmask]
no access-ip [ip-address netmask]

Syntax	**access-ip**	Enable the accessible IP list
Description	ip-address	IP address
	netmask	IP netmask
Defaults	The feature is disabled by default.	
Command Modes	Management configuration	
Usage Guidelines	This feature will take effect when the **access-ip** command is executed.	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface mgmt`
	`MOXA(config-vlan)# access-ip 192.168.127.22 255.255.0.0`	

Error messages	IP or netmask invalid	
	Access IP list full	
Related commands	show interface mgmt access-ip	

accounting tacacs+ login

Commands

accounting tacacs+ login {primary | secondary } server-ip <STRING:server_ip>

accounting tacacs+ login {primary | secondary } server-port <UINT:server_port>

accounting tacacs+ login {primary | secondary } shared-key <STRING:shared_key>

accounting tacacs+ login timeout <UINT:timeout>

accounting tacacs+ login enable

no accounting tacacs+ login enable

Syntax Description	**accounting**	Configure accounting mechanism
	tacacs+	TACACS+ setting
	login	Set tacacs+ setting to login authentication
	primary	Configure primary server setting
	secondary	Configure secondary server setting
	server-ip	Set tacacs+ server ip to login authentication
	server_ip	Set tacacs+ server ip to login authentication
	server-port	Set tacacs+ server port to login authentication
	server_port	Set tacacs+ server port to login authentication
	shared-key	Set tacacs+ server shared key to login authentication
	shared_key	Set tacacs+ server shared key to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
	enable	Enable accounting mechanism
Defaults	ip is default NULL port is default 1812 key is default NULL timeout is default 5 second	
Command Modes	Global configuration	
Usage Guidelines	timeout is range from 1 to 255	

Examples	`MOXA(config)# accounting tacacs+ login enable`
	`MOXA(config)# accounting tacacs+ login primary server-ip 168.95.1.1`
	`MOXA(config)# accounting tacacs+ login primary server-port 1813`
	`MOXA(config)# accounting tacacs+ login primary shared-key moxa`
	`MOXA(config)# accounting tacacs+ login secondary server-ip 168.95.1.2`
	`MOXA(config)# accounting tacacs+ login secondary server-port 1813`
	`MOXA(config)# accounting tacacs+ login secondary shared-key moxa`
	`MOXA(config)# accounting tacacs+ login timeout 10`	

Error messages	Invalid Server Port!!!	
Related commands	show authentication tacacs+ login	

acl port

Use **acl port** interface configuration commands on the switch to attach ACL to the port. Use the **no** form of this command to return to the default setting.

<u>**Commands**</u>

acl id **{ in | out}**
no acl id

Syntax Description	**acl**	Configure access control list
	id	The access list ID
	in	Inbound traffic
	out	Outbound traffic
Defaults	N/A	
Command Modes	**Interface configuration**	
Usage Guidelines	Only ICS-G7000 and ICS-G8000 serial product support command "acl id out"	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# acl 10 in`
	`MOXA(config-if)# no acl 10`	

Error messages	Invalid ID!	
Related commands	N/A	

acl rule

Use the **storm-control** global configuration command on configure access control list parameter. Use the **no** form of this command to disable it or return to the default.

<u>Commands</u>

acl id **{ ip-based | mac-based} name** [namestring]

acl id **ip-based {permit|deny}** srcip [dstip][protocol][port]

acl id **mac-based {permit|deny}** srcmac [dstmac][ethertype][vid]

no acl id

no acl id **rule** ruleindex

Syntax Description	**acl**	Configure access control list
	id	The access list ID
	ip-based	IP-based ACL
	mac-based	MAC-based ACL
	name	ACL name
	namestring	ACL name
	permit	forward packets rule
	deny	Drop packets rule
	srcip	Source IP address and subnet mask
	dstip	Destination IP address and subnet mask
	protocol	Protocol number
	port	TCP/UDP port number
	srcmac	Source MAC address and MAC mask.
	dstmac	Destination MAC address and MAC mask.
	ethertype	Ether type
	vid	VLAN ID
	rule	Remove rule from access control list
	ruleindex	Remove rule indexfrom access control list
Defaults	deny srcip: any dstip: any protocol: 0x0 to 0xff port: 0x0 to 0xffff srcmac: any dstmac: any ethertype: 0x600 to 0xffff vid: 1 to 4096	
Command Modes	Global configuration	
Usage Guidelines	id: 0 to 16 protocol : 1(ICMP), 2(IGMP), 4(IP over IP), 6(TCP), 11(UDP) ethertype: 0x800(IPv4), 0x0806(ARP), 0x8035(RARP), 0x86dd(IPv6), 0x8809(IEEE802.3), 0x8892(PROFINET), 0x88cc(LLDP), 0x88F7(IEEE1588)	

Examples	`MOXA# configure terminal`
	`MOXA(config)# acl 10 ip-based name ip10`
	`MOXA(config)# acl 11 mac-based name mac11`
	`MOXA(config)# acl 10 ip-based permit any any any any`
	`MOXA(config)# acl 10 ip-based deny 192.168.127.0/255.255.255.0`
	`192.168.1.0/255.255.255.0 1 22-21`
	`MOXA(config)# acl 11 mac-based permit any any any`
	`MOXA(config)# acl 11 mac-based deny`
	`00:90:E8:01:02:03/FF:FF:FF:FF:02:03 00:90:E8`
	`:04:05:06/FF:FF:FF:FF:FF:FF 800 100`
	`MOXA(config)# no acl 10`
	`MOXA(config)# no acl 11 rule 1`	

Error messages	This ID is used by MAC-based ACL!
	Invalid ID!
	Invalid IP/Mask format!
	Invalid protocol code!
	Invalid socket port number!
	Duplicate rules.
	Full rules! A list up to 10 rules.
	This ID is used by IP-based ACL!
	Invalid MAC/Mask format!
	Invalid ether type!
	Invalid VLAN ID!
Related commands	show acl id

authentication dot1x

Use the **authentication dot1x** global configuration command to set user authentication database for 802.1x. Use the **no** form of this command to reset default user authentication database for 802.1x.

Commands

authentication dot1x { radius | local }

authentication dot1x radius local

no authentication dot1x

Syntax Description	**authentication**	Configure authentication mechanism
	dot1x	Set dot1x auth option
	radius	Set login auth by RADIUS
	local	Set login auth by local
Defaults	local	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal	
	MOXA(config)# authentication dot1x radius	
	MOXA(config)# authentication dot1x local	
	MOXA(config)# no authentication dot1x	
Error messages	N/A	
Related commands	N/A	

authentication dot1x reauth

Use the **authentication dot1x reauth** global configuration command to enable 802.1x re-authentication function. Use the **no** form of this command to disable.

Use the **authentication dot1x reauth period** global configuration command to set 802.1x re-authentication timer. Use the **no** form of this command to reset default.

Commands

authentication dot1x reauth

authentication dot1x reauth period second

no authentication dot1x reauth

no authentication dot1x reauth period

Syntax Description	**authentication**	Configure authentication mechanism
	dot1x	Set dot1x auth option
	reauth	Set dot1x auth re-auth enable/ disable
	period	dot1x auth re-auth time setting
	second	Set dot1x auth re-auth period time
Defaults	re-authentication is default enabled reauth period is default 3600 second	
Command Modes	Global configuration	
Usage Guidelines	second is range from 60 to 65535	
Examples	MOXA# configure terminal MOXA(config)# authentication dot1x reauth MOXA(config)# authentication dot1x reauth period 600 MOXA(config)# no authentication dot1x reauth period MOXA(config)# no authentication dot1x reauth	
Error messages	Invalid Re-Auth Period!!! Must not be smaller than 60 or greater than 65535	
Related commands	N/A	

authentication local dot1x

Use the **authentication local dot1x** global configuration command to configure local user database for dot1x. Use the **no** form of this command to reset default.

Commands

authentication local dot1x username name **password** pw [**desc** desc]

no authentication local dot1x all-user

no authentication local dot1x username name

Syntax Description	authentication	Configure authentication mechanism
	local	Local db setting
	dot1x	Add local user to dot1x
	username	Add local user to dot1x
	name	Add local user to dot1x
	password	Add local user to dot1x
	pw	Add local user to dot1x
	desc	Add local user to dot1x
	desc	Add local user to dot1x
	all-user	Remove all local user to dot1x
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# authentication local dot1x username aaa password bbb desc tmpuser`
	`MOXA(config)# no authentication local dot1x username aaa`
	`MOXA(config)# no authentication local dot1x all-user`	

Error messages	Local Database is Full !!! Invalid User Name !!! Invalid User Password !!! Invalid User Description !!!	
Related commands	N/A	

authentication login

Use the **authentication login** global configuration command to set user authentication database for login. Use the **no** form of this command to reset default user authentication database for login.

Commands

authentication login { radius | tacacs+ | local }
authentication login radius local
authentication login tacacs+ local
no authentication login

Syntax Description	authentication	Configure authentication mechanism
	login	Set login auth option
	radius	Set login auth by RADIUS
	tacacs+	Set login auth by TACACS+
	local	Set login auth by local
Defaults	local	
Command Modes	Global configuration	
Usage Guidelines	**authentication login radius local** means using local database if radius server is not available **authentication login tacacs+ local** means using local database if tacacs+ server is not available	

Examples	`MOXA# configure terminal`
	`MOXA(config)# authentication login radius`
	`MOXA(config)# authentication login tacacs+`
	`MOXA(config)# authentication login local`
	`MOXA(config)# authentication login radius local`
	`MOXA(config)# authentication login tacacs+ local`
	`MOXA(config)# no authentication login`	

Error messages	N/A	
Related commands	N/A	

authentication mab

Use the **authentication mab** global configuration command to set user authentication database for mab. Use the **no** form of this command to reset default user authentication database for mab.

Commands

authentication mab radius
no authentication mab

Syntax Description	authentication	Configure authentication mechanism
	mab	Set mab auth option
	radius	Set login auth by RADIUS
Defaults	radius	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# authentication mab radius`
	`MOXA(config)# no authentication mab`	

Error messages	N/A	
Related commands		

authentication mab reauth

Use the **authentication mab reauth** global configuration command to enable mab re-authentication function. Use the **no** form of this command to disable.

Use the **authentication mab reauth period** global configuration command to set mab re-authentication timer. Use the **no** form of this command to reset default.

Commands

authentication mab reauth

authentication mab reauth period second

no authentication mab reauth

no authentication mab reauth period

Syntax Description	**authentication**	Configure authentication mechanism
	mab	Set mab auth option
	reauth	Set mab auth re-auth enable/ disable
	period	mab auth re-auth time setting
	second	Set mab auth re-auth period time
Defaults	re-authentication is default disabled	
	reauth period is default 3600 second	
Command Modes	Global configuration	
Usage Guidelines	second is range from 60 to 65535	
Examples	MOXA# configure terminal	
	MOXA(config)# authentication mab reauth	
	MOXA(config)# authentication mab reauth period 600	
	MOXA(config)# no authentication mab reauth period	
	MOXA(config)# no authentication mab reauth	
Error messages	Invalid Re-Auth Period!!! Must not be smaller than 60 or greater than 65535	
Related commands	N/A	

authentication mab restart

Use the **authentication mab restart** global configuration command to enable mab re-start function. Use the **no** form of this command to disable.

Use the **authentication mab restart period** global configuration command to set mab re-start timer. Use the **no** form of this command to reset default.

Commands

authentication mab restart

authentication mab restart period second

no authentication mab restart

no authentication mab restart period

Syntax Description	**authentication**	Configure authentication mechanism
	mab	Set mab auth option
	restart	Set mab auth re-start enable/ disable
	period	mab auth re- start time setting
	second	Set mab auth re- start period time
Defaults	re-start is default disabled restart period is default 60 second	
Command Modes	Global configuration	
Usage Guidelines	second is range from 5 to 300	

Examples	`MOXA# configure terminal`
	`MOXA(config)# authentication mab restart`
	`MOXA(config)# authentication mab restart period 61`
	`MOXA(config)# no authentication mab restart period`
	`MOXA(config)# no authentication mab restart`	

Error messages	Invalid Re-Start Period!!! Must not be smaller than 5 or greater than 300	
Related commands	N/A	

authentication radius dot1x-mab 1stServer

Use the **authentication radius dot1x-mab 1stServer** global configuration command to configure first radius server setting for 802.1x and MAB. Use the **no** form of this command to reset default.

Commands

authentication radius dot1x-mab 1stServer server-ip ip

authentication radius dot1x-mab 1stServer server-port port

authentication radius dot1x-mab 1stServer shared-key key

no authentication radius dot1x-mab 1stServer

Syntax Description	authentication	Configure authentication mechanism
	radius	Radius setting
	dot1x-mab	Set radius setting to dot1x and mab authentication
	1stServer	Set 1st radius setting to dot1x and mab authentication
	server-ip	Set 1st radius server ip to login authentication
	ip	Set 1st radius server ip to login authentication
	server-port	Set 1st radius server port to login authentication
	port	Set 1st radius server port to login authentication
	shared-key	Set 1st radius server shared key to login authentication
	key	Set 1st radius server shared key to login authentication
Defaults	ip is default NULL port is default 1812 key is default NULL	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# authentication radius dot1x-mab 1stServer server-ip 168.95.1.1 MOXA(config)# authentication radius dot1x-mab 1stServer server-port 1813 MOXA(config)# authentication radius dot1x-mab 1stServer share-key moxa MOXA(config)# no authentication radius dot1x-mab 1stServer	
Error messages	Invalid dot1x 1st Radius Server IP!!! To set 1st radius server ip, use-login-server must be disabled first Must be greater than 0 and smaller than 65536 To set 1st radius server port, use-login-server must be disabled first The length of Shared Key must be greater than 0 and smaller than 40. To set 1st radius server shared key, use-login-server must be disabled first	
Related commands	N/A	

authentication radius dot1x-mab 2ndServer

Use the **authentication radius dot1x-mab 2ndServer** global configuration command to configure second radius server setting for 802.1x and mab. Use the **no** form of this command to reset default.

<u>**Commands**</u>

authentication radius dot1x-mab 2ndServer server-ip ip

authentication radius dot1x-mab 2ndServer server-port port

authentication radius dot1x-mab 2ndServer shared-key key

no authentication radius dot1x-mab 2ndServer

Syntax Description	**authentication**	Configure authentication mechanism
	radius	Radius setting
	dot1x-mab	Set radius setting to dot1x and mab authentication
	2ndServer	Set 2nd radius setting to dot1x and mab authentication
	server-ip	Set 2nd radius server ip to login authentication
	ip	Set 2nd radius server ip to login authentication
	server-port	Set 2nd radius server port to login authentication
	port	Set 2nd radius server port to login authentication
	shared-key	Set 2nd radius server shared key to login authentication
	key	Set 2nd radius server shared key to login authentication
Defaults	ip is default NULL port is default 1812 key is default NULL	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# authentication radius dot1x-mab 2ndServer server-ip 168.95.1.1 MOXA(config)# authentication radius dot1x-mab 2ndServer server-port 1813 MOXA(config)# authentication radius dot1x-mab 2ndServer share-key moxa MOXA(config)# no authentication radius dot1x-mab 2ndServer	
Error messages	Invalid dot1x 2nd Radius Server IP!!! To set 2nd radius server ip, use-login-server must be disabled first Must be greater than 0 and smaller than 65536 To set 2nd radius server port, use-login-server must be disabled first The length of Shared Key must be greater than 0 and smaller than 40. To set 2nd radius server shared key, use-login-server must be disabled first	
Related commands	N/A	

authentication radius dot1x-mab use-login-server

Use the **authentication radius dot1x-mab use-login-server** global configuration command to enable radius server setting using login setting for 802.1x and mab. Use the **no** form of this command to reset default.

Commands

authentication radius dot1x-mab use-login-server

no authentication radius use-login-server

Syntax Description	authentication	Configure authentication mechanism
	radius	Radius setting
	dot1x-mab	Set radius setting to dot1x and mab authentication
	use-login-server	Set using login radius setting to dot1x and mab authentication
Defaults	disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# authentication radius dot1x-mab use-login-server MOXA(config)# no authentication radius dot1x-mab use-login-server	
Error messages	N/A	
Related commands	N/A	

authentication radius login

Use the **authentication radius login** global configuration command to configure radius server setting for login. Use the no form of this command to reset default.

Commands

authentication radius login server-ip ip

authentication radius login server-port port

authentication radius login shared-key key

authentication radius login timeout second

authentication radius login auth-type { pap | chap }

no authentication radius login

Syntax Description	**authentication**	Configure authentication mechanism
	radius	Radius setting
	login	Set radius setting to login authentication
	server-ip	Set radius server ip to login authentication
	ip	Set radius server ip to login authentication
	server-port	Set radius server port to login authentication
	port	Set radius server port to login authentication
	shared-key	Set radius server shared key to login authentication
	key	Set radius server shared key to login authentication
	timeout	Set radius server timeout value to login authentication
	second	Set radius server timeout value to login authentication
	auth-type	Set radius server auth type to login authentication
	pap	Set PAP radius auth type to login authentication
	chap	Set CHAP radius auth type to login authentication
Defaults	ip is default NULL port is default 1812 key is default NULL timeout is default 5 second auth type is default PAP	
Command Modes	Global configuration	
Usage Guidelines	second is range from 1 to 255	

Examples	`MOXA# configure terminal`
	`MOXA(config)# authentication radius login server-ip 168.95.1.1`
	`MOXA(config)# authentication radius login server-port 1813`
	`MOXA(config)# authentication radius login share-key moxa`
	`MOXA(config)# authentication radius login timeout 10`
	`MOXA(config)# authentication radius login auth-type chap`	

Error messages	Invalid Radius Server Must be greater than 0 and smaller than 65536 The length of Shared Key must be greater than 0 and smaller than 15 The Server timeout must be greater than 0 and smaller than 256!!!	
Related commands	N/A	

authentication radius login auth-type mschapv2

<u>**Commands**</u>

authentication radius login auth-type mschapv2

Syntax Description	authentication	Link disable function
	radius	Radius setting
	login	Set radius setting to login authentication
	auth-type	Set radius server auth type to login authentication
	mschapv2	Set MSCHAPv2 radius auth type to login authentication
Defaults	PAP	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	Moxa(config)# authentication radius login auth-type mschapv2	
Error messages	N/A	
Related commands	N/A	

authentication tacacs+ login

authentication tacacs+ login {primary | secondary } server-ip <STRING:server_ip>

authentication tacacs+ login {primary | secondary } server-port <UINT:server_port>

authentication tacacs+ login {primary | secondary } shared-key <STRING:shared_key>

authentication tacacs+ login timeout <UINT:timeout>

Syntax Description	**authentication**	Configure authentication mechanism
	tacacs+	TACACS+ setting
	login	Set tacacs+ setting to login authentication
	primary	Configure primary server setting
	secondary	Configure secondary server setting
	server-ip	Set tacacs+ server ip to login authentication
	server_ip	Set tacacs+ server ip to login authentication
	server-port	Set tacacs+ server port to login authentication
	server_port	Set tacacs+ server port to login authentication
	shared-key	Set tacacs+ server shared key to login authentication
	shared_key	Set tacacs+ server shared key to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
Defaults	ip is default NULL port is default 1812 key is default NULL timeout is default 5 second	
Command Modes	Global configuration	
Usage Guidelines	timeout is range from 1 to 255	
Examples	MOXA(config)# authentication tacacs+ login primary server-ip 168.95.1.1 MOXA(config)# authentication tacacs+ login primary server-port 1813 MOXA(config)# authentication tacacs+ login primary shared-key moxa MOXA(config)# authentication tacacs+ login secondary server-ip 168.95.1.2 MOXA(config)# authentication tacacs+ login secondary server-port 1813 MOXA(config)# authentication tacacs+ login secondary shared-key moxa MOXA(config)# authentication tacacs+ login timeout 10	
Error messages	Invalid Server Port!!!	
Related commands	show authentication tacacs+ login	

authentication tacacs+ login auth-type

Use the **authentication tacacs+ login auth-type** global configuration command to configure tacacs+ server authentication type for login. Use the **no** form of this command to reset default.

Commands

authentication tacacs+ login auth-type { ascii | pap | chap | mschap }

no authentication tacacs+ login auth-type

Syntax Description	**authentication**	Configure authentication mechanism
	tacacs+	TACACS+ setting
	login	Set tacacs+ setting to login authentication
	auth-type	Set tacacs+ auth type to login authentication
	ascii	Set ASCII tacacs+ auth type to login authentication
	pap	Set PAP tacacs+ auth type to login authentication
	chap	Set CHAP tacacs+ auth type to login authentication
	mschap	Set MSCHAP tacacs+ auth type to login authentication
Defaults	default is ASCII	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# authentication tacacs+ login auth-type ascii`	
Error messages	N/A	
Related commands	N/A	

authorization tacacs+ login

Commands

authorization tacacs+ login {primary | secondary } server-ip <STRING:server_ip>

authorization tacacs+ login {primary | secondary } server-port <UINT:server_port>

authorization tacacs+ login {primary | secondary } shared-key <STRING:shared_key>

authorization tacacs+ login timeout <UINT:timeout>

Syntax Description	**authorization**	Configure authorization mechanism
	tacacs+	TACACS+ setting
	login	Set tacacs+ setting to login authentication
	primary	Configure primary server setting
	secondary	Configure secondary server setting
	server-ip	Set tacacs+ server ip to login authentication
	server_ip	Set tacacs+ server ip to login authentication
	server-port	Set tacacs+ server port to login authentication
	server_port	Set tacacs+ server port to login authentication
	shared-key	Set tacacs+ server shared key to login authentication
	shared_key	Set tacacs+ server shared key to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
Defaults	ip is default NULL port is default 1812 key is default NULL timeout is default 5 second	
Command Modes	Global configuration	
Usage Guidelines	timeout is range from 1 to 255	
Examples	Examples MOXA(config)# authorization tacacs+ login primary server-ip 168.95.1.1 MOXA(config)# authorization tacacs+ login primary server-port 1813 MOXA(config)# authorization tacacs+ login primary shared-key moxa MOXA(config)# authorization tacacs+ login secondary server-ip 168.95.1.2 MOXA(config)# authorization tacacs+ login secondary server-port 1813 MOXA(config)# authorization tacacs+ login secondary shared-key moxa MOXA(config)# authorization tacacs+ login timeout 10	
Error messages	Invalid Server Port!!!	
Related commands	show authentication tacacs+ login	

auto-backup

Use **auto-backup** to enable the function of auto-backup system configurations when the system configuration has any changes. To disable it, use the **no** form of this command.

Commands

auto-backup

no auto-backup

Syntax Description	**auto-backup**	Auto backup system configurations to ABC when configurations is changed
Defaults	Auto-backup configuration is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# auto-backup`	
Error messages	N/A	
Related commands	auto-import	

auto-import

Use **auto-import** to enable the function of loading ABC's configuration when the system boots up. To disable it, use the **no** form of this command.

Commands

auto-import

no auto-import

Syntax Description	**auto-import**	Auto load ABC's system configurations when boot
Defaults	Auto-import configuration is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# auto-import`	
Error messages	N/A	
Related commands	auto-backup	

bind vlan

Use the **bind vlan** configuration command on the switch to bind the management address with a specified VLAN ID. Use the **no** form of this command to return to the default.

Commands

bind vlan VLAN-ID

Syntax Description	**bind**	Bind VLAN as management VLAN
	vlan	VLAN parameters
	VLAN-ID	1 to 4094
Defaults	Default management VLAN ID is 1	
Command Modes	Management configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface mgmt MOXA(config-vlan)# bind vlan 2	
Error messages	VLAN id is out of range!	
Related commands	show interfaces mgmt	

cfg-encrypt

Use the **cfg-encrypt** global configuration command on switch to configure File Encryption. Use the **no** form of this command to stop this function.

Commands

cfg-encrypt password

no cfg-encrypt

Syntax Description	**cfg-encrypt**	Configuration File Encryption
	password	Password
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# cfg-encrypt 12345	
Error messages	Configuration Encrypt password error !!!	
Related commands	N/A	

clear counters

Use the **clear counters** user EXEC command on the switch to clear the switch's statistics counters.

<u>**Commands**</u>

clear counters

Syntax Description	**clear**	Clear information
	counters	Clear statistic counters
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# clear counters	
Error messages	N/A	
Related commands	show interfaces counters	

clear logging event-log

Use the **clear logging event-log** user EXEC command on the switch to clear the system log of the switch.

<u>**Commands**</u>

clear logging event-log

Syntax Description	**clear**	Clear information
	logging	System event logs
	event-log	System event logs
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# clear logging event-log	
Error messages	N/A	
Related commands	show logging	

clock set

Use the **clock set** global configuration command on the switch to set the current switch time.

<u>Commands</u>

clock set hh:mm:ss month day year

Syntax Description	**clock**	Configure time-of-day clock
	set	Adjust the clock
	hh:mm:ss	hh:mm:ss
	month	1 to 12
	day	1 to 31
	year	2000 to 2037
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	Data range: hh: 01~23, mm: 00~59, ss: 00~59 Month: 1~12 Day: 1~31 Year: 2000~2037	
Examples	`MOXA# configure terminal` `MOXA(config)# clock set 08:32:00 8 25 2016`	
Error messages	Illegal parameters!	
Related commands	show clock	

clock source

Use the **clock source** global configuration command on the switch to set the current time source.

<u>Commands</u>

clock source {local | ntp | sntp}

no clock source

Syntax Description	**clock**	Configure time-of-day clock
	source	System Clock Source
	local	Local
	ntp	Network Time Protocol
	sntp	Simple Network Time Protocol
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# clock source local`
	`MOXA(config)# clock source ntp`
	`MOXA(config)# clock source sntp`	

Error messages	N/A	
Related commands	show clock	

clock summer-time

Use the **clock summer-time** global configuration command on the switch to enable the daylight saving time offset and set the apply duration. Use the **no** form of this command to disable it.

<u>**Commands**</u>

clock summer-time start-date month week day hour

clock summer-time end-date month week day hour

clock summer-time offset offset-hour

no clock summer-time

Syntax Description	**clock**	Configure time-of-day clock
	summer-time	Configure Summer time parameter
	start-date	The date when summer time offset start
	end-date	The date when summer time offset end
	month	From 'Jan', 'January' or '1' to 'Dec', 'December', or '12'
	week	From '1st' or '1' to 'Last' or '6'
	day	From 'Sun', 'Sunday' or '1' to 'Sat', 'Saturday' or '7'
	hour	0 to 23
	offset	Summer time offset
	offset-hour	1 to 12
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	When configuring the summer time offset, the start-date and end-date must be configured correctly first. Data range: month: 1~12 week: 1~6 day: 1~7 hour: 0~23 offset-hour: 1~12	
Examples	MOXA# configure terminal MOXA(config)# clock summer-time start-date 1 1 1 2 MOXA(config)# clock summer-time end-date Jan 2nd Sun 2 MOXA(config)# clock summer-time offset 2	
Error messages	Invalid parameter	
	Month must be configured as 'Jan', 'January' or a numerical '1'.	
	Week must be configured as '1st', '2nd', '3rd', '4th', '5th' or 'Last'	
	Day must be configured as 'Sun', 'Sunday' or a numerical '1'.	
	Hour must be in the range from 0 to 23.	
	Please input the correct start/end date of the summer time first!	
	Hour offset is out of range.	
Related commands	show clock	

clock timezone

Use the **clock timezone** global configuration command on the switch to set the current time zone.

Commands

clock timezone gmt offset-hour [offset_minutes]

Syntax Description	**clock**	Configure time-of-day clock
	timezone	Time zone hour shifting
	gmt	Greenwich Mean Time
	offset-hour	-12 to 12
	offset_minutes	Half an hour ; Only type 30
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# clock timezone gmt 5 30`	
Error messages	This timezone doesn't support half an hour	
Related commands	show clock	

configure terminal

Use the **configure terminal** command on the switch to enter the configuration mode and configure from the terminal.

Commands

configure terminal

Syntax Description	**configure**	Enter configuration mode
	terminal	Configure from the terminal
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)#`	
Error messages	N/A	
Related commands	N/A	

copy

Use the **copy** privileged command on the switch to copy an image or configuration file from a remote server to the Flash memory or copy the running configuration, startup configuration, or event log to a remote server via TFTP.

<u>**Commands**</u>

copy {xmodem | tftp} device-firmware
copy {running-config | startup-config | event-log} tftp [tftp_address]
copy tftp running-config
copy tftp ssl-certificate

Syntax Description	**copy**	Copy from one file to another
	xmodem	Copy from xmodem
	tftp	Remote server through TFTP
	device-firmware	System firmware
	running-config	Current running configuration of system
	startup-config	System startup configuration
	event-log	Event log file
	tftp-address	TFTP address. E.g., tftp://192.168.127.1/abc.txt
	ssl-certificate	SSL certificate file
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# copy tftp device-firmware Address or name of remote host [192.168.127.1]? 192.168.127.20 Remote firmware file name ? FWR_EDSG516E_V5.1_Build_16072210.rom TFTP Firmware Download OK !!! System reboot directly !! MOXA# copy running-config tftp Address or name of remote host [192.168.127.1]? 192.168.127.20 Destination file name [/cli.ini]? 123.ini Total number of commands: 43, file size = 4009 TFTP Configuration File Upload Ok !!! MOXA# copy startup-config tftp tftp://192.168.127.20/123.ini Total number of commands: 43, file size = 4044 TFTP Configuration File Upload Ok !!! MOXA# copy event-log tftp tftp://192.168.127.20/123.ini TFTP Log File Upload OK !!! MOXA# copy tftp running-config Address or name of remote host [192.168.127.1]? 192.168.127.20 Warning!! If any IP related config change, you should reconnect again. Source file name ? 123.ini Save import config to flash ? [Y/n] Saving configuration ...Success MOXA# copy tftp ssl-certificate moxa Address or name of remote host [192.168.127.1]? 192.168.127.131 Source file name ? SSL_Certificate.pfx Importing SSL certificate, please wait..... Save ssl certification to flash? [Y/n] Saving ssl certification ...Success	
	Input error	

Error	Invalid TFTP Server IP/Name !!!
messages	TFTP Configuration File Download Failed
	Invalid Config Files Path and Name !!!
	Invalid Firmware Files Path and Name !!!
	TFTP Firmware Download Failed !!!
	TFTP Configuration File Upload Failed !!!
	TFTP Log File Upload Failed !!!
	Importing had some error, please check password or the file.
Related commands	N/A

copy scp

<u>**Commands**</u>

copy scp {device-firmware| running-config} <STRING:scp_info>

copy {startup-config| running-config| event-log} scp <STRING:scp_info>

Syntax Description	**copy**	Copy from one file to another
	scp	Remote server through SCP(secure copy)
	device-firmware	Device Firmware
	running-config	Running configuration of device
	startup-config	Startup configuration of device
	event-log	Event log
	scp_info	SCP target information. format: account@host:path
Defaults	
Command Modes	Privileged EXEC/ User EXEC
Usage Guidelines	N/A
Examples	`Moxa# copy scp running-config moxa@192.168.127.12:/sys.ini`

Error messages	You do not have admin privilege
	invalid format of scp_info
	  - Max. Account length 16 characters
	  - Max. Host length 15 characters
	  - Max. src/dest file length 64 characters

Related commands	N/A

copy tftp running-config

<u>**Commands**</u>

copy tftp running-config [force]

Syntax Description	**copy**	Copy from one file to another
	tftp	Remote server through TFTP
	running-config	Current running configuration of system
	force	Import running configuration file without hint
Defaults	N/A
Command Modes	Privileged EXEC/ User EXEC
Usage Guidelines	N/A

Examples	`MOXA# copy tftp running-config force`
	`Address or name of remote host [192.168.127.1]? 192.168.127.131`
	`Warning!! If any IP related config change, you should reconnect`
	`again.`
	`Source file name ? test.ini`

	`Saving configuration ...Success`
Error messages	TFTP Configuration File Upload Failed !!!
Related commands	N/A

default interface ethernet

Commands

default interface ethernet <STRING:mod_port>

Syntax Description	**default**	Reset interface to default
	Interface	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	mod_port	Port ID or list
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	Moxa(config)# default interface ethernet 1/5 Proceed with reload interface 1/5 (and interface-related functions) to factory default? [Y/n]	
Error messages	N/A	
Related commands	N/A	

dip-switch

Use the **dip-switch** command to disable/enable HW dip-switch function.

Commands

dip-switch {disable | enable}

dip-switch mode { turbo-ring-v1 | turbo-ring-v1}

Syntax Description	**disable**	Disable DIP switch.
	enable	Enable DIP switch.
	mode turbo-ring-v1	Set DIP switch as Turbo Ring V1
	mode turbo-ring-v2	Set DIP switch as Turbo Ring V2
Defaults	1.Enable dip-switch. 2.set to turbo-ring-v2.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# dip-switch disable MOXA(config)# dip-switch enable MOXA(config)# dip-switch mode turbo-ring-v1 MOXA(config)# dip-switch mode turbo-ring-v2	
Error messages	N/A	
Related commands	N/A	

dot1x auth

Use the **dot1x auth** interface configuration command on the switch to enable port 802.1x authenticate. Use the **no** form of this command to return to the default setting.

<u>**Commands**</u>

dot1x auth

no dot1x auth

Syntax	**dot1x**	802.1x setting
Description	**auth**	802.1x port authentication enable/disable
Defaults	802.1x port authentication default disable	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# interface ethernet 1/1 MOXA(config-if)# dot1x auth MOXA(config-if)# no dot1x auth	
Error messages	N/A	

dot1x reauth

Use the **dot1x reauth** interface configuration command on the switch to trigger port 802.1x re-authenticate immediately.

<u>**Commands**</u>

dot1x reauth

Syntax	**dot1x**	802.1x setting
Description	**reauth**	802.1x port re-authenticate immediately
Defaults	N/A	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# interface ethernet 1/1 MOXA(config-if)# dot1x reauth	
Error messages	N/A	
Related commands	N/A	

eip

Use the **eip** command to disable/enable Ethernet/IP support.

Commands

eip

no eip

Syntax Description	**eip**	Enable Ethernet/IP
Defaults	Default is disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# eip`
	`MOXA(config)# no eip`	

Error messages	N/A	
Related commands	show eip	

email-warning event (port)

Use the **email-warning event** interface configuration command to allow interface warning events to be sent through the email if the event occurs. Use the **no** form of this command to disable the specified warning event notifications.

Commands

email-warning event { link-on | link-off }

no mail-warning event { link-on | link-off }

email-warning event traffic-overload [rxThreshold duration]

no email-warning event traffic-overload

Syntax Description	**email-warning**	Configure email warning
	event	Port events
	link-on	Link ON
	link-off	Link OFF
	traffic-overload	Traffic overloading
	rxThreshold	0 to 100
	duration	1 to 300
Defaults	All port events are disabled by default.	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	MOXA# configure terminal
	MOXA(config)# interface ethernet 3/1
	MOXA(config-if)# email-warning
	  event - Port events
	MOXA(config-if)# email-warning event
	  link-on - Link ON
	  link-off - Link OFF
	  traffic-overload - Traffic overloading
	MOXA(config-if)# email-warning event link-on
	MOXA(config-if)# email-warning event traffic-overload 80 20
	MOXA(config-if)#
	MOXA# show email-warning config
	Mail Server and Email Setup
	  SMTP Server IP/Name : ms1.hinet.net
	  SMTP Port : 25
	  Account Name : test1
	  Account Password : 1234
	
	  1st email address: test2@moxa.com
	  2nd email address :
	  3rd email address: test3@hinet.net
	  4th email address :
	System Events
	  Cold Start : Enable
	  Warm Start : Disable
	  Conf. Changed : Disable
	  Power On->Off : Disable
	  Power Off->On : Disable
	  Auth. Failure : Enable
	  Topology Changed : Enable	

Error messages	Threshold should be between 0 and 100 Duration should be between 1 and 300	
Related commands	show email-warning	

email-warning event (System)

Use the **email-warning event** global configuration command to enable the system warning events service to send through the email if the event occurs. Use the **no** form of this command to disable the specified warning event notifications.

Commands

email-warning event { all | cold-start | warm-start | power-trans-off | power-trans-on | config-change | auth-fail | topology-change }

no email-warning event { cold-start | warm-start | power-trans-off | power-trans-on | config-change | auth-fail | topology-change}

Syntax Description	**Email-warning**	Email warning setting
	event	System events
	all	Enable all events
	cold-start	Switch cold start
	warn-start	Switch warm start
	power-trans-off	Power transition (on->off)
	power-trans-on	Power transition (off->on)
	config-change	Configuration changed
	auth-fail	Authentication failed
	topology-change	Topology changed (from redundant protocols)
Defaults	All system events are disabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
| Examples | ```
MOXA# configure terminal
MOXA(config)# email-warning event ?
  all                  - Enable all events
  cold-start           - Switch cold start
  warm-start           - Switch warm start
  power-trans-off      - Power transition (on->off)
  power-trans-on       - Power transition (off->on)
  config-change        - Configuration changed
  auth-fail            - Authentication failed
  topology-change      - Communication redundancy topology changed
MOXA(config)# email-warning event cold-start
MOXA(config)# email-warning event topology-change
MOXA(config)# email-warning event auth-fail
``` | |
| Error messages | N/A | |
| Related commands | show email-warning config | |

email-warning send test-email

Use **email-warning send test-email** to send a test email.

<u>Commands</u>

email-warning send test-email

Syntax	**email-warning**	Email warning setting
Description	**send**	Send test email
	test-email	Test email address
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	The test email will be sent to the mail address that "smtp recipient".	

Examples	`MOXA# configure terminal`
	`MOXA(config)# email-warning send test email`
	`Sending test email ...`
	`You may check if your dedicated email addresses have received this`
	`email!`	

Error messages	Warning !!! You must first do Email Setup before sending the test email. Warning !!! You must first configure DNS Server IP Address before sending the test email. Sending test email failed !!!	
Related commands	N/A	

email-warning smtp account

Use **email-warning smtp account** to configure SMTP service account information for the switch. To reset the setting, use the **no** form of this command to clear account information.

<u>Commands</u>

email-warning smtp account username password

no email-warning smtp account

Syntax	**email-warning**	Email warning setting
Description	**smtp**	SMTP server setting
	account	Email account on server
	username	User name
	password	User password
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# email-warning smtp account aaa bbb`
	`MOXA(config)# no email-warning smtp account`	

Error messages	Length of SMTP User name is too long !!! Invalid User name Length of password is too long !!!	
Related commands	N/A	

email-warning smtp auth

Use **email-warning smtp auth** to configure SMTP service auth type for the switch. To reset the setting, use the **no** form of this command.

Commands

email-warning smtp auth { plain | login | cram-md5 }

no email-warning smtp auth

Syntax Description	email-warning	Email warning setting
	smtp	Email warning smtp setting
	auth	Select authentication method
	plain	Select Plain authentication method
	login	Select login authentication method
	cram-md5	Select CRAM-MD5 authentication method
Defaults	Default is plain	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# email-warning smtp auth plain`
	`MOXA(config)# no email-warning smtp auth`	

Error messages	N/A	
Related commands	N/A	

email-warning smtp port

Use **email-warning smtp port** to configure SMTP service port number for the switch. To reset the setting, use the **no** form of this command to clear SMTP service port.

Commands

email-warning smtp port servport

no email-warning smtp port

Syntax Description	email-warning	Email warning setting
	smtp	SMTP server setting
	port	SMTP Port, 1 ~ 65535
	servport	SMTP Port, 1 ~ 65535
Defaults	25	
Command Modes	Global configuration	
Usage Guidelines	servport is range from 1 to 65535	

Examples	`MOXA# configure terminal`
	`MOXA(config)# email-warning smtp port 443`
	`MOXA(config)# no email-warning smtp port`	

Error messages	Invalid Mail Server Port, Range(1~65535)	
Related commands	N/A	

email-warning smtp recipient

Use **email-warning smtp recipient** to configure the email recipient setting of SMTP service for the switch. To reset the setting of specific recipient, use the **no** form of this command.

<u>**Commands**</u>

email-warning smtp recipient mailIdx mailAddress

no email-warning smtp recipient mailIdx

Syntax Description	**email-warning**	Email warning setting
	smtp	Email warning smtp setting
	recipient	The recipient email address
	mailIdx	1 ~ 4
	mailAddress	Email address
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	mailIdx is range from 1 to 4	

Examples	`MOXA# configure terminal`
	`MOXA(config)# email-warning smtp recipient 1 user@@moxa.com`
	`MOXA(config)# no email-warning recipient 1`	

Error messages	Index should be between 1 and 4 Length of email address is too long !!!	
Related commands	N/A	

email-warning smtp sender

Use **email-warning smtp sender** to configure the email sender setting of SMTP service for the switch. To reset the setting, use the **no** form of this command.

<u>**Commands**</u>

email-warning smtp sender mailAddress

no email-warning smtp sender

Syntax Description	**email-warning**	Email warning setting
	smtp	Email warning smtp setting
	sender	The sender email address
	mailAddress	Email address
Defaults	admin@localhost	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# email-warning smtp sender admin@@moxa.com`
	`MOXA(config)# no email-warning smtp sender`	

Error messages	Length of email address is too long !!!	
Related commands	N/A	

email-warning smtp server

Use **email-warning smtp server** to configure SMTP service IP/Name (IP address or name) for the switch. To clear the setting, use the **no** form of this command to clear SMTP service IP/Name.

<u>**Commands**</u>

email-warning smtp server servaddr

no email-warning smtp server

Syntax	**email-warning**	Email warning setting
Description	**smtp**	SMTP server setting
	server	SMTP Server name/address
	servaddr	SMTP Server name/address
Defaults	NULL	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# email-warning smtp server mail.hinet.net MOXA(config)# no email-warning smtp server	
Error messages	Length of server address is too long !!! Invalid SMTP server name/address	
Related commands	N/A	

email-warning smtp tls

Use **email-warning smtp tls** to enable SMTP service tls option for the switch. To reset the setting, use the **no** form of this command.

<u>**Commands**</u>

email-warning smtp tls

no email-warning smtp tls

Syntax	**email-warning**	Email warning setting
Description	**smtp**	Email warning smtp setting
	tls	Enable/Disable TLS
Defaults	tls Default disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# email-warning smtp tls MOXA(config)# no email-warning smtp tls	
Error messages	N/A	
Related commands	N/A	

exit

Use **exit** to exit the current configuration mode.

<u>**Commands**</u>

exit

Syntax Description	**exit**	Exit from configure mode Exit from port setting mode Exit command line interface Exit from management interface setting
Defaults	N/A	
Command Modes	Privileged EXEC、Global configuration、Redundancy configuration、Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# exit MOXA(config)# MOXA(config)# redundancy MOXA(config-rdnt)# exit MOXA(config)# exit MOXA# exit	
Error messages	N/A	
Related commands	quit	

fiber-check-threshold

<u>**Commands**</u>

fiber-check-threshold

no fiber-check-threshold

Syntax Description	**fiber-check-threshold**	Enable per port fiber check threshold related parameter
Defaults	fiber-check-threshold is default disabled.	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# fiber-check-threshold MOXA(config-if)# no fiber-check-threshold	
Error messages	N/A	
Related commands	show fiber-check-threshold	

fiber auto-nego

fiber auto-nego

no fiber auto-nego

Syntax	**fiber auto-nego**	Enable fiber port auto-negotiation
Description	**no fiber auto-nego**	Use fiber port forced mode
Defaults	The default is auto-negotation.	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# fiber auto-nego MOXA(config-if)# no fiber auto-nego	
Error messages	N/A	
Related commands	show running-config	

fiber-check-threshold rx-lowerbound

Commands

fiber-check-threshold rx-lowerbound <STRING:lowerbound>

no fiber-check-threshold rx-lowerbound

Syntax Description	**fiber-check-threshold**	Enable per port fiber check threshold related parameter
	rx-lowerbound	Fiber DDM Rx lower bound
	lowerbound	Rx lower bound value
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	Fiber-check-threshold rx lower bound range is from -40.00 to 0.00	
Examples	MOXA(config-if)# fiber-check-threshold rx-lowerbound -3.87	
Error messages	The correct Rx power lower bound range is (-40.00 ~ 0.00).	
Related commands	show fiber-check-threshold	

fiber-check-threshold temperature

Commands

fiber-check-threshold temperature <STRING:temperature>

no fiber-check-threshold temperature

Syntax Description	**fiber-check-threshold**	Enable per port fiber check threshold related parameter
	temperature	Fiber DDM temperature
	temperature	Temperature value
Defaults	N/A	
Command Modes	Interface configuration	
Usage	Fiber-check-threshold temperature is range from 30.00 to 200.00	

Guidelines	
Examples	`MOXA(config-if)# fiber-check-threshold temperature 100` `MOXA(config-if)# no fiber-check-threshold`
Error messages	The correct temperature range is (30.00 ~ 200.00).
Related commands	show fiber-check-threshold

fiber-check-threshold tx-lowerbound

<u>**Commands**</u>

fiber-check-threshold tx-lowerbound <STRING:lowerbound>

no fiber-check-threshold tx-lowerbound

Syntax Description	fiber-check-threshold	Enable per port fiber check threshold related parameter
	tx-lowerbound	Fiber DDM Tx lower bound
	lowerbound	Tx lower bound value
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	Fiber-check-threshold tx lower bound is range from -20.00 to 0.00	
Examples	`MOXA(config-if)# fiber-check-threshold tx-upperbound -3.87`	
Error messages	The correct Tx Power Lower Bound range is (-20.00 ~ 0.00).	
Related commands	show fiber-check-threshold	

fiber-check-threshold tx-upperbound

<u>**Commands**</u>

fiber-check-threshold tx-upperbound <STRING:upperbound>

no fiber-check-threshold tx-upperbound

Syntax Description	fiber-check-threshold	Enable per port fiber check threshold related parameter
	tx-upperbound	Fiber DDM Tx upper bound
	upperbound	Tx upper bound value
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	Fiber-check-threshold tx upper bound is range from -10.00 to 10.00	
Examples	`MOXA(config-if)# fiber-check-threshold tx-upperbound 3.87`	
Error messages	The correct Tx power upper bound range is (-10.00 ~ 10.00).	
Related commands	show fiber-check-threshold	

flowcontrol

To set the method of data flow control between the terminal or other device, use the **flowcontrol** interface configuration command. Use the **no** form of this command to disable flow control

<u>**Commands**</u>

flowcontrol

no flowcontrol

Syntax Description	**flowcontrol**	Configure flowcontrol
Defaults	The default is disable	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface trunk 1 MOXA(config-if)# flowcontrol MOXA(config-if)# no flowcontrol	
Error messages	Fiber port can not be set flow control!! Force speed can not be set flow control!! Cannot configure on trunk member port 1/1! This setting cannot be applied on trunk port!	
Related commands	show interfaces ethernet	
Related commands	show relay-warning	

garp

Use **garp join-time** global configuration commands to configure GARP join timer parameters. Use **garp leave-time** global configuration commands to configure GARP leave timer parameters. Use **garp leaveall-time** global configuration commands to configure GARP leaveall timer parameters. Use **no** form of this command to reset to default setting.

<u>**Commands**</u>

garp join-time time

garp leave-time time

garp leaveall-time time

no garp timer

no garp join-time

no garp leave-time

no garp leaveall-time

Syntax Description	**garp**	garp
	join-time	Configure GARP join timer parameters
	time	Configure GARP join timer parameters
	leave-time	Configure GARP leave timer parameters
	time	Configure GARP leave timer parameters
	leaveall-time	Configure GARP leaveall timer parameters
	time	Configure GARP leaveall timer parameters
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# garp join-table 5`
	`MOXA(config)# garp leave-time 15`
	`MOXA(config)# garp leaveall-time`	

Error messages	leave time should be at least two times more than join time leave all time should be larger than leave time	
Related commands	MOXA# show garp timer	

gmrp

Use the **gmrp** interface configuration command on the switch to active the IEEE 802.1D-1998 GMRP (GARP Multicast Registration Protocol). Use the **no** form of this command to stop this function.

Commands

gmrp

no gmrp

Syntax Description	**gmrp**	Enable GMRP (GARP Multicast Registration Protocol)
Defaults	gmrp is default disable	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# gmrp`
	
	`MOXA(config-if)# no gmrp`	

Error messages	GMRP cannot be enabled on static multicast member port!!!	
Related commands	N/A	

gvrp

Use the **gvrp** global configuration command on the switch to enable GVRP. Use the **no** form of this command to disable it.

Commands

gvrp

no gvrp

Syntax Description	**gvrp**	Enable/Disable GVRP
Defaults	The feature is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# gvrp`	
Error messages	N/A	
Related commands	show gvrp	

hostname

To specify or modify the host name for the network server, use the **hostname** global configuration command. To return to the default, use the **no** form of this command.

Commands

hostname [token1] [token2] [token3] [token4] [token5]

no hostname

Syntax	hostname	Set system's network name (maximum 30 characters)
Description	token1~5	Combine token1~5 to switch name string.
Defaults	Name is the default switch name with the serial number	
Command Modes	Global configuration	
Usage Guidelines	Maximum string tokens are 5. Maximum switch name length is 30 characters. If device support PROFINET, only token1 will be set to switch name.	

Examples	`MOXA# configure terminal`
	`MOXA(config)# hostname`
	`MOXA(config)# hostname 1`
	`MOXA(config)# hostname 1 2`
	`MOXA_1(config)# hostname 1 2 3`
	`MOXA_1(config)# hostname 1 2 3 4`
	`MOXA_1(config)# hostname 1 2 3 4 5`	

Error messages	Length of switch hostname is too long	
	Parse error	
Related commands	show system	

interface ethernet

Use the **interface ethernet** global configuration command on the switch to enter the ethernet configuration mode.

Commands

interface ethernet mod_port

Syntax	interface	Select an interface to configure
Description	ethernet	Configure trunk interface
	mod_port	Port ID or list.
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# interface ethernet 1/1`	
Error messages	Unavailable module	
	Illegal parameter	
Related commands	N/A	

interface mgmt

Use the **interface mgmt** global configuration command on the switch to enter the VLAN configuration mode of mgmt-VLAN.

<u>**Commands**</u>

interface mgmt

Syntax	**interface**	Select an interface to configure
Description	**mgmt**	Configure management VLAN
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface mgmt`
	`MOXA(config-vlan)#`	

Error messages	N/A	
Related commands	show interfaces mgmt	

interface trunk

Use the **interface trunk** global configuration command on the switch to enter the trunk configuration mode.

<u>**Commands**</u>

interface trunk trunk_id_range

Syntax	**interface**	Select an interface to configure
Description	**trunk**	Configure trunk interface
	trunk_id_range	Trunk ID (or list)
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# interface trunk 1`	
Error messages	There is no member in Trunk trunk_id Illegal parameter	
Related commands	N/A	

ip address

Use the **ip address** VLAN configuration command on the switch to configure the IP retrieve mechanism of the switch. Use **no** form of this command to return to the default.

Commands

ip address {static ip-address netmask **| dhcp | bootp }**

no ip address

Syntax Description	ip	Configure IP paramters
	address	Congiure IP address
	static	E.g., 11.22.33.44
	ip-address	IP address
	netmask	Subnet mask
	dhcp	Use DHCP to retrieve IP setting automatically
	bootp	Use BOOTP to retrieve IP setting automatically
Defaults	N/A	
Command Modes	Management configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface mgmt`
	`MOXA(config-vlan)# ip address static 192.168.127.200 255.255.0.0`
	`MOXA(config-vlan)# ip address dhcp`
	`MOXA(config-vlan)# ip address bootp`	

Error messages	N/A	
Related commands	show interfaces mgmt	

ip auto-assign

Use the **ip auto-assign** interface configuration command on the switch to enable and set the auto IP assignment of specified interfaces. Use the **no** form of this command to remove an Ethernet port from a trunk group.

Commands

ip auto-assign ipaddr

no ip auto-assign

Syntax Description	ip	Configure IP paramters
	auto-assign	Automatic port IP assignment through DHCP/BootP/RARP
	ipaddr	IPv4 address
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	This specified IP address must be in the same subnet of the system IP address	

Examples (static IP)	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# ip auto-assign 192.168.127.1`
	`MOXA(config-if)# no ip auto-assign`	

Error messages	Cannot configure on trunk member port This IP address must be in the same subnet of the system IP address	
Related commands	show ip auto-assign	

ip auto-logout

Use the **ip auto-logout** global configuration command to configure auto-logout timer. To reset to default, use the **no** form of this command.

<u>**Commands**</u>

ip auto-logout Minutes

Syntax	**ip**	Global IP configuration subcommands
Description	**auto-logout**	Auto-logout timer
	Minutes	0 for disable, or 1 ~ 1440 minutes
Defaults	Minutes: 5	
Command Modes	Global configuration	
Usage Guidelines	**Minutes:** 0 for disable, or 1 ~ 1440 minutes	
Examples	MOXA# configure terminal MOXA(config)# ip auto-logout 5	
Error messages	N/A	
Related commands	N/A	

ip default-gateway

Use the **ip default-gateway** VLAN configuration command on the switch to configure the IP default gateway address. Us thee **no** form of this command to return to the default.

<u>**Commands**</u>

ip default-gateway ip-address

no default-gateway

Syntax	**ip**	Configure IP paramters
Description	**default-gateway**	Configure default gateway address
	ip-address	IP address
Defaults	N/A	
Command Modes	Management configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface mgmt MOXA(config-vlan)# ip default-gateway 192.168.127.1	
Error messages	Warning! IP and gateway are not in the same subnet	
Related commands	show interfaces mgmt	

ip dhcp retry

Use **ip dhcp retry** to enable the DHCP request retry for a specified period and times. Use the **no** form of this command to return to the default.

<u>**Commands**</u>

ip dhcp retry times **period** seconds

no ip dhcp retry

Syntax Description	ip	Global IP configuration subcommands
	dhcp	DHCP related configuration
	retry	Configure DHCP client request retry paramter
	times	0 - 65535 times, 0 means retry forever
	period	Retry period
	seconds	1 - 30 seconds
Defaults	Default retry times = 0, retry period=1	
Command Modes	Management configuration	
Usage Guidelines	times range: 0 - 65535 times, 0 means retry forever seconds range: 1 - 30 seconds	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface mgmt`
	`MOXA(config-vlan)# ip dhcp retry 0 period 1`	

Error messages	Illegal parameter!	
Related commands	show interface mgmt	

ip dhcp-relay option82

Use the **ip dhcp-relay option82** global and interface configuration command to enable DHCP Relay with Option 82 messages. To disable it, use the **no** form of this command.

<u>**Commands**</u>

ip dhcp-relay option82

no ip dhcp-relay option82

Syntax Description	ip	Configure IP parameters
	dhcp-relay	Configure DHCP relay agent parameter
	option82	Option 82
Defaults	Default is disabled.	
Command Modes	Global configuration Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ip dhcp-relay option82`
	`MOXA(config)# no ip dhcp-relay option82`
	
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# ip dhcp-relay option82`	

Error messages	Please enable Option82 first	
Related commands	show ip dhcp-relay	

ip dhcp-relay option82 man-id

Use **ip dhcp-relay option82 man-id** to manually set the remote id instead of the predefined ones.

Commands

ip dhcp-relay option82 man-id manualId

Syntax Description	**ip**	Global IP configuration subcommands
	dhcp-relay	Configure DHCP relay agent parameter
	option82	Option 82
	man-id	Manual remote ID
	manualId	Manual remote ID, maximum 15 characters
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ip dhcp-relay option82 man-id abcdef`	
Error messages	Manual Id is over 15 characters	
Related commands	N/A	

ip dhcp-relay option82 remote-id-type

Use the **ip dhcp-relay option82 remote-id-type** global configuration command to select the remote ID information of DHCP option82 messages.

Commands

ip dhcp-relay option82 remote-id-type remoteIdType

Syntax Description	**ip**	Global IP configuration subcommands
	dhcp-relay	Configure DHCP relay agent parameter
	option82	Option 82
	remote-id-type	Remote Id type
	remoteIdType	ip | mac | client-id | other
Defaults	Default remote-id-type is IP.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ip dhcp-relay option82 remote-id-type ?` ` <STRING:remoteIdType> - ip	mac	client-id	other` `MOXA(config)# ip dhcp-relay option82 remote-id-type mac`  `MOXA(config)# ip dhcp-relay option82 remote-id-type other`	
Error messages	Invalid remote ID type	
Related commands	N/A	

ip dhcp-relay server

Use **ip dhcp-relay server** to configure the DHCP server address that the switch will forward DHCP messages to. To remove the DHCP server address, use the **no** form of this command.

Commands

ip dhcp-relay server serverIndex serverAddr

no ip dhcp-relay server serverIndex

Syntax Description	**ip**	Global IP configuration subcommands
	dhcp-relay	Configure DHCP relay agent parameter
	server	DHCP server IP address
	serverIndex	DHCP server address index, 1 to 4
	serverAddr	DHCP server IP address
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ip dhcp-relay server 1 192.168.127.100`
	`MOXA(config)# ip dhcp-relay server 3 192.168.127.200`	

Error messages	Invalid server index Invalid IPv4 address	
Related commands	show ip dhcp-relay	

ip http-server login-message

Use the **ip http-server login-message** global configuration HTTP/HTTPS login message. To reset to default, use the **no** form of this command.

Commands

ip http-server login-message msgstr

no ip http-server login-message

Syntax Description	**ip**	Global IP configuration subcommands
	http-server	Enable Moxa Service
	login-message	Configure HTTP/HTTPS login message
	msgstr	Login message (max. 256 characters)
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	**msgstr:** max. 256 characters (Not allow "space")	
Examples	`MOXA# configure terminal` `MOXA(config)# ip http-server login-message 12345`	
Error messages	N/A	
Related commands	N/A	

ip igmp mcast-fast-forwarding

Use the **ip igmp mcast-fast-forwarding** global configuration command on the switch to configure the multicast fast forwarding function. Use the **no** form of this command to return to the default.

Commands

ip igmp mcast-fast-forwarding

no ip igmp mcast-fast-forwarding

Syntax	**ip**	Global IP configuration subcommands
Description	**igmp**	IGMP
	mcast-fast-forwarding	multicast fast forwarding
Defaults	Globally disabled on the switch	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ip igmp mcast-fast-forwarding	
Error messages	N/A	
Related commands	show mac-address-table mcast	

ip igmp static-group

Use the **ip igmp static-group** global configuration command on the switch to add a static multicast MAC address and its member ports. Use the **no** form of this command to remove the static multicast group or just its member ports.

Commands

ip igmp static-group MAC-address **interface** module/port

no ip igmp static-group [MAC-address] [**interface** module/port]

Syntax	**ip**	Global IP configuration subcommands
Description	**igmp**	IGMP
	static-group	Add New Static Multicast MAC Address
	MAC-address	MAC address XX:XX:XX:XX:XX:XX
	interface	Binding ports
	module/port	Port(Trunk) ID or list. E.g., 1/1,2,4-5,2/1,Trk1,Trk2-Trk
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ip igmp static-group 01:00:00:00:00:01 interface 1/2-3 MOXA(config)# no ip igmp static-group	
Error messages	Add new static multicast MAC address Fail !!! Please check the multicast mac address's type !!!	
	Add new static multicast MAC address Fail !!! Not enough space to add a new static multicast MAC address !!!	
	The member port should not be GMRP-enabled port !!!	
Related commands	show mac-address-table mcast	

ip igmp-snooping

Use the **ip igmp-snooping** global configuration command on the switch to globally enable Internet Group Management Protocol (IGMP) snooping on the switch. Use the command with keywords to enable IGMP snooping. Use the **no** form of this command to disable IGMP snooping.

<u>**Commands**</u>

ip igmp-snooping

no ip igmp-snooping

Syntax	**ip**	Global IP configuration subcommands
Description	**igmp-snooping**	IGMP snooping
Defaults	IGMP snooping is globally disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ip igmp-snooping MOXA(config)# no ip igmp-snooping	
Error messages	IGMP Function is only supported by 802.1Q VLAN mode!	
Related commands	ip igmp-snooping vlan ip igmp-snooping querier ip igmp-snooping query-interval ip igmp-snooping enhanced show ip igmp	

ip igmp-snooping querier vlan

Use the **ip igmp-snooping querier vlan** global configuration command to enable and configure the IGMP querier feature on a VLAN interface. Use **ip igmp-snooping querier vlan** vlan-id **v3** can make the switch to send IGMP V3 query, otherwise the default is V2 query. Use the **no** form of this command to disable the IGMP querier feature on a VLAN interface.

Commands

ip igmp-snooping querier vlan vlan-id

ip igmp-snooping querier vlan vlan-id **v3**

no ip igmp-snooping querier vlan vlan-id

Syntax Description	**ip**	Global IP configuration subcommands
	igmp-snooping	IGMP snooping
	querier	IGMP snooping qeury enable
	vlan	VLAN parameters
	vlan-id	1 to 4094
	v3	IGMPv3 mode
Defaults	The IGMP snooping querier feature is globally disabled on the switch	
Command Modes	Global configuration	
Usage Guidelines	The IGMP snooping function must be enabled first.	
Examples	MOXA# configure terminal MOXA(config)# ip igmp-snooping querier vlan 1 MOXA(config)# ip igmp-snooping querier vlan 1 v3 MOXA(config)# no ip igmp-snooping querier vlan 1	
Error messages	Vlan entry not found!!! Vlan IGMP Function is Disabled !!! IGMP Function is Disabled !!! IGMP Function is only supported by 802.1Q VLAN mode!	
Related commands	ip igmp-snooping ip igmp-snooping vlan ip igmp-snooping query-interval ip igmp-snooping enhanced show ip igmp	

ip igmp-snooping query-interval

Use the **ip igmp-snooping query-interval** global configuration command on the switch to configure the interval between IGMP queries.

Commands

ip igmp-snooping query-interval interval

Syntax Description	ip	Global IP configuration subcommands
	igmp-snooping	IGMP snooping
	query-interval	IGMP snooping query interval
	interval	20 to 600 seconds
Defaults	Query interval default value is 125 seconds	
Command Modes	Global configuration	
Usage Guidelines	The IGMP snooping function must be enabled first.	
Examples	MOXA# configure terminal MOXA(config)# ip igmp-snooping query-interval 125	
Error messages	The range of Quierier interval value should be between 20 and 600 !!! IGMP Function is Disabled !!! IGMP Function is only supported by 802.1Q VLAN mode!	
Related commands	ip igmp-snooping ip igmp-snooping vlan ip igmp-snooping querier ip igmp-snooping enhanced show ip igmp	

ip igmp-snooping vlan

Use the **ip igmp-snooping vlan** global configuration command on the switch to globally enable Internet Group Management Protocol (IGMP) snooping on a VLAN. Use the **no** form of this command to disable IGMP snooping on a vlan.

<u>**Commands**</u>

ip igmp-snooping vlan vlan-id [**mrouter** module/port]

no ip igmp-snooping vlan vlan-id [**mrouter** module/port]

Syntax Description	**ip**	Global IP configuration subcommands
	igmp-snooping	IGMP snooping
	vlan	VLAN parameters
	vlan-id	1 to 4094
	mrouter	IGMP snooping query port enable
	Module/port	Port(Trunk) ID or list. E.g., 1/1,2,4-5,2/1,Trk1,Trk2-Trk4
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	The IGMP snooping must be enabled first.	
Examples	MOXA# configure terminal MOXA(config)# ip igmp-snooping vlan 1 MOXA(config)# ip igmp-snooping vlan 1 mrouter 1/1 MOXA(config)# no ip igmp-snooping vlan 1 MOXA(config)# no ip igmp-snooping vlan 1 mrouter 1/1	
Error messages	Vlan entry not found!!! IGMP Function is Disabled !!! Vlan IGMP Function is Disabled !!! IGMP Function is only supported by 802.1Q VLAN mode!	
Related commands	ip igmp-snooping ip igmp-snooping querier ip igmp-snooping query-interval ip igmp-snooping enhanced show ip igmp	

ip max-login-users

Use the **ip max-login-users** global configuration command to configure HTTP/HTTPS maximum login users. To reset to default, use the **no** form of this command.

Commands

ip {http-server | telnet} max-login-users Users

no ip http-server max-login-users

no ip telnet max-login-users

Syntax	ip	Global IP configuration subcommands
Description	**http-server**	Enable Moxa Service
	telnet	Telnet support
	max-login-users	Configure HTTP/HTTPS maximum login users
	Users	1 ~ 10 users
Defaults	Enabled.	
Command Modes	Global configuration	
Usage Guidelines	**Users:** 1 ~ 10	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ip http-server max-login-users 5`
	`MOXA(config)# ip telnet max-login-users 5`	

Error messages	N/A	
Related commands	ip http-server port port-number ip http-server secure port port-number ip telnet port port-number	

ip moxa-service

Use the **ip moxa-service** global configuration command to enable SNMP Agent. To disable, use the **no** form of this command.

Commands

ip moxa-service

no ip moxa-service

Syntax	ip	Global IP configuration subcommands
Description	**moxa-service**	Enable Moxa Service
Defaults	Enabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `ip moxa-service`	
Error messages	N/A	
Related commands	N/A	

ip name-server

Use the **ip name-server** VLAN configuration command on the switch to configure the DNS server for the switch. Use the **no** form of this command to return to the default.

Commands

ip name-server dns-ip-address1 [dns-ip-address2]

no name-server

Syntax Description	**ip**	Configure IP paramters
	name-server	Configure DNS server address
	dns-ip-address1	IP address
	dns-ip-address2	IP address
Defaults	N/A	
Command Modes	Management configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface mgmt MOXA(config-vlan)# ip name-server 192.168.127.2 MOXA(config-vlan)# ip name-server 192.168.127.2 192.168.127.3	
Error messages	Warning! IP and gateway are not in the same subnet	
Related commands	show interfaces mgmt	

ip route tracking

To set the static route to a tracking entry, use the **ip route tracking** command. To unbind the tracking entry, use the **no** form of this command.

Commands

ip route prefix mask next-hop [distance] [**tracking** tid]

no ip route prefix mask next-hop [**tracking**]

Syntax Description	**ip**	Global IP configuration subcommands
	route	Static routing entry
	prefix	Address prefix
	mask	Subnet mask
	next-hop	Next hop address
	distance	Distance metric
	tracking	Set static binding a tracking entry
	tid	The tracking ID (1 - 64) of the bound tracking entry
Defaults	Without binding any tracking entry	
Command Modes	Global configuration	
Usage Guidelines	The command "no ip route prefix mask next-hop tracking" only unbinds the tracking entry. It would not delete the static route.	
Examples	MOXA(config) # ip route 192.168.2.0 255.255.255.0 192.168.1.1 10 tracking 1 MOXA(config) # no ip route 192.168.2.0 255.255.255.0 192.168.1.1 tracking	
Error messages	Route Entry Full!!!	
	Tracking ID should be between 1 and 64!	
	Tracking ID does not exist!	
Related commands	show ip route show ip route static	

ip snmp-agent

Use the **ip snmp-agent** global configuration command to enable SNMP Agent. To disable, use the **no** form of this command

Commands

ip snmp-agent

no ip snmp-agent

Syntax	**ip**	Global IP configuration subcommands
Description	**snmp-agent**	Enable SNMP Agent
Defaults	Enabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ip snmp-agent`	
Error messages	N/A	
Related commands	N/A	

ipv6 address

Use the **ipv6 address** command in VLAN configuration mode as a management VLAN to set the IPv6 address for the device. Use the **no** form of the command to return to the default.

Commands

ipv6 address ipv6_prefix

no ipv6 address

Syntax	**ipv6**	Configure IPv6
Description	**address**	IPv6 address setting
	ipv6_prefix	IPv6 address prefix
Command Modes	Management configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface mgmt`
	`MOXA(config-vlan)# ipv6 address 1::1`	

Error messages	Invalid prefix!	
Related commands	show interface mgmt	

linkdisable

<u>**Commands**</u>

linkdisable

no linkdisable

Syntax Description	**linkdisable**	link disable function
Defaults	N/A	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-if)# linkdisable	
Error messages	N/A	
Related commands	Moxa(config-if)# no linkdisable	

link-swap-fast-recovery

Use the **link-swap-fast-recovery** global configuration command on switch to enable Link Swap Fast Recovery. Use the **no** form of this command to stop the function.

<u>**Commands**</u>

link-swap-fast-recovery

no link-swap-fast-recovery

Syntax Description	**link-swap-fast-recovery**	Enable Link Swap Fast Recovery feature
Defaults	Enable Link Swap Fast Recoverty	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# link-swap-fast-recovery	
Error messages	N/A	
Related commands	N/A	

lldp

Use the **lldp** enable global configuration command to enable LLDP. To stop LLDP, use the **no** form of this command. TBD

Commands

lldp enable

lldp timer frequency

no lldp enable

no lldp timer

Syntax Description	**lldp**	Configure LLDP parameters
	enable	Start up
	timer	Transmission frequency of LLDP updates
	frequency	frequency time
Defaults	LLDP is enabld. LLDP timer frequency is 30 second	
Command Modes	Global configuration	
Usage Guidelines	frequency is 5 ~ 32768 seconds	

Examples	`MOXA# configure terminal`
	`MOXA(config)# lldp enable`
	`MOXA(config)# no lldp enable`
	`MOXA(config)# lldp timer 20`
	`MOXA(config)# no lldp timer`	

Error messages	N/A	
Related commands	show lldp	

logging

Use the **logging** global configuration command on the switch to configure the remote SYSLOG server. Use the **no** form of this command to remove the server.

Commands

logging {ip-address | default }

no logging ip-address

Syntax Description	**logging**	Syslog server setting
	default	Set syslog to default value
	ip-address	IP or DNS name w/wo. port, Ex:1.2.3.4 or 1.2.3.4:5678
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# logging 192.168.127.20`
	`MOXA(config)# logging default`	

Error messages	Logging server configurations are full!	
Related commands	show logging	

logging-capacity

Use the **logging-capacity** global configuration command on set the warning threshold of logging capacity. Use the **no** form of this command to default setting.

Commands

logging-capacity threshold

no logging-capacity

Syntax	**logging-capacity**	Enable and configure log capacity warning threshold.
Description	threshold	50 ~ 100%
Defaults	Disnable logging capacity and the threshold is 0%.	
Command Modes	Global configuration	
Usage Guidelines	Threshold: 50 ~ 100%	
Examples	MOXA# configure terminal MOXA(config)# logging-capacity 90	
Error messages	Event log capacity threshold should between 50~100	
Related commands	show logging-capacity	

logging-capacity email-warning

Use the **logging-capacity email-warning** global configuration command on switch to enable event log capacity email warning when it meets the threshold of logging capacity. Use the **no** form of this command to stop the warning.

Commands

logging-capacity email-warning

no logging-capacity email-warning

Syntax	**logging-capacity**	Enable and configure log capacity warning threshold.
Description	**email-warning**	Enable event log capacity email warning.
Defaults	Enable email warning	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# logging-capacity email-warning	
Error messages	N/A	
Related commands	logging-capacity snmp-trap-warning show logging-capacity	

logging-capacity over-size-action

Use the **logging-capacity over-size-action** global configuration command on switch to set event log over-size action.

Commands

logging-capacity over-size-action {overwrite-oldest | stop-recording }

Syntax Description	**logging-capacity**	Enable and configure log capacity warning threshold.
	over-size-action	Set event log over-size action.
	overwrite-oldest	Overwrite oldest log when evet log is over-size.
	stop-recording	Stop recording when evet log is over-size.
Defaults	overwrite-oldest	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# logging-capacity over-size-action overwrite-oldest MOXA(config)# logging-capacity over-size-action stop-recording	
Error messages	N/A	
Related commands	show logging-capacity	

logging-capacity snmp-trap-warning

Use the **logging-capacity snmp-trap-warning** global configuration command on switch to enable event log capacity SNMP trap warning when it meets the threshold of logging capacity. Use the **no** form of this command to stop the warning.

Commands

logging-capacity snmp-trap-warning

no logging-capacity snmp-trap-warning

Syntax Description	**logging-capacity**	Enable and configure log capacity warning threshold.
	snmp-trap-warning	Enable event log capacity SNMP trap warning
Defaults	Enable SNMP trap warning	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# logging-capacity snmp-trap-warning	
Error messages	N/A	
Related commands	logging-capacity email-warning show logging-capacity	

logging-format CEF

logging-format CEF

no logging-format

Syntax	**logging-format**	Syslog format setting
Description	**CEF**	Set syslog format as CEF
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA(config) # logging-format CEF`	
Error messages	N/A	
Related commands	N/A	

login mode

Use the **login mode** global configuration command to change the login UI mode from the console or telnet connection of the switch.

<u>**Commands**</u>

login mode {cli | menu}

Syntax	**login**	Change login mode
Description	**mode**	Login mode
	cli	Command line interface
	menu	Legacy Menu Mode
Defaults	Default UI mode is MENU mode	
Command Modes	Privileged EXEC、Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# login mode menu`
	`MOXA# login mode cli`
	
	`MOXA(config)# login mode menu`
	`MOXA(config)# login mode cli`	

Error messages	N/A	
Related commands	N/A	

login-lockout

Use the **login-lockout** global configuration command on switch to configure login lockout retry threshold and lockout time. Use the **no** form of this command to default setting.

Commands

login-lockout

no login-lockout

login-lockout retry-threshold retry

no login-lockout retry-threshold

login-lockout lockout-time minutes

no login-lockout lockout-time

Syntax Description	**login-lockout**	Enable account login failure lockout
	retry-threshold	Configure login lockout retry threshold.
	retry	1 ~ 10 times.
	lockout-time	Configure login lockout time.
	minutes	1 ~ 60 minutes
Defaults	Disable account login failure lockout retry: 5 minutes: 5	
Command Modes	Global configuration	
Usage Guidelines	Data range: retry: 1 ~ 10 times minutes: 1 ~ 60 minutes	

Examples	`MOXA# configure terminal`
	`MOXA(config)# login-lockout`
	`MOXA(config)# login-lockout retry-threshold 5`
	`MOXA(config)# login-lockout lockout-time 60`	

Error messages	login lockout threshold should between 1~10 login lockout threshold should between 1~60	
Related commands	N/A	

Loop Protection

Use the **loopprotection** command to disable/enable loop protection support

Commands

loopprotection

no loopprotection

Syntax Description	**loopprotection**	Enable loop protection
Defaults	Default is disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# loopprotection`
	`MOXA(config)# no loopprotection`	

Error messages	N/A	
Related commands	show loopprotection	

mab

Use the **mab** interface configuration command on the switch to active the Mac address Bypass authentication function. Use the **no** form of this command to stop this function.

Commands

mab

no mab

Syntax Description	**mab**	MAB settings
Defaults	802.1x port authentication default disable	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	N/A	
Error messages	% Cannot enable MAC-Authentication-Bypass, please disable Static-Port-Lock on port G1 first !!!	

mac-address-sticky

Use the **mac-address-sticky** command on the switch to configure the MAC address sticky function. Use the **no** form of this command to disable the MAC address sticky function on the switch.

<u>**Commands**</u>

mac-address-sticky limit stickyLimit

mac-address-sticky MAC-address **vid** vid

no mac-address-sticky MAC-address **vid** vid

mac-address-sticky flush

mac-address-sticky violation-port-disable

no mac-address-sticky violation-port-disable

no mac-address-sticky

Syntax Description	**mac-address-sticky**	Setting MAC address sticky
	limit	Enable mac address sticky and set limit
	stickyLimit	Enable mac address sticky and set limit
	MAC-address	MAC address XX:XX:XX:XX:XX:XX
	vid	Add mac address with vid
	vid	Add mac address in the list
	flush	Flush mac address list
	violation-port-disable	Enable mac sticky violation Port Disable
Defaults	N/A	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# config MOXA(config)# interface Ethernet 1/1 MOXA(config-if)# switchport mac-address-sticky MOXA(mac-sticky)# mac-address-sticky limit 50 % The port G1 is in Static-Port-Lock mode MOXA(mac-sticky)# mac-address-sticky 00:00:00:00:00:01 vid 2 % The port G1 is not in MAC-Address-Sticky mode MOXA(mac-sticky)# mac-address-sticky flush % The port G1 is not in MAC-Address-Sticky mode MOXA(mac-sticky)# mac-address-sticky violation-port-disable % The port G1 is not in MAC-Address-Sticky mode	
Error messages	Add new static unicast MAC address Fail !!!	
Related commands	show mac address sticky list	

mac-address-table aging-time

Use the **mac-address-table aging-time** global configuration command on the switch to configure the aging time of the MAC address. Use the **no** form of this command to return to the default.

Commands

mac-address-table aging-time seconds

no mac-address-table aging-time

Syntax Description	**mac-address-table**	Configure MAC address table
	aging-time	Aging time
	seconds	15 to 3825 seconds
Defaults	Default aging time is 300 secconds	
Command Modes	Global configuration	
Usage Guidelines	Aging-time range: 15 to 3825 seconds	
Examples	MOXA# configure terminal MOXA(config)# mac-address-table aging-time 100	
Error messages	Age time should between 15~3825s!	
Related commands	show mac-address-table aging-time	

Management Interface

Use the **ip** global configuration command on the switch to set management interface

Commands

ip { http-server [secure] | telnet | ssh } [port port-number **]**

no ip { http-server [secure] | telnet | ssh }

Syntax Description	**http-server**	Enable Http-server service
	secure	Enable SSL service
	telnet	Enable Telnet service
	ssh	Enable SSH service
	port	Port
	port-number	Listening port number
Defaults	The feature is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config) # ip http-server port 1 Enable HTTP server? [Y/n] MOXA(config) # ip http-server secure port 2 Enable HTTPS secure server? [Y/n] MOXA(config)# ip telnet port 200 MOXA(config)# ip ssh port 201	
Error messages	Assigning duplicate port numbers is not allowed	
	HTTP/SSH/Telnet/SSL port number is invalid, the interval is from 1 to 65535.	
Related commands	N/A	

media cable-mode

Use the **media cable-mode** interface configuration command on the switch to enable the medium-dependent interface crossover feature on the interface. Use the **no** form of this command to disable Auto-MDIX.

Commands

media cable-mode [mdi | mdix | auto]

no media cable-mode

Syntax Description	media	Select a media
	cable-mode	Select cable mode
	mdi	MDI
	mdix	MDIX
	auto	Auto select MDI/MDIX
Defaults	The default is **auto**	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# media cable-mode auto MOXA(config-if)# no media cable-mode	
Error messages	Fiber port can not be set MDI/MDIX!! This setting cannot be applied on trunk port! Cannot configure on trunk member port 1/1!	
Related commands	show interface ethernet	

modbus

Use the **modbus** global configuration command on the switch to enable Modbus/TCP industrial Ethernet protocol supported. Use the **no** form of this command to disable Modbus support.

Commands

modbus

no modbus

Syntax Description	modbus	Enable Modbus
Defaults	Default is enable	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# modbus MOXA(config)# no modbus	
Error messages	N/A	
Related commands	show modbus	

monitor

Use **monitor** global configuration commands to enable the monitoring of data transmitted/received by a specific port. Use the **no** form of this command to disable the monitoring.

<u>**Commands**</u>

For ICS-G7000A models:

monitor source interface <STRING:mod_port> <STRING:direction>

no monitor source interface

monitor destination interface <STRING:mod_port>

no monitor destination interface

monitor rspan vlan <UNIT:vlanid>

no monitor rspan vlan

monitor rspan reflect

no monitor rspan reflect

For all other models:

monitor source interface <STRING:mod_port> <STRING:direction>

no monitor source interface

monitor destination interface <STRING:mod_port>

no monitor destination interface

monitor rspan vlan <UNIT:vlanid>

no monitor rspan vlan

monitor rspan reflect_port interface <STRING:reflectport>

no monitor rspan reflect_port

Syntax Description	**monitor**	Configure Port mirror
	source	Monitored port
	interface	Port
	destination	Mirror port
	mod_port	Port ID. E.g., 1/3, Trk2,...
	direction	tx | rx | both
	rspan	Remote switched port analyzer
	vlan	VLAN for RSPAN traffic
	Reflect_port	reflect port
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	Traffic send/receive by a source port (Monitored port) will be mirrored to the destination port (Mirror port.	

Examples	`MOXA# configure terminal`
	`MOXA(config)# monitor source interface 3/1 both`
	`Warning !!! Mirror Port don't set !`
	`MOXA(config)# monitor destination interface`
	`  <STRING:mirrorPort>  - Port ID. E.g., 1/3, 2/1,...`
	`MOXA(config)# monitor destination interface 3/1,2`
	`% Invalid format`
	`MOXA(config)# monitor destination interface 3/1`
	`% Monitored Port is the same with Mirror Port !!!`
	
	`MOXA(config)# monitor destination interface 3/2`	

	MOXA(config)# monitor source interface 1/1-2
	MOXA(config)# monitor rspan vlan 20
	MOXA(config)# monitor rspan reflect_port interface 1/3
Error messages	Monitored Port is the same with Mirror Port !!!
	Invalid parameter
	Warning !!! Mirror Port don't set !
	Warning !!! Monitored Port don't set !
	Please set the reflector port's PVID first!
	Port does not exist.
	Please set the valid reflect port number!!
	Remote Port Mirroring and GVRP can not enable simultaneously!
	Invalid reflect port setting. Fiber port cannot be set as reflect port!!
	RSPAN VLAN can't be the same as management VLAN!!!
	RSPAN VLAN must NOT be the same as the PVID of mirrored ports!!!
	RSPAN VLAN must be the same as Reflect port VID!!!
	VLAN id is out of range!
Related commands	show port monitor

mrp interconnection

Commands

mrp interconnection <UINT:id>

Syntax Description	**mrp**	Configure MRP
	interconnection	MRP interconnection
	id	Interconnection instance id
Defaults	The default MRP interconnection is disabled.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# mrp interconnection 1	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp interconnection IID

Commands

mrp interconnection <UINT:id> IID <UINT:iid>

Syntax Description	**mrp**	Configure MRP
	interconnection	MRP interconnection
	id	Interconnection instance id
	IID	Interconnection ID
	iid	Interconnection ID
Defaults	The default MRP interconnection ID is 0.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# mrp interconnection 1 IID 1	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp interconnection interface

Commands

mrp interconnection <UINT:id> **interface** <STRING:iport>

Syntax	**mrp**	Configure MRP
Description	**interconnection**	MRP interconnection
	id	Interconnection instance id
	interface	Interconnection port interface
	iport	Port ID. Ex. 1/3, 2/1
Defaults	N/A	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# mrp interconnection 1 interface 1/5	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp interconnection mode

Commands

mrp interconnection <UINT:id> **mode** <UINT:mode>

Syntax	**mrp**	Configure MRP
Description	**interconnection**	MRP interconnection
	id	Interconnection instance id
	mode	Interconnection mode
	mode	Interconnection mode
Defaults	The default MRP interconnection mode is LC mode.	
Command Modes	redundancy configuration	
Usage Guidelines	0: Link Check (LC) 1: Ring Check (RC)	
Examples	Moxa(config-rdnt)# mrp interconnection 1 mode 1	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp interconnection recovery

Commands

mrp interconnection <UINT:id> **recovery** <UINT:time>

Syntax Description	**mrp**	Configure MRP
	interconnection	MRP interconnection
	id	Interconnection instance id
	recovery	Recovery time for Interconnection
	time	200 ms or 500 ms
Defaults	The default MRP interconnection recovery time is 200 ms.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# mrp interconnection 1 recovery 200	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp interconnection role

Commands

mrp interconnection <UINT:id> **role** <UINT:role>

Syntax Description	**mrp**	Configure MRP
	interconnection	MRP interconnection
	id	Interconnection instance id
	role	Interconnection role
	role	Interconnection role
Defaults	The default MRP interconnection role is client.	
Command Modes	redundancy configuration	
Usage Guidelines	0: Manager 1: Client	
Examples	Moxa(config-rdnt)# mrp interconnection 1 role 1	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp mode

<u>Commands</u>

mrp mode {manager|client}

Syntax	**mrp**	Configure MRP
Description	**mode**	MRP role
	manager	Select MRP Ring as Manager
	client	Select MRP Ring as Client
Defaults	The default MRP ring is Client.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	`Moxa(config-rdnt)# mrp mode Manager`	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp react-on-lnk-chg

<u>Commands</u>

mrp react-on-lnk-chg

Syntax	**mrp**	Configure MRP
Description	**react-on-lnk-chg**	MRM react on MRC link change frame
Defaults	The default enabled	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	`Moxa(config-rdnt)# mrp react-on-lnk-chg`	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp recovery

<u>Commands</u>

mrp recovery <UINT:time>

Syntax	**mrp**	Configure MRP
Description	**recovery**	MRP recovery time
	<UINT:time>	MRP max recovery time, 200 ms or 500 ms
Defaults	The default MRP ring speed is 200 ms.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	`Moxa(config-rdnt)# mrp recovery 200`	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp ring

Use the **MRP** redundancy configuration command on the switch stack or on a standalone switch to configure MRP.

<u>Commands</u>

mrp ring

Syntax	**mrp**	Configure MRP
Description	**ring**	MRP ring
Defaults	The default MRP ring is disabled.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	`Moxa(config-rdnt)# mrp ring`	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp ring domain

<u>Commands</u>

mrp ring domain <UINT:uuid>

Syntax	**mrp**	Configure MRP
Description	**ring**	MRP ring
	domain	MRP ring domain
	uuid	Configure MRP ring domain UUID.
Defaults	Default domain id is default	
Command Modes	redundancy configuration	
Usage Guidelines	0: default UUID 1: PROFINET UUID	
Examples	`Moxa(config-rdnt)# mrp ring domain 1`	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp ring vlan-id

Commands

mrp ring vlan-id <UINT:vid>

Syntax Description	**mrp**	Configure MRP
	ring	MRP ring
	vlan-id	Vlan for sending MRP frames
	vid	Vlan id
Defaults	Default vlan id is 1	
Command Modes	N/A	
Usage Guidelines	redundancy configuration	
Examples	Moxa(config-rdnt)# mrp ring vlan-id 2	
Error messages	N/A	
Related commands	show redundancy mrp ring	

mrp ring-port-1 ring-port-2

Commands

mrp ring-port-1 <STRING:ring_port1> **ring-port-2** <STRING:ring_port2>

Syntax Description	**mrp**	Configure MRP protocol
	ring-port-1	Configure ring port 1 setting
	ring_port1	Port ID. Ex. 1/3, 2/1
	ring-port-2	Configure ring port 2 setting
	ring_port2	Port ID. Ex. 1/3, 2/1
Defaults	N/A	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-rdnt)# mrp ring-port-1 1/1 ring-port-2 1/2	
Error messages	N/A	
Related commands	show redundancy mrp ring	

name

Use the **name** interface configuration command to configure the interface name. To remove the configuration, use the **no** form of this command.

<u>**Commands**</u>

name

no name

Syntax Description	**name**	Port name
Defaults	None	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface trunk 1`
	`MOXA(config-if)# name interface1_trunk1`
	`MOXA(config-if)# no name`	

Error messages	The length of port name must between 1 and 63! Cannot configure on trunk member port 1/1	
Related commands	show interfaces ethernet show interfaces trunk	

no mrp interconnection

<u>**Commands**</u>

no mrp interconnection <UINT:id>

Syntax Description	**no**	disabled
	mrp	Configure MRP
	interconnection	MRP interconnection
	id	MRP interconnection instance id
Defaults	N/A	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	`Moxa(config-rdnt)# no mrp interconnection 1`	
Error messages	N/A	
Related commands	show redundancy mrp ring	

no mrp react-on-lnk-chg

<u>**Commands**</u>

no mrp react-on-lnk-chg

Syntax	**no**	disabled
Description	**mrp**	Configure MRP
	react-on-lnk-chg	MRM react on MRC link change frame
Defaults	The default is enabled	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# no mrp react-on-lnk-chg	
Error messages	N/A	
Related commands	show redundancy mrp ring	

no mrp ring

<u>**Commands**</u>

no mrp ring

Syntax	**no**	disabled
Description	**mrp**	Configure MRP
	ring	MRP ring
Defaults	The default MRP ring is disabled.	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# no mrp ring	
Error messages	N/A	
Related commands	show redundancy mrp ring	

no mrp ring domain

<u>**Commands**</u>

no mrp ring domain

Syntax	**no**	disabled
Description	**mrp**	Configure MRP
	ring	MRP ring
	domain	MRP ring domain
Defaults	MRP ring domain is default	
Command Modes	N/A	
Usage Guidelines	N/A	
Examples	Moxa(config-rdnt)# no mrp ring domain	
Error messages	N/A	
Related commands	show redundancy mrp ring	

ntp authenticate

Use the **ntp autherticate** global configuration command on the switch to configure the authenticate time sources. Use the **no** form of this command to return to the default.

Commands

ntp authenticate

no ntp authenticate

Syntax	ntp	Configure Network Time Protocol
Description	**authenticate**	Authenticate time sources
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ntp authenticate`	
Error messages	N/A	
Related commands	show ntp authentication-status	

ntp authenticate-key

Use the **ntp autherticate-key** global configuration command on the switch to configure the authentication key of time sources. Use the **no** form of this command to return to the default.

Commands

ntp authentication-key key-id **md5** md5-string

no ntp authentication-key key-id

Syntax	ntp	Configure Network Time Protocol
Description	**authentication-key**	Authentication key for trusted time sources
	key-id	Key number
	md5	MD5 authentication
	md5-string	Authentication key
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ntp authentication-key 1 md5 123`	
Error messages	N/A	
Related commands	show ntp authentication-keys	

ntp peer servaddr

Use the **ntp peer servaddr** global configuration command on the switch to configure the Hostname/IP address of Network Time Protocol (NTP) peer key. Use the **no** form of this command to return to the default.

Commands

ntp peer servaddr [key id]

no ntp peer servaddr

Syntax	**ntp**	Configure Network Time Protocol
Description	**peer**	Configure NTP peer
	servaddr	Hostname/IP address of peer
	key-id	Configure peer authentication key
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ntp peer 192.168.127.20 MOXA(config)# ntp peer 192.168.127.20 123	
Error messages	N/A	
Related commands	show ntp peers	

ntp refresh-time

Use the **ntp refresh-time** global configuration command on the switch to configure the interval of each NTP query. Use the **no** form of this command to return to the default.

Commands

ntp refresh-time seconds

no ntp refresh-time

Syntax	**ntp**	Configure Network Time Protocol
Description	**refresh-time**	Configure SNTP query intervals
	seconds	1-9999 seconds
Defaults	Default query interval is 600 sec	
Command Modes	Global configuration	
Usage Guidelines	Data range: seconds: 1~9999	
Examples	MOXA# configure terminal MOXA(config)# ntp refresh-time 300	
Error messages	Time is out of range	
Related commands	show clock	

ntp server

Use the **ntp server** global configuration command on the switch to enable the switch as an NTP server. Use the **no** form of this command to return to disable it.

Commands

ntp server

no ntp server

Syntax	**ntp**	Configure Network Time Protocol
Description	**server**	Enable NTP server
Defaults	Default is disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ntp server`	
Error messages	N/A	
Related commands	show clock	

ntp trusted-key

Use the **ntp trusted-key** global configuration command on the switch to activate the authentication key of time sources. Use the **no** form of this command to return to the default.

Commands

ntp trusted-key key-id

no ntp trusted-key key id

Syntax	**ntp**	Configure Network Time Protocol
Description	**trusted-key**	Key numbers for trusted time sources
	key-id	Key number
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# ntp trusted-key 1`	
Error messages	N/A	
Related commands	show ntp trusted-keys	

password-policy complexity-check

Use the **password-policy complexity-check** global configuration command on switch to configure password complexity check. Use the **no** form of this command to default setting.

Commands

password-policy complexity-check [{ digit | alphabet | special-characters }]

no password-policy complexity-check

no password-policy complexity-check digit

no password-policy complexity-check alphabet

no password-policy complexity-check special-characters

Syntax Description	**password-policy**	Configure password policy
	complexity-check	Enable password complexity check.
	digit	Add password complexity check with digit.
	alphabet	Add password complexity check with alphabet.
	special-characters	Add password complexity check with special-characters.
Defaults	Disable complexity-check	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# password-policy complexity-check`
	`MOXA(config)# password-policy complexity-check digit`
	`MOXA(config)# password-policy complexity-check alphabet`
	`MOXA(config)# password-policy complexity-check special-characters`	

Error messages	N/A	
Related commands	N/A	

password-policy minimum-length

Use the **password-policy minimum-length** global configuration command on switch to configure the minimum password length. Use the no form of this command to default setting.

Commands

password-policy minimum-length length

no password-policy minimum-length

Syntax Description	**password-policy**	Configure password policy
	minimum-length	Configure the minimum password length.
	length	4 ~ 16 characters
Defaults	4 characters	
Command Modes	Global configuration	
Usage Guidelines	Length range: 4 ~ 16 characters	
Examples	`MOXA# configure terminal` `MOXA(config)# password-policy minimum-length 5`	
Error messages	Password minimum length should between 4~16	
Related commands	N/A	

ping

Use the **ping** user EXEC command on the switch to diagnose the remote host if it is alive.

<u>**Commands**</u>

ping destaddr

Syntax	**ping**	Send echo messages
Description	destaddr	E.g., 11.22.33.44
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# ping 192.168.127.20 Ping statistics for 192.168.127.20: Packets: Sent = 4, Received = 4, Lost = 0	
Error messages	N/A	
Related commands	N/A	

poe

Use the **poe** interface configuration command on the specific ports to set poe ouput mode.

<u>**Commands**</u>

poe auto

poe force budget watt

poe high-power

Syntax	**poe**	Power over Ethernet
Description	**auto**	PoE auto mode
	force	Set PoE port to force mode
	budget	Set force mode power budget
	watt	Set power budget(watt)
	high-power	Set PoE port to high power mode
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface watt is range from 1 to 36	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# poe auto MOXA(config-if)# poe high-power MOXA(config-if)# poe force budget 26	
Error messages	This port is not a POE port. POE port Watt should be between 1 and 36	
Related commands	poe enable	

poe enable

Use the **poe enable** configuration command on the specific ports to enable poe. Use the **no** poe command on the specific ports to disable poe.

Commands

poe enable

no poe

Syntax	**poe**	Power over Ethernet
Description	**enable**	Enable port PoE
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# no poe	
Error messages	This port is not a POE port.	
Related commands	poe auto poe force budget poe high-power poe legacy-pd-detect poe power-priority poe pdfail poe pdfail ip poe pdfail periods poe pdfail no-response-timeout poe pdfail no-response-action poe timetabling	

poe legacy-pd-detect

Use the **poe legacy-pd-detect** interface configuration command on the specific ports to enable poe legacy-pd-detect. Use the **no** form of this command on the specific ports to disable poe legacy-pd-detect.

Commands

poe legacy-pd-detect

no poe legacy-pd-detect

Syntax	**poe**	Power over Ethernet
Description	**legacy-pd-detect**	Disable legacy PD detection
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# poe legacy-pd-detect MOXA(config-if)# no poe legacy-pd-detect	
Error messages	This port is not a POE port.	
Related commands	poe enable	

poe pdfail

Use the **poe pdfail** configuration command on the specific ports to enable poe pd failure check. Use the **no** form of this command on the specific ports to disable.

Commands

poe pdfail

no poe pdfail

Syntax	**poe**	Power over Ethernet
Description	**pdfail**	PD failure check
Defaults	PD-failure-check is default disabled.	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# poe pdfail MOXA(config-if)# no poe pdfail	
Error messages	This port is not a POE port.	
Related commands	poe enable poe pdfail ip poe pdfail periods poe pdfail no-response-timeout poe pdfail no-response-action	

poe pdfail ip

Use the **poe pdfail ip** configuration command on the specific ports to configure the ip address of powered device to do failure check. Use the **no** form of this command on the specific ports to reset ip address default.

Commands

poe pdfail ip ipaddr

no poe pdfail ip

Syntax Description	**poe**	Power over Ethernet
	pdfail	PD failure check
	ip	Failure check ip
	ipaddr	IP
Defaults	NULL	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# poe pdfail MOXA(config-if)# poe pdfail ip 192.168.127.253 MOXA(config-if)# no poe pdfail ip	
Error messages	This port is not a POE port. ip invalid.	
Related commands	poe enable poe pdfail poe pdfail periods poe pdfail no-response-timeout poe pdfail no-response-action	

poe pdfail no-response-action

Use the **poe pdfail no-response-action** configuration command on the specific ports to configure poe pd failure check no-response-timeout action. Use the **no** form of this command on the specific ports to reset no-response-action default.

Commands

poe pdfail no-response-action { no-action | reboot-pd | power-off-pd }

no poe pdfail no-response-action

Syntax Description	**poe**	Power over Ethernet
	pdfail	PD failure check
	no-response-action	Set PD failure check no response action
	no-action	No action
	reboot-pd	Reboot PD
	power-off-pd	Power off PD
Defaults	no-action	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# poe pdfail MOXA(config-if)# poe pdfail no-response-action no-action MOXA(config-if)# poe pdfail no-response-action reboot-pd MOXA(config-if)# poe pdfail no-response-action power-off-pd	
Error messages	This port is not a POE port.	
Related commands	poe enable poe pdfail poe pdfail ip poe pdfail periods poe pdfail no-response-timeout	

poe pdfail no-response-timeout

Use the **poe pdfail no-response-timeout** configuration command on the specific ports to configure poe pd failure check no-response-timeout cycle. Use the **no** form of this command on the specific ports to reset no-response-timeout default.

<u>**Commands**</u>

poe pdfail no-response-timeout timeout

no poe pdfail no-response-timeout

Syntax Description	**poe**	Power over Ethernet
	pdfail	PD failure check
	no-response-timeout	Set PD failure check no response timeout
	timeout	Set no response timeout cycle
Defaults	timeout is 3	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface timeout is range from 1 to 10	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# poe enable`
	`MOXA(config-if)# poe pdfail`
	`MOXA(config-if)# poe pdfail no-response-timeout 4`
	`MOXA(config-if)# no poe pdfail no-response-timeout`	

Error messages	This port is not a POE port. Cycles should be between 1 and 10	
Related commands	poe enable poe pdfail poe pdfail ip poe pdfail periods poe pdfail no-response-action	

poe pdfail periods

Use the **poe pdfail periods** configuration command on the specific ports to configure poe pd failure check period of time. Use the **no** form of this command on the specific ports to reset period of time default.

Commands

poe pdfail periods periods

no poe pdfail periods

Syntax Description	**poe**	Power over Ethernet
	pdfail	PD failure check
	periods	Failure check periods
	periods	sec
Defaults	periods is 10	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
	periods is range from 5 to 300	
Examples	MOXA# configure terminal	
	MOXA(config)# interface ethernet 1/1	
	MOXA(config-if)# poe enable	
	MOXA(config-if)# poe pdfail	
	MOXA(config-if)# poe pdfail periods 30	
	MOXA(config-if)# no poe pdfail periods	
Error messages	This port is not a POE port.	
	Periods should be between 5 and 300.	
Related commands	poe enable	
	poe pdfail	
	poe pdfail ip	
	poe pdfail no-response-timeout	
	poe pdfail no-response-action	

poe power-priority

Use the **poe power-priority** interface configuration command on the specific ports to set poe port priority. Use the **no** form of this command on the specific ports to reset to default priority.

Commands

poe power-priority priority

no poe power-priority

Syntax Description	**poe**	Power over Ethernet
	power-priority	Set PoE port power priority
	priority	Port power priority
Defaults	priority is mapping to port number; For example, port G1's priority is 1; G4's priority is 4	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface	
	smaller priority is higher priority	
	port power priority is used in measured power mode only	
Examples	MOXA# configure terminal	
	MOXA(config)# interface ethernet 1/1	
	MOXA(config-if)# poe enable	
	MOXA(config-if)# poe power-priority 2	
	MOXA(config-if)# no poe power-priority	
Error messages	This port is not a POE port.	
	Power priority should be between 1 and 8.	
Related commands	poe enable	

poe system

Use the **poe system enable** configuration command on the switch to enable Power over Ethernet function on the switch. Use the **no** form of this command to return to the default. Use the **poe system power-budget budget** configuration command on the switch to set budget value.

<u>Commands</u>

poe system enable
poe system power-budget budget budgetvalue
no poe system

Syntax Description	**poe**	Power over Ethernet
	system	PoE system setting
	enable	PoE system power enable
	power-budget	PoE system power budget setting
	budget	Power budget
	budgetvalue	Power budget value
Defaults	budgetvalue = 30*PortNum	
Command Modes	Global configuration	
Usage Guidelines	budgetvalue is range from 30 to 1000	

Examples	`MOXA# configure terminal`
	`MOXA(config)# poe system enable`
	`MOXA(config)# poe system power-budget budget 30`	

Error messages	System power budget should be between 30 and 1000 Not support POE on this switch The assigned power value cannot be lower than the allocated power: 240 watts.	
Related commands	poe system threshold	

poe system threshold

Use the **poe system threshold power** configuration command on the switch to set threshold value. Use the **poe system cutoff** configuration command on the switch to switch to measured power mode on the switch. Use the **no poe system cutoff** form of this command to return to the default.

<u>Commands</u>

poe system threshold power threshold
poe system threshold cutoff
no poe system threshold { power | cutoff }

Syntax Description	**poe**	Power over Ethernet
	system	PoE system setting
	threshold	PoE system power threshold/cutoff enable setting
	power	PoE system power threshold setting
	cutoff	PoE system power threshold cut off enable
	threshold	PoE system power threshold
Defaults	threshold = 30*PortNum	
Command Modes	Global configuration	
Usage Guidelines	threshold is range from 30 to 1000	

Examples	`MOXA# configure terminal`
	`MOXA(config)# poe system threshold cutoff`
	`MOXA(config)# poe system threshold power 50`	

Error messages	System power budget should be between 30 and 1000 Not support POE on this switch	
Related commands	poe system threshold	

poe timetabling

Use the **poe timetabling** configuration command on the specific ports to enable poe time tabling function. Use the **poe timetabling** configuration command with week_day, start_time and end_time on the specific ports to enable weekday time tabling and also set start time and end time. Use the **no poe timetabling** command on the specific ports to disable time tabling. Use the **no poe timetabling** command with week_day on the specific ports to disable weekday time tabling.

<u>**Commands**</u>

poe timetabling [week_day] [start_time] [end_time]

no poe timetabling [week_day]

Syntax Description	**poe**	Power over Ethernet
	timetabling	PoE timetabling
	week_day	Enable / Disable PoE timetabling in weekday
	start_time	Timetabling start time
	end_time	Timetabling end time
Defaults	Time-tabling is default disabled. start_time is default 0 end_time is default 24	
Command Modes	Interface configuration	
Usage Guidelines	poe can only be enabled on poe-supported-interface week_day is range from 0 to 6, 0 means Monday end_time cannot be smaller than start_time	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# poe enable MOXA(config-if)# poe timetabling MOXA(config-if)# poe timetabling 0 MOXA(config-if)# poe timetabling 0 12 MOXA(config-if)# poe timetabling 0 12 24 MOXA(config-if)# no poe timetabling 0 MOXA(config-if)# no poe timetabling	
Error messages	This port is not a POE port. End time should be greater than Start time.	
Related commands	poe enable	

Port Enable Tracking

To set a port to a tracking entry, use the **port enable tracking** command. To unbind the tracking entry, use the **no** form of this command.

Commands

tracking tid

no tracking

Syntax	**tracking**	Set static binding a tracking entry
Description	tid	The tracking ID (1 - 64) of the bound tracking entry
Defaults	Without binding any tracking entry	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config) # interface ethernet 1/1 MOXA(config-if) # tracking 1 MOXA(config-if) # no tracking	
Error messages	Tracking ID should be between 1 and 64!	
	Tracking ID does not exist!	
Related commands	show interface ethernet	

port-security

Use the **port-security** command on the switch to configure the port security function. Use the **no** form of this command to disable the port security function on the switch.

Commands

[no] port security [MAC-address **[vid vid]]**

Syntax	**port-security**	Set port security
Description	MAC-address	MAC address XX:XX:XX:XX:XX:XX
	vid	Add mac address with vid
Defaults	N/A	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# config MOXA(config)# interface Ethernet 1/1 MOXA(config-if)# switchport port-security MOXA(port-sec)# port-security 00:00:00:00:00:01 MOXA(port-sec)# port-security 00:00:00:00:00:01 vid 2 MOXA(config-if)# no port-security 00:00:00:00:00:01	
Error messages	Add new static unicast MAC address Fail !!!	
Related commands	N/A	

profinetio

Use the **profinetio** command to disable/enable PROFINET support.

Commands

profientio

no profientio

Syntax Description	**profinetio**	Enable PROFINET IO
Defaults	Default is disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# profinetio`
	`MOXA(config)# no profinetio`	

Error messages	N/A	
Related commands	show profinetio	

ptp arb-time

Use the **ptp arb-time** configuration command on the switch to set the arb-time parameter of the local clock.

Commands

ptp arb-time time

Syntax Description	**ptp**	Configure PTP
	arb-time	Set the ARB time parameter of the local clock
	time	Set the ARB time parameter of the local clock
Defaults	default is 0	
Command Modes	Global configuration	
Usage Guidelines	time: 0 to 2147483646	
Examples	`MOXA# configure terminal` `MOXA(config)# ptp arb-time 0`	
Error messages	Arb time must be in the range from 0 to 2147483646	
Related commands	show ptp settings	

ptp clockclass

Use the **ptp clockclass** configuration command on the switch to set the clockclass parameter of the local clock.

Commands

ptp clockclass class

Syntax Description	**ptp**	Configure PTP
	clockclass	Set the clock class parameter of the local clock
	class	Set the clock class parameter of the local clock
Defaults	default is 248	
Command Modes	Global configuration	
Usage Guidelines	class: 0 to 255	
Examples	MOXA# configure terminal MOXA(config)# ptp clockclass 248	
Error messages	clockclass must be in the range from 0 to 255	
Related commands	show ptp settings	

ptp domain-number

Use the **ptp domain-number** configuration command on the switch to set the domain number of the local clock.

Commands

ptp domain-number interval

Syntax Description	**ptp**	Configure PTP
	domain-number	Set the domain number of the local clock
	interval	Sets the domain number of the local clock
Defaults	default is 0	
Command Modes	Global configuration	
Usage Guidelines	interval: 0 to 3	
Examples	MOXA# configure terminal MOXA(config)# ptp domain-number	
Error messages	domainNum must be in the range from 0 to 3	
Related commands	show ptp settings	
Error messages	N/A	

ptp enable

Use the **ptp enable** command on the switch to enable the PTP operation. Use the **no** form of this command to disable the PTP operation on the switch.

Commands

ptp enable

no ptp

Syntax	**ptp**	Configure PTP
Description	**enable**	Enable the ptp operation
Defaults	ptp is default disable	
Command Modes	Configuration Interface configuration mode	
Usage Guidelines	N/A	

Examples	`MOXA(config)# ptp enable`
	`MOXA(config)# no ptp`
	`MOXA(config-if)# ptp enable`
	`MOXA(config-if)# no ptp`	

Error messages	N/A	
Related commands	show ptp settings show ptp status show ptp port	

ptp leap59

Use the **ptp leap59** global configuration command on the switch to enable the PTP leap59. Use the **no** form of this command to disable the PTP leap59 on the switch.

Commands

ptp leap59

no ptp leap59

Syntax	**ptp**	Configure PTP
Description	**leap59**	enable the last minute of the current UTC day contains 59 seconds
Defaults	default disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ptp leap59`
	`MOXA(config)# no ptp leap59`	

Error messages	N/A	
Related commands	show ptp settings	

ptp leap61

Use the **ptp leap61** global configuration command on the switch to enable the PTP leap61. Use the **no** form of this command to disable the PTP leap61 on the switch.

Commands

ptp leap61

no ptp leap61

Syntax	**ptp**	Configure PTP
Description	**leap61**	enable the last minute of the current UTC day contains 61 seconds
Defaults	default disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ptp leap61`
	`MOXA(config)# no ptp leap61`	

Error messages	N/A	
Related commands	show ptp settings	

ptp log-announce-interval

Use the **ptp log-announce-interval** global configuration command on the switch to set the log-announce-interval parameter.

Commands

ptp log-announce-interval interval

Syntax	**ptp**	Configure PTP
Description	**log-announce-interval**	Set the logarithm to the base 2 of the mean AnnounceInterval
	interval	Setsthe logarithm to the base 2 of the mean AnnounceInterval
Defaults	default is 1	
Command Modes	Global configuration	
Usage Guidelines	interval: 0 to 4	
Examples	`MOXA# configure terminal` `MOXA(config)# ptp log-announce-interval`	
Error messages	logAnnounceInterval must be in the range from 0 to 4	
Related commands	show ptp settings	

ptp log-min-delay-req-interval

Use the **ptp log-min-delay-req-interval** global configuration command on the switch to set the log-min-delay-req-interval parameter.

<u>**Commands**</u>

ptp log-min-delay-req-interval interval

Syntax	**ptp**	Configure PTP
Description	**log-min-delay-req-interval**	Set the logarithm to the base 2 of the mean minDelayReqInterval
	interval	Sets the logarithm to the base 2 of the mean minDelayReqInterval
Defaults	default is 0	
Command Modes	Global configuration	
Usage Guidelines	interval: 0 to 5	
Examples	`MOXA# configure terminal` `MOXA(config)# ptp log-min-delay-req-interval`	
Error messages	logMinDelayReqInterval must be in the range from 0 to 5	
Related commands	show ptp settings	

ptp log-min-pdelay-req-interval

Use the **ptp log-min-pdelay-req-interval** global configuration command on the switch to set the log-min-pdelay-req-interval parameter.

<u>**Commands**</u>

ptp log-min-pdelay-req-interval interval

Syntax	**ptp**	Configure PTP
Description	**log-min-pdelay-req-interval**	Set the logarithm to the base 2 of the mean minPDelayReqInterval
	interval	Sets the logarithm to the base 2 of the mean minPDelayReqInterval
Defaults	default is 0	
Command Modes	Global configuration	
Usage Guidelines	interval: -1 to 5	
Examples	`MOXA# configure terminal` `MOXA(config)# ptp log-min-pdelay-req-interval`	
Error messages	logMinPDelayReqInterval must be in the range from -1 to 5	
Related commands	show ptp settings	

ptp log-sync-interval

Use the **ptp log-sync-interval** global configuration command on the switch to set the log-sync-interval parameter.

Commands

ptp log-sync-interval interval

Syntax	**ptp**	Configure PTP
Description	**log-sync-interval**	Set the logarithm to the base 2 of the mean SyncInterval
	interval	Sets the logarithm to the base 2 of the mean SyncInterval
Defaults	default is 0	
Command Modes	Global configuration	
Usage Guidelines	interval: -3 to 1	
Examples	MOXA# configure terminal MOXA(config)# ptp log-sync-interval 1	
Error messages	logSyncInterval must be in the range from -3 to 1	
Related commands	show ptp settings	

ptp mode

Use the **ptp mode** global configuration command on the switch to set the PTP operation mode.

Commands

ptp mode v1-bc

ptp mode v2-e2e-bc

ptp mode v2-p2p-bc

ptp mode v2-e2e-2step-tc

ptp mode v2-p2p-2step-tc

Syntax	**ptp**	Configure PTP
Description	**mode**	Set the ptp operation mode
	v1-bc	ptp v1 boundary clock mode
	v2-e2e-bc	ptp v2 end-to-end boundary clock mode
	v2-p2p-bc	ptp v2 peer-to-peer boundary clock mode
	v2-e2e-2step-tc	ptp v2 end-to-end 2-step transparent clock mode
	v2-p2p-2step-tc	ptp v2 peer-to-peer 2-step transparent clock mode
Defaults	Default setting of ptp is v1-bc mode	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ptp mode v1-bc	
Error messages	N/A	
Related commands	show ptp settings	

ptp preferred-master

Use the **ptp preferred-master** global configuration command on the switch to the local clock as the master clock (only valid in v1-bc mode).

Commands

ptp preferred-master

no ptp preferred-master

Syntax	**ptp**	Configure PTP
Description	**preferred-master**	Set the local clock as the master clock(only valid in v1-bc mode)
Defaults	default disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ptp preferred-master`
	`MOXA(config)# no ptp preferred-master`	

Error messages	N/A	
Related commands	show ptp settings	

ptp priority1

Use the **ptp priority1** configuration command on the switch to set the priority1 parameter of the local clock.

Commands

ptp priority1 priority

Syntax	**ptp**	Configure PTP
Description	**priority1**	Set the priority1 parameter of the local clock
	priority	Set the priority1 parameter of the local clock
Defaults	default is 128	
Command Modes	Global configuration	
Usage Guidelines	priority: 0 to 255	
Examples	`MOXA# configure terminal` `MOXA(config)# ptp priority1 128`	
Error messages	priority1 must be in the range from 0 to 255	
Related commands	show ptp settings	

ptp priority2

Use the **ptp priority2** configuration command on the switch to set the priority2 parameter of the local clock.

<u>**Commands**</u>

ptp priority2 priority

Syntax Description	**ptp**	Configure PTP
	priority2	Set the priority2 parameter of the local clock
	priority	Set the priority2 parameter of the local clock
Defaults	default is 128	
Command Modes	Global configuration	
Usage Guidelines	priority: 0 to 255	
Examples	MOXA# configure terminal MOXA(config)# ptp priority2 128	
Error messages	priority2 must be in the range from 0 to 255	
Related commands	show ptp settings	

ptp timescale

Use the **ptp timescale** configuration command on the switch to set the transport type of the ptp domain.

<u>**Commands**</u>

ptp timescale [arb|ptp]

Syntax Description	**ptp**	Configure PTP
	timescale	Set the timescale parameter of the local clock
	arb	Set the timescale parameter of the local clock to ARB
	ptp	Set the timescale parameter of the local clock to PTP
Defaults	default is ptp	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ptp timescale arb MOXA(config)# ptp timescale ptp	
Error messages	N/A	
Related commands	show ptp settings	

ptp transport

Use the **ptp transport** configuration command on the switch to set the transport type of the ptp domain.

Commands

ptp transport [802_3|ipv4]

Syntax Description	**ptp**	Configure PTP
	transport	Set the transport type of the ptp doman
	802_3	Set the transport type of the PTP domain to 802.3/Ethernet
	ipv4	Set the transport type of the PTP domain to IPv4
Defaults	default is ipv4	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# ptp transport 802_3 MOXA(config)# ptp transport ipv4	
Error messages	It can not set transport type as 802.3 when clock mode is V1 BC.	
Related commands	show ptp settings	

ptp utc-offset

Use the **ptp utc-offset** configuration command on the switch to set the PTP utc-offset field.

Commands

ptp utc-offset interval

Syntax Description	**ptp**	Configure PTP
	utc-offset	sets the offset between TAI and UTC
	interval	sets the offset between TAI and UTC
Defaults	default is 0	
Command Modes	Global configuration	
Usage Guidelines	interval: 0 to 65535	
Examples	MOXA# configure terminal MOXA(config)# ptp utc-offset 0	
Error messages	utc_offset must be in the range from 0 to 65535	
Related commands	show ptp settings	

ptp utc-offset-valid

Use the **ptp utc-offset-valid** configuration command on the switch to enable the PTP utc-offset field. Use the no form of this command to disable the PTP utc-offset field on the switch.

<u>**Commands**</u>

ptp utc-offset-valid

no ptp utc-offset-valid

Syntax	**ptp**	Configure PTP
Description	**utc-offset-valid**	UTC Offset field is valid
Defaults	default disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# ptp utc-offset-valid`
	`MOXA(config)# no ptp utc-offset-valid`	

Error messages	N/A	
Related commands	show ptp settings	

qos default-cos

Use the **qos default-cos** interface configuration command on the switch to configure the default CoS priority of the Ethernet ports/Trunks. Use the **no** form of this command to return to the default.

<u>**Commands**</u>

qos default-cos cos-value

no qos default-cos

Syntax	**qos**	Configure QoS
Description	**default-cos**	Configure Default CoS of each port
	cos-value	CoS value (0 to 7)
Defaults	Default CoS value is 3	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# qos default-cos 7`
	
	`MOXA(config-if)# no qos default-cos`	

Error messages	N/A	
Related commands	show qos	

qos inspect

Use the **qos inspect** global/interface configuration command on the switch to enable the inspect criteria. Use the **no** form of this command to disable it.

Commands

qos inspect dscp

no qos inspect dscp

qos inspect cos

no qos inspect cos

Syntax	**qos**	Configure QoS
Description	**inspect**	Configure inspection criteria
	dscp	Enable DSCP inspection
	cos	Enable CoS inpsection of each port
Defaults	N/A	
Command Modes	Global configuration Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# qos inspect cos MOXA(config-if)# qos inspect dscp MOXA(config-if)# no qos inspect cos MOXA(config-if)# no qos inspect dscp	
Error messages	N/A	
Related commands	show qos	

qos mapping

Use the **qos mapping** global configuration command on the switch to configure the Priority and DSCP mappings. Use the **no** form of this command to return to the default.

Commands

qos mapping priority-to-queue priority queue
no qos mapping priority-to-queue
qos mapping dscp-to-priority dscp priority
no qos mapping dscp-to-priority

Syntax Description	**qos**	Configure QoS
	mapping	Configure QoS mapping
	priority-to-queue	Priority to traffic queue
	priority	Priority value
	queue	Traffic queue
	dscp-to-priority	DSCP to priority mapping
	dscp-value	DSCP value
	dscp-to-queue	DSCP to traffic queue
Defaults	Priority (queue): 0 (0), 1(0), 2(1), 3(1), 4(2), 5(2), 6(3), 7(3) DSCP(priority): 0-15(0), 16-31(1), 32-47(2), 48-63(3)	
Command Modes	Global configuration	
Usage Guidelines	priority: 0 to 7 queue: 0 to 3 dscp: 0 to 63	
Examples	MOXA# configure terminal MOXA(config)# qos mapping priority-to-queue 7 3 MOXA(config)# no qos mapping priority-to-queue MOXA(config)# qos mapping dscp-to-priority 23 7 MOXA(config)# no qos mapping dscp-to-priority	
Error messages	Invalid parameter. Priority value must be 0~7 and queue value must be 0~3 Invalid parameter. DSCP value must be 0~63 and priority value must be 0~7	
Related commands	show qos priority-to-queue show qos dscp-to-priority	

qos mode

Use the **qos mode** global configuration command on the switch to configure the current QoS strategy. Use the **no** form of this command to return to the default.

Commands

qos mode { weighted-fair | strict }
no qos mode

Syntax Description	**qos**	Configure QoS
	mode	Configure queuing mechanism
	weighted-fair	Weighted fair queuing
	strict	Strict queuing
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# qos mode weighted-fair MOXA(config)# qos mode strict	
Error messages	N/A	
Related commands	show qos	

qos port-priority

Use the **qos port-priority** interface configuration command on the switch to set the Port Priority of the ingress frames. Use the **no** form of this command to return to the default.

Commands

qos port-priority priority

no qos port-priority

Syntax Description	**qos**	Configure QoS
	port-priority	Port priority
	priority	Configure port priority of each port
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# qos port-priority 1 MOXA(config-if)# no qos port-priority	
Error messages	N/A	
Related commands	show qos	

quit

Use **quit** to quit the current configuration mode.

Commands

quit

Syntax Description	**quit**	Quit the current configuration mode
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# quit	
Error messages	N/A	
Related commands	exit	

rate-limit

Use the **rate-limit** interface configuration command on the switch to configure the traffic rate allowed for the specified port. Use the **no** form of this command to return to the default. For Marvell 88E6095 chipsets, use **rate-limit ingress rate** to set the ingress rate limiting; for Broadcom chipsets, use **rate-limit ingress percentage** to set the ingress rate limiting.

Commands

rate-limit { ingress | egress } percentage percentage

no rate-limit { ingress | egress }

[no] rate-limit action { drop-packet | port-disable }

rate-limit drop-packet { ingress | egress } percentage percentage

no rate-limit drop-packet { ingress | egress }

rate-limit port-disable period period

rate-limit port-disable ingress rate { none | 44640 | 74410 | 148810 | 223220 | 372030 | 520840 | 744050 }

Syntax Description	rate-limit	Rate limiting
	drop-packet	Rate limiting normal drop-packet
	port-disable	Rate limiting port-disable mode
	ingress	Ingress rate limiting
	egress	Egress rate limiting
	percentage	Percentage correspond to current port speed
	percentage	Limit percentage, and will take effect at the percentage 0/3/5/10/15/25/35/50/65/85
	rate	Specify the rate
	period	Port disable period
	period	Seconds
Defaults	**0** or **none** means unlimiting.	
Command Modes	Interface configuration	
Usage Guidelines	The percentage will only take effect at the 0/3/5/10/15/25/35/50/65/85 %. For port disable mode, the port will be disabled when the ingress rate reach the specified packet rate.	

Examples	`MOXA(config-if)# rate-limit percentage`
	`  <UINT:percent>        - Limit percentage, and will take effect at`
	`the percentage`
	` 0/3/5/10/15/25/35/50/65/85`
	`MOXA(config-if)# rate-limit ingress rate none none none none`
	
	`MOXA(config-if)# rate-limit port-disable ingress period 30`
	`MOXA(config-if)# rate-limit port-disable ingress rate 148810`	

Error messages	Cannot configure on trunk member port 1/1! This setting cannot be applied on trunk port!	
Related commands	show interfaces rate-limit	

redundancy

Use the **redundancy** global configuration command on the switch to enter the redundancy configuration mode.

Commands

redundancy

Syntax Description	**redundancy**	Enter redundancy configuration mode
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# exit MOXA(config)#	
Error messages	N/A	
Related commands	show redundancy mode	

redundancy default

Use the **redundancy default** global configuration command to reset the redundancy protocol mode.

Commands

redundancy default

Syntax Description	**redundancy**	Enter redundancy configuration mode
	default	RSTP
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# redundancy default	
Error messages	N/A	
Related commands	show redundancy mode	

redundancy mode

Use the **redundancy mode** global configuration command on the switch to change the redundancy protocol mode.

<u>**Commands**</u>

redundancy mode { mst | rstp | turbo-ring-v1 | turbo-ring-v2 | turbo-chain }

Syntax Description	redundancy	Enter redundancy configuration mode
	mode	Specify the redundancy protocol
	mst	MSTP
	rstp	Rapid Spanning Tree
	turbo-ring-v1	Turbo ring version 1
	turbo-ring-v2	Turbo ring version 2
	turbo-chain	Turbo chain
Defaults	The default redundancy protocol mode is RSTP.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA(config)# redundancy mode rstp`
	`MOXA(config)# redundancy mode turbo-ring-v1`
	`MOXA(config)# redundancy mode turbo-ring-v2`
	`MOXA(config)# redundancy mode turbo-chain`
	`MOXA(config)# redundancy mode mst`	

Error messages	N/A	
Related commands	show redundancy mode	

relay-warning event (System)

Use **relay-warning event** global configuration commands to enable the warning events trigger to the relay. Use the **no** form of this command to disable it.

Commands

relay-warning event { power-input1-fail | power-input2-fail | turbo-ring-break }
no relay-warning event { power-input1-fail | power-intput2-fail | turbo-ring-break }

Syntax Description	**relay-warning**	Configure relay warning
	event	System events
	power-input1-fail	Power input 1 failure (On->Off)
	power-input2-fail	Power input 2 failure (On->Off)
	turbo-ring-break	Turbo Ring break
Defaults	All system events are disabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# relay-warning`
	`MOXA(config)# relay-warning event power-input1-fail`
	`MOXA(config)# relay-warning event power-input2-fail`
	`MOXA(config)# relay-warning event turbo-ring-break`
	`MOXA(config)# no relay-warning event power-input1-fail`
	`MOXA(config)# no relay-warning event power-input2-fail`
	`MOXA(config)# no relay-warning event turbo-ring-break`	

Error messages	N/A	
Related commands	show relay-warning	

relay-warning event (Port)

Use **relay-warning event** interface configuration commands to enable the warning events trigger to the relay. Use the **no** form of this command to disable it.

Commands

relay-warning event { link-on | link-off }
relay-warning event traffic-overload [rxThreshold duration]
no relay-warning event { link | traffic-overload }

Syntax Description	**relay-warning**	Configure relay warning
	event	Port events
	link-on	Link ON
	link-off	Link OFF
	traffic-overload	Traffic overloading
	rxThreshold	0 to 100
	duration	1 to 300
	link	All link events
Defaults	All interface events are disabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	```MOXA(config)# interface ethernet 3/1```
	```MOXA(config-if)# relay-warning event ?```
	``` link-on - Link ON```
	``` link-off - Link OFF```
	``` traffic-overload - Traffic overloading```
	```MOXA(config-if)# relay-warning event link-off```
	```MOXA(config-if)# relay-warning event traffic-overload```	

Error messages	Threshold should be between 0 and 100 Duration should be between 1 and 300	
Related commands	show relay-warning	

relay-warning override

Use **relay-warning override** relay to override the relay warning setting temporarily. Releasing the relay output will allow administrators to fix any problems with the warning condition. Use the **no** form of this command to disable the override.

Commands

relay-warning override relay
no relay-warning override relay

Syntax Description	**relay-warning**	Configure relay warning
	override	Override the relay warning setting
	relay	Relay
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	```MOXA# configure terminal```
	```MOXA(config)# relay-warning override relay```
	```MOXA(config)# no relay-warning override relay```	

Error messages	N/A	
Related commands	show relay-warning config	

reload

Use the **reload** privileged command on the switch to restart the Moxa Switch. Use the **reload factory-default** privileged command to restore the switch configuration to the factory default values.

<u>**Commands**</u>

reload [factory-default]

Syntax	**reload**	Halt and perform a cold restart
Description	**factory-default**	Halt and perform a cold restart with factory default
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# reload Proceed with reload ? [Y/n] MOXA# reload factory-default Proceed with reload to factory default? [Y/n]	
Error messages	N/A	
Related commands	N/A	

save config

Use the **save config** command to save the running configuration to the startup configuration on flash.

<u>**Commands**</u>

save config

Syntax	**save**	Save running configuration to flash
Description	**config**	Save running configuration to flash
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# save config Saving configuration ...Success	
Error messages	N/A	
Related commands	N/A	

show acl

Use the **show acl** user EXEC command to display the ACL configuration information.

Commands

show acl id

show acl summary

Syntax Description	show	Show running system information
	acl	Display ACL information
	id	The access list ID
	summary	Display active ACL status
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show acl 10`
	`ACL ID      : 10`
	`Name        :`
	`Type        : MAC-base`
	
	`  Rule Index              : 1`
	`  Action                  : deny`
	`  Source MAC Address      : 00:11:22:33:44:55/FF:FF:FF:00:00:00`
	`  Destination MAC Address : AA:BB:CC:DD:EE:FF/FF:FF:FF:00:00:00`
	`  Ether Type              : 2048`
	`  VLAN ID               : 10`
	`  Ingress Port Map        : 0`
	`  Egress Port Map         : 0`
	`  ------------------------------------------------------------`
	
	`MOXA# show acl summary`
	
	`Type     ID    Attached Port             Name`
	`-------- ----- ------------------------  --------------------`
	`MAC-base 1                               test_acl1`
	`MAC-base 10`		

Error messages	Invalid ID!	
Related commands	acl id	

show authentication dot1x

Use the **show authentication dot1x** user EXEC command to display 802.1x authentication login setting information

Commands

show authentication dot1x
show authentication radius dot1x-mab
show authentication local dot1x

Syntax Description	**show**	Show running system information
	authentication	Display authentication settings
	dot1x	Display dot1x authentication settings
	radius	Display radius settings
	local	Display local db settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show authentication dot1x Dot1x Database Option : Local Re-Authentication : Enable Re-Authentication Period : 3600 Port 802.1X Enable ---- ------------- 1/2 Disable 1/3 Disable 1/4 Disable 1/5 Disable 1/6 Disable 1/7 Disable 1/8 Disable 1/9 Disable 1/10 Disable 1/11 Disable 1/12 Disable 1/13 Disable 1/14 Disable 1/15 Disable 1/16 Disable MOXA# show authentication radius dot1x-mab 1st Radius Server : 1st Server Port : 1812 1st Shared Key : 2nd Radius Server : 2nd Server Port : 1812 2nd Shared Key : MOXA# show authentication local dot1x Index User Name Description ----- ------------------------------ ------------------------------	
Error messages	N/A	
Related commands	authentication dot1x {radius [local] | local | reauth [period seconds]} no authentication dot1x [{reauth [period]}] authentication radius dot1x-mab {use login server | 1stServer server	

---

	authentication radius dot1x-mab {1stServer | 2ndServer} {server-ip server_ip | server-port server_port | shared-key shared_key}
	no authentication radius dot1x-mab {use login server | 1stServer | 2ndServer}
	authentication local dot1x username username password password desc description
	no authentication local dot1x {all user | username username}

show authentication login

Use the **show authentication login** user EXEC command to display authentication login setting information

Commands

show authentication login
show authentication radius login
show authentication tacacs+ login

Syntax Description	**show**	Show running system information
	authentication	Display authentication settings
	login	Display login authentication settings
	radius	Display radius settings
	tacas+	Display tacacs+ settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	```MOXA# show authentication login

Auth Server Mode: Local

MOXA# show authentication radius login
Radius information:
    Status   : Disabled
    Auth server   :
    Shared key   :
    Auth type   : PAP
    Server Timeout : 5 secs

MOXA# show authentication tacacs+ login

Tacacs+ information:
    Status   : Disabled
    Auth server   :
    Shared key   :
    Auth type   : ASCII
    Server Timeout : 5 secs

MOXA# show authentication local dot1x
Index User Name   Description
----- ----------------------------- -----------------------------``` | |
Error messages	N/A	
Related commands	authentication login {radius [local] | tacacs+ [plus local] | local}	
	no authentication login	
	authentication radius login {server ip serve_ ip | server port server_port | shared key shared_ key | timeout timeout | auth-type {pap | chap}}	
	no authentication radius login	
	authentication tacacs+ login {server ip serve_ ip | server port server_port | shared key shared_ key | timeout timeout | auth-type {asci | pap | chap | mschap}}	
	no authentication tacacs+ login [auth-type]	

show authentication mab

Use the **show authentication mab** user EXEC command to display MAC Address Bypass (MAB) authentication login setting information

<u>**Commands**</u>

show authentication mab

Syntax Description	**show**	Show running system information
	authentication	Display authentication settings
	mab	Display mab authentication settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show authentication mab MAB db: radius server MAB re-authorizing timer is disabled MAB re-start timer is disabled All Ports disable MAB	
Error messages	N/A	
Related commands	authentication mab {radius | reauth [period seconds] | restart [period seconds]} no authentication mab [{reauth [period] | restart [period]}]	

show authentication tacacs+ login

<u>**Commands**</u>

show authentication tacacs+ login

Syntax Description	**show**	Show running system information
	authentication	authentication
	tacacs+	Display tacacs+ settings
	login	Display login authentication settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA#show authentication tacacs+ login
	Tacacs+ information:
	    Status : Enabled
	Authentication information:
	    [Primary Server]
	    Auth server : 192.168.127.1, port:49
	       Shared key : moxa1
	    [Secondary Server]
	    Auth server : 192.168.127.2, port:49
	       Shared key : moxa2
	    Auth type: PAP
	    Server Timeout : 5 secs
	
	Authorization information:
	    [Primary Server]
	    Auth server : 192.168.127.11, port:49
	       Shared key : moxa11
	    [Secondary Server]
	    Auth server : 192.168.127.12, port:49	

| | ```
        Shared key       : moxa12
    Server Timeout       : 5 secs

Accounting information:
    Enabled              : Enabled
    [Primary Server]
    Auth server          : 192.168.127.31, port:49
        Shared key       : moxa31
    [Secondary Server]
    Auth server          : 192.168.127.32, port:49
        Shared key       : moxa32
    Server Timeout       : 5 secs
``` |
| **Error messages** | N/A |
| **Related commands** | authentication tacacs+ login primary server-ip <STRING:server_ip>
authentication tacacs+ login secondary server-ip <STRING:server_ip>
authentication tacacs+ login primary server-port <UINT:server_port>
authentication tacacs+ login secondary server-port <UINT:server_port>
authentication tacacs+ login primary shared-key <STRING:shared_key>
authentication tacacs+ login secondary shared-key <STRING:shared_key>
authentication tacacs+ login timeout <UINT:timeout>
authorization tacacs+ login primary server-ip <STRING:server_ip>
authorization tacacs+ login secondary server-ip <STRING:server_ip>
authorization tacacs+ login primary server-port <UINT:server_port>
authorization tacacs+ login secondary server-port <UINT:server_port>
authorization tacacs+ login primary shared-key { <STRING:shared_key> }
authorization tacacs+ login secondary shared-key { <STRING:shared_key> }
authorization tacacs+ login timeout <UINT:timeout>
accounting tacacs+ login primary server-ip <STRING:server_ip>
accounting tacacs+ login secondary server-ip <STRING:server_ip>
accounting tacacs+ login primary server-port <UINT:server_port>
accounting tacacs+ login secondary server-port <UINT:server_port>
accounting tacacs+ login primary shared-key { <STRING:shared_key> }
accounting tacacs+ login secondary shared-key { <STRING:shared_key> }
accounting tacacs+ login timeout <UINT:timeout>
accounting tacacs+ login enable
no accounting tacacs+ login enable |

show clock

Use the **show clock** user EXEC command to display time-related settings.

<u>**Commands**</u>

show clock

Syntax	**show**	Show running system information
Description	**clock**	Display the system clock
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show clock`
	`Current Time          : Thu Jan 01 04:10:36 1970`
	`Clock Source          : Local`
	`Daylight Saving`
	`    Start Date        :`
	`     End Date         :`
	`     Offset           :`
	`Time Zone             : GMT-0:00`
	`Time Server           : time.nist.gov`
	`NTP/SNTP Server       : Disabled`	

Error messages	N/A	
Related commands	clock set clock summer-time clock timezone ntp refresh-time ntp remote-server ntp server	

show dip-switch

Use the **show dip-switch** user EXEC command to display DIP switch configuration.

<u>**Commands**</u>

show dip-switch

Syntax	**show**	Show running system information
Description	**dip-switch**	Display DIP switch configuration
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show dip-switch`
	`Dip switch is Enable.`
	`Dip switch mode is Turbo-ring V2.`	

Error messages	N/A	
Related commands	dip switch disable dip switch enable dip switch mode turbo-ring-v1 dip switch mode turbo-ring-v2	

show dot1x

To check the 802.1x setting, use the **show dot1x** command.

Commands

show dot1x

Syntax	show	Show running system information
Description	dot1x	Display 802.1x settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show dot1x Database Option : Local 1st Radius Server : 1st Server Port : 1812 1st Shared Key : 2nd Radius Server : 2nd Server Port : 1812 2nd Shared Key : Re-Auth : Enable Re-Auth Period : 3600 Port 802.1X Enable ---- ------------- 1/2 Disable 1/3 Disable 1/4 Disable 1/5 Disable 1/6 Disable 1/7 Disable 1/8 Disable 1/9 Disable 1/10 Disable 1/11 Disable 1/12 Disable 1/13 Disable 1/14 Disable 1/15 Disable 1/16 Disable	
Error messages	N/A	
Related commands	authentication dot1x {radius | local | radius local} authentication dot1x reauth [period seconds]	

show eip

Use the **show eip** user EXEC command to display the EtherNet/IP configuration information.

Commands

show eip

Syntax	**show**	Show running system information
Description	**eip**	Display EtherNet/IP configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show eip eip disable	
Error messages	N/A	
Related commands	eip no eip	

show email-warning config

Use the **show email-warning config** user EXEC command to display email warning configuration information.

Commands

show email-warning config

Syntax	**show**	Show running system information
Description	**email-warning**	Display Email warning configuration
	config	Email warning configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show email-warning config
	Mail Server and Email Setup
	  SMTP Server IP/Name :
	  SMTP Port : 25
	  Account Name :
	  Account Password :
	
	  1st email address :
	  2nd email address :
	  3rd email address :
	  4th email address :
	System Events
	  Cold Start : Disable
	  Warm Start : Disable
	  Conf. Changed : Disable
	  Power On->Off : Disable
	  Power Off->On : Disable
	  Auth. Failure : Disable
	  Topology Changed : Disable
	--More--
	Port Events Setting
	        Link Link Traffic RX
	Traffic	

	Port	ON	OFF	Overload	Threshold(%)	
	Duration(s)					
	------------	----------	----------	----------	----------------	-----------
	1-1	Disable	Disable	Disable	0	1
	1-2	Disable	Disable	Disable	0	1
	1-3	Disable	Disable	Disable	0	1
	1-4	Disable	Disable	Disable	0	1
	1-5	Disable	Disable	Disable	0	1
	1-6	Disable	Disable	Disable	0	1
	1-7	Disable	Disable	Disable	0	1
	1-8	Disable	Disable	Disable	0	1
	3-1	Disable	Disable	Disable	0	1
	3-2	Disable	Disable	Disable	0	1
	3-3	Disable	Disable	Disable	0	1
	3-4	Disable	Disable	Disable	0	1
	3-5	Disable	Disable	Disable	0	1
	3-6	Disable	Disable	Disable	0	1
	3-7	Disable	Disable	Disable	0	1
	3-8	Disable	Disable	Disable	0	1

Error messages	N/A
Related commands	email-warning event

show fiber-check-threshold

<u>Commands</u>

show fiber-check-threshold

Syntax Description	**show**	Show running system information
	fiber-check-threshold	Display Fiber DDM threshold Status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show fiber-check-threshold port enable temperature txUpper txLower rxLower -- -------- G13 enable 32.47 3.40 -12.34 -10.23 G14 disable ---- ---- ---- ---- G15 disable ---- ---- ---- ---- G16 enable 200.00 10.00 0.00 0.00		
Error messages	N/A	
Related commands	fiber-check-threshold no fiber-check-threshold fiber-check-threshold temperature <STRING:temperature> no fiber-check-threshold temperature fiber-check-threshold tx-upperbound <STRING:upperbound> no fiber-check-threshold tx-upperbound fiber-check-threshold tx-lowerbound <STRING:lowerbound> no fiber-check-threshold tx-lowerbound fiber-check-threshold rx-lowerbound <STRING:lowerbound> no fiber-check-threshold rx-lowerbound	

show fiber-status

Use the **show fiber status** user EXEC command to display the fiber DDM (Digital Diagnostics Monitoring) status.

Commands

show fiber-status

Syntax	**show**	Show running system information
Description	**fiber-status**	Display Fiber DDM Status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show fiber-status	
Error messages	N/A	
Related commands	N/A	

show garp timer

Use the **show garp timer** user EXEC command to display the GARP timer settings.

Commands

show garp timer

Syntax	**show**	Show running system information
Description	**garp timer**	Display GARP Timer
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show garp timer
	
	GARP Timer:
	      Join Time:200 (ms)
	      Leave Time:600 (ms)
	      Leaveall Time:10000 (ms)	

Error messages	N/A	
Related commands	garp join-time time garp leave-time time garp leaveall-time time	

show gmrp

Use the s**how gmrp** user EXEC command to display the GMRP table of the switch.

Commands

show gmrp

Syntax Description	**gmrp**	Show GMRP Settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show gmrp`
	`Index Multicast Address Fixed Ports                       Learned Ports`
	`----- ---------------- -------------------------- ------------------`
	`----------`	

Error messages	N/A	
Related commands	gmrp no gmrp	

show gvrp

Use the **show gvrp** user EXEC command to display GVRP state information.

Commands

show gvrp

Syntax Description	**show**	Show running system information
	gvrp	Display GVRP configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	`MOXA# show gvrp` `gvrp enable`	
Error messages	N/A	
Related commands	gvrp	

show interface linkdisable

<u>**Commands**</u>

show interface linkdisable

Syntax Description	show	Show running system information
	interface	Interface status and configuration
	linkdisable	Link disable status
Defaults	disable	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
| Examples | ```
MOXA# show int linkdisable
Port    linkDisable
----     -----------
G1     disable
G2     disable
G3     disable
G4     disable
G5     disable
G6     disable
G7     disable
G8     disable
G9     disable
G10    disable
``` | |
| Error messages | N/A | |
| Related commands | N/A | |

show interfaces acl

Use the **show interfaces acl** user EXEC command to display ACL configurations by port interface.

<u>**Command**</u>

show interfaces ethernet [module/port] **acl**

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	module/port	Port ID or list. Ex. 1/1,2,3,2/1-3,5,...
	acl	Display ACL configurations by port
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show interfaces ethernet 2/1 acl`
	
	`Type      ID      Direction  Index`
	`-------- ------- ---------- ------`
	`IP-base  2       Inbound    1`
	`MAC-base 4       Inbound     2`
	`IP-base  7       Inbound    3`
	`MAC-base 11      Outbound   4`	

Error messages	Invalid ID!	
Related commands	N/A	

show interfaces counters

Use the **show interfaces counters** user EXEC command to display traffic statistics information of interfaces.

Commands

show interfaces counters

show interfaces ethernet port-id **counters**

show interfaces trunk trunk-id **counters**

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	counters	Display counters
	ethernet	IEEE 802.3/IEEE 802.3z
	trunk	Show interface trunk information
	port-id	Port ID or list. E.g., 1/1,2,3,2/1-3,5,...
	trunk-id	Trunk ID (or list)
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	Detail counter information will contain the differences information from last query.	

Examples	MOXA# show interfaces counters
	  Port Tx Packets(Load%) Rx Packets(Load%)
	  ---- ------------------------ -------------------------
	  G1 0(0) 0(0)
	  G2 0(0) 0(0)
	  G3 0(0) 0(0)
	  G4 0(0) 0(0)
	  G5 0(0) 0(0)
	  G6 0(0) 0(0)
	  G7 0(0) 0(0)
	  G8 0(0) 0(0)
	  G9 490(0) 975(0)
	  G10 0(0) 0(0)
	  G11 0(0) 0(0)
	  G12 0(0) 0(0)
	  G13 0(0) 0(0)
	  G14 0(0) 0(0)
	  G15 0(0) 0(0)
	  G16 0(0) 0(0)
	
	  MOXA# show interfaces ethernet 1/1 counters
	  Port 1/1 (last sample time: 13655 secs ago)
	    - TX -
	      Unicast Packets : 0 +0
	      Multicast Packets : 0 +0
	      Broadcast Packets : 0 +0
	      Collision Packets : 0 +0
	    - RX -
	      Unicast Packets : 0 +0
	      Multicast Packets : 0 +0
	      Broadcast Packets : 0 +0
	      Pause Packets : 0 +0
	    - Error -
	      TX Late : 0 +0
	      TX Excessive : 0 +0
	      RX CRC error : 0 +0
	      RX Discard : 0 +0

```
                       RX Undersize        : 0                        +0
                       RX Fragments        : 0                        +0
                       RX Oversize         : 0                        +0
                       RX Jabber           : 0                        +0


              MOXA# show interfaces trunk 1/17 counters
              Trk1 (last sample time: 13877 secs ago)
                - TX -
                       Unicast Packets     : 0                        +0
                       Multicast Packets   : 0                        +0
                       Broadcast Packets   : 0                        +0
                       Collision Packets   : 0                        +0
                - RX -
                       Unicast Packets     : 0                        +0
                       Multicast Packets   : 0                        +0
                       Broadcast Packets   : 0                        +0
                       Pause Packets       : 0                        +0
                - Error -
                       TX Late             : 0                        +0
                       TX Excessive        : 0                        +0
                       RX CRC error        : 0                        +0
                       RX Discard          : 0                        +0
                       RX Undersize        : 0                        +0
                       RX Fragments        : 0                        +0
                       RX Oversize         : 0                        +0
                       RX Jabber           : 0                        +0
```

Error messages	There is no member in Trunk 1
	Illegal parameter
	Invalid trunk id
	Invalid port
Related commands	N/A

show interfaces ethernet

To check the status of interfaces, use the **show interfaces ethernet** command.

<u>**Commands**</u>

show interfaces ethernet [module/port **[config]**]

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	module/port	Port ID or list. E.g., 1/1,2,3,2/1-3,5,...
	config	Show interface module/port settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show interfaces ethernet Port Link Description Speed FDX Flow Ctrl MDI/MDIX ---- ------- --------------------- --------- ------------- ------- - 1/3 Off 1000TX,RJ45. -- -- -- 1/4 Off 1000TX,RJ45. -- -- -- 1/5 Off 1000TX,RJ45. -- -- -- 1/6 Off 1000TX,RJ45. -- -- -- 1/7 Off 1000TX,RJ45. -- -- -- 1/8 Off 1000TX,RJ45. -- -- -- 1/9 On 1000TX,RJ45. 1G-Full Off Auto 1/10 Off 1000TX,RJ45. -- -- -- 1/11 Off 1000TX,RJ45. -- -- -- 1/12 Off 1000TX,RJ45. -- -- -- 1/13 Off 1000FX,miniGBIC. -- -- -- 1/14 Off 1000FX,miniGBIC. -- -- -- 1/15 Off 1000FX,miniGBIC. -- -- -- 1/16 Off 1000FX,miniGBIC. -- -- -- Trk1 Off MOXA# show interfaces ethernet 1/3 Port Link Description Speed FDX Flow Ctrl MDI/MDIX ---- ------- --------------------- --------- ------------- ------- - 1/3 Off 1000TX,RJ45. -- -- -- MOXA# show interfaces ethernet 1/3 config Port Enable Description Speed FDX Flow Ctrl MDI/MDIX ---- ------ --------------------- --------- ------------- -------- 1/3 Yes 1000TX,RJ45. Auto Disable Auto	
Error messages	N/A	
Related commands	N/A	

---

show interfaces mgmt

Use the **show interfaces mgmt** user EXEC command to display the mgmt-VLAN settings.

<u>**Commands**</u>

show interfaces mgmt

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	mgmt	Display management VLAN information
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show interfaces mgmt
	
	IPv4
	  Management VLAN id : 1
	  IP configuration : Static
	  IP address : 192.168.127.250
	  Subnet mask : 255.255.255.0
	  Default gateway : 0.0.0.0
	  DNS server :
	
	IPv6
	  Global Unicast Address Prefix :
	  Global Unicast Address : ::
	  Link-Local Address : fe80::a8bb:ccff:fedd:eeff	

Error messages	N/A	
Related commands	ip address ip default-gateway ip name-server bind vlan	

show interfaces mgmt access-ip

Use the **show interfaces mgmt access-ip** user EXEC command to display the settings of accessible IP list.

<u>**Commands**</u>

show interfaces mgmt access-ip

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	mgmt	Display management VLAN information
	access-ip	Display accessible IP list
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show interfaces mgmt access-ip Trusted Access IP List: Disable Index IP / Netmask	
Error messages	N/A	
Related commands	access-ip	

show interfaces mgmt trusted-access

Same as **show interfaces mgmt access-ip**.

<u>Commands</u>

show interfaces mgmt trusted-access

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	mgmt	Display management VLAN information
	trusted-access	Display trusted access IP list
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show interfaces mgmt trusted-access Trusted Access IP List: Disable Index IP / Netmask	
Error messages	N/A	
Related commands	trusted-access	

show interfaces rate-limit

Use the **show interfaces rate-limit** user EXEC command to display the setting of Rate-limiting.

<u>Commands</u>

show interfaces ethernet module/port **rate-limit**

Syntax Description	**show**	Show running system information
	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	module/port	Port ID or list. E.g., 1/1,2,3,2/1-3,5,...
	rate-limit	Rate limiting configuration
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show interfaces ethernet 1/3 rate-limit
	Normal mode :
	Port 1/3:
	    Ingress Limit Rate: 3%
	
	MOXA# show interfaces ethernet 1/3-5 rate-limit
	Normal mode :
	Port 1/3:
	    Ingress Limit Rate: 3%
	
	Port 1/4:
	    Ingress Limit Rate: Not Limited
	
	Port 1/5:
	    Ingress Limit Rate: Not Limited	

Error messages	N/A	
Related commands	rate-limit	

show ip auto-assign

Use the **show ip auto-assign** user EXEC command to display the setting of the Auto IP Assignment feature.

<u>**Commands**</u>

show ip auto-assign

Syntax	**show**	Show running system information
Description	**ip**	Display IP information
	auto-assign	Display automatic ip asignment settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ip auto-assign	
Error messages	N/A	
Related commands	ip auto-assign	

show ip dhcp-relay config

Use the **show ip dhcp-relay config** user EXEC command to display the setting of the DHCP relay feature.

<u>**Commands**</u>

show ip dhcp-relay config

Syntax	**show**	Show running system information
Description	**ip**	Display IP information
	dhcp-relay	Display DHCP relay configuration
	config	DHCP relay configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show ip dhcp-relay config
	DHCP Relay Agent Setting
	  1st server IP :
	  2nd server IP :
	  3rd server IP :
	  4th server IP :
	DHCP Relay Option 82: Enable
	  Remote ID type : Other
	  Remote ID value : 1234567890123
	  Remote ID display: 31323334353637383930313233
	--More--
	DHCP Function Table
	Port Circuit-ID Option 82
	----- ---------------- ----------------
	1-1 01000101 Disable
	1-2 01000102 Disable
	1-3 01000103 Disable
	1-4 01000104 Disable
	1-5 01000105 Disable
	1-6 01000106 Disable
	1-7 01000107 Disable	

	1-8	01000108	Disable
	3-1	01000111	Disable
	3-2	01000112	Disable
	3-3	01000113	Disable
	3-4	01000114	Disable
	3-5	01000115	Disable
	3-6	01000116	Disable
	3-7	01000117	Disable
	3-8	01000118	Disable
Error messages	N/A		
Related commands	N/A		

show ip http-server status

Use **show ip http-server status** to display HTTP server related settings.

Commands

show ip http-server status

Syntax Description	**show**	Show running system information
	ip	Display IP information
	http-server	HTTP server information
	status	Status
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show ip http-server status
	HTTP service is enable
	  HTTP server capability : Present
	  HTTPS secure server capability : Present
	  Auto-logout : 5 minutes	

Error messages	N/A	
Related commands	N/A	

show ip igmp

Use the **show ip igmp** user EXEC command to display the Internet Group Management Protocol (IGMP) snooping configuration and IGMP table of the switch.

Commands

show ip igmp [{vlan vlan_id | **querier [vlan** vlan_id] | **group** [group_addr] [**vlan** vlan_id]}]

Commands	show	Show running system information
	ip	Display IP information
	igmp	Show IGMP snooping settings
	vlan	Show IGMP snooping tables by the vlan id
	vlan_id	VLAN ID
	querier	Show IGMPv3 querier table
	group	Show IGMPv3 group table
	group_addr	group address
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show ip igmp
	IGMP Snooping :Enable
	IGMP Snooping Enhanced Mode :Enable
	Query Interval :125(sec)
	Multicast Fast Forwarding Mode:Disable
	
	MOXA# show ip igmp querier
	VID |Static(S) / Learned(L) / Multicast Querier |Enable
	Querier|Querier State
	    |Port & Querier(Q) connected Port |
	|
	-- 	
	--------- 	
	   1 Enable(V2)
	Querier	

Error messages	N/A	
Related commands	N/A	

show ipv6 neighbors

Use the **show ipv6 neighbors** to display IPv6 information.

Commands

show ipv6 neighbors

Syntax Description	**show**	Show running system information
	ipv6	Display IPv6 information
	neighbors	IPv6 neighbors
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show ipv6 neighbors
	
	                   IPv6 address Link Layer address Status
	-- ------------------ ----------
	             fe80::a8bb:ccff:fedd:eeff aa:bb:cc:dd:ee:ff Reachable	

Error messages	N/A	
Related commands	N/A	

show lldp

Use the **show lldp** command to display the LLDP settings and the LLDP neighbor information.

Commands

show lldp [entry]

Syntax Description	**show**	Show running system information
	lldp	Display LLDP information
	entry	LLDP entries
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show lldp
	LLDP Enable : Enable
	Message Transmit Interval: 30 seconds
	
	MOXA# show lldp entry
	Port : 23
	    Neighbor ID : 00:90:e8:0a:0a:0a
	    Neighbor Port : 3
	    Neighbor Port Descript : 100TX,RJ45.
	    Neighbor System : Managed Redundant Switch 00000
	Port : 19
	    Neighbor ID : 00:90:e8:0a:0a:0a
	    Neighbor Port : 2
	    Neighbor Port Descript : 100TX,RJ45.
	    Neighbor System : Managed Redundant Switch 00000
	Port : 24
	    Neighbor ID : 00:90:e8:0a:0a:0a
	    Neighbor Port : 1
	    Neighbor Port Descript : 100TX,RJ45.
	    Neighbor System : Managed Redundant Switch 00000	

Error messages	N/A	
Related commands	[no] lldp enable lldp timer [transFreq] no lldp timer	

show logging

Use the **show logging** user EXEC command to display the setting of the IP filter feature.

Commands

show logging [event-log]

Syntax	**show**	Show running system information
Description	**logging**	Display syslog information
	event-log	Display system event logs
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show logging
	
	Syslog server #1:
	Syslog server #2:
	Syslog server #3:
	
	MOXA# show logging event-log
	Idx Boot Time or Uptime Log
	--- ---- --------------------- --------------------------------
	--------- 	
	   1 10 0d3h36m3s Configuration change activated
	   2 10 0d3h50m55s Account 'admin' auth. success
	   3 10 0d3h51m12s Configuration change activated	

Error messages	N/A	
Related commands	logging	

show logging-capacity

Use the **show logging-capacity** user EXEC command to display the system event logs.

Commands

show logging-capacity

Syntax	**show**	Show running system information
Description	**logging-capacity**	Display system event logs
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show logging-capacity Logging Capacity Threshold: 0% Logging Capacity Threshold Warning by Trap: On Logging Capacity Threshold Warning by Email: On Logging Capacity Oversize Action: Overwrite Oldest	
Error messages	N/A	
Related commands	logging	

show login authentication radius login

show authentication radius login

Syntax	**show**	Show running system information
Description	**authentication**	authentication
	radius	radius
	login	login
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show authentication radius login`
	`Radius information:`
	`    Status        : Enabled`
	`    Auth server   : 192.168.127.1, port:1812`
	`    Sharedkey     : #78227dae9c924b166aaccea67a4f55cc1c9a36@`
	`    Auth type     : MSCHAPv2`
	`    Server Timeout : 5 secs`	

Error messages	N/A	
Related commands	N/A	

show loopprotection

Use the **show loopprotection** user EXEC command to display loop protection settings information.

Commands

show loopprotection

Syntax	**show**	Show running system information
Description	**loopprotection**	Display loop protection settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	`MOXA# show loopprotection` `loop protection disable`	
Error messages	N/A	
Related commands	[no] loopprotection	

show mac-address-sticky-list

Use the **show mac-address-sticky-list** EXEC command to display MAC address sticky list information.

<u>**Commands**</u>

show mac-address-sticky-list

Syntax	**show**	Show running system information
Description	**mac-address-sticky-list**	mac address sticky list
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show mac-address-sticky-list Total: 0 / 1024	
Error messages	N/A	
Related commands	N/A	

show mac-address-table

Use the **show mac-address-table** user EXEC command to display MAC addresses in the MAC address table.

<u>**Commands**</u>

show mac-address-table [{static | learned | mcast }]

show mac-address-table [interface {ethernet module/port **| trunk** trunk-id **}]**

Syntax	**show**	Show running system information
Description	**mac-address-table**	Display MAC address forwarding table
	static	Retrieve static MAC addresses
	learned	Retrieve learned MAC addresses
	mcast	Retrieve Multicast address
	interface	Retrieve MAC address by interface
	ethernet	Ethernet Port interface
	module/port	Port ID. E.g., 1/3, 2/1,...
	trunk	Trunk interface
	trunk-id	Trunk ID. From 1 to 4
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show mac-address-table Line Swap Fast Recovery : Enabled s: static l: learn ucast: unicast lock: static port lock MAC address. Idx MAC Type VLAN Port ----- ---------------- -------- ---- ----------------------------- 1 C4:E9:84:03:E5:E8 ucast(l) 1 1/9 MOXA# show mac-address-table static s: static l: learn ucast: unicast	

```
                    lock: static port lock MAC address.
                    Idx   MAC                Type     VLAN   Port
                    ----- ---------------- -------- ---- ------------------------------


                    MOXA# show mac-address-table learned
                    s: static
                    l: learn
                    ucast: unicast
                    lock: static port lock MAC address.
                    Idx   MAC                Type     VLAN   Port
                    ----- ---------------- -------- ---- ------------------------------
                    1     C4:E9:84:03:E5:E8 ucast(l)    1 1/9


                    MOXA# show mac-address-table mcast
                    s: static
                    l: learn
                    ucast: unicast
                    lock: static port lock MAC address.
                    Idx   MAC                Type     VLAN   Port
                    ----- ---------------- -------- ---- ------------------------------
```

Error messages	N/A
Related commands	N/A

show mac-address-table aging-time

Use the **show mac-address-table aging-time** user EXEC command to display the aging time setting of the MAC address table.

Commands

show mac-address-table aging-time

Syntax Description	**show**	Show running system information
	mac-address-table	Display MAC address forwarding table
	aging-time	MAC entry aging time
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show mac-address-table aging-time MAC address aging time: 300 sec	
Error messages	N/A	
Related commands	mac-address-table aging-time	

show mac-address-table interface

Use the **show mac-address-table** user EXEC command to display MAC addresses in the MAC address table.

Commands

show mac-address-table [interface {ethernet module/port **| trunk** trunk-id **}]**

Syntax Description	**show**	Show running system information
	mac-address-table	Display MAC address forwarding table
	interface	Retrieve MAC address by interface
	ethernet	Ethernet Port interface
	module/port	Port ID. E.g., 1/3, 2/1,...
	trunk	Trunk interface
	trunk-id	Trunk ID. From 1 to 4
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show mac-address-table interface ethernet 1/3 s: static l: learn ucast: unicast lock: static port lock MAC address. Idx MAC Type VLAN Port ----- ---------------- -------- ---- ------------------------------ ---------- MOXA# show mac-address-table interface trunk 1 s: static l: learn ucast: unicast lock: static port lock MAC address. Idx MAC Type VLAN Port ----- ---------------- -------- ---- ------------------------------ ----------	
Error messages	N/A	
Related commands	N/A	

show modbus

Use the **show modbus** user EXEC command to display Modbus configuration.

<u>Commands</u>

show modbus

Syntax	**show**	Show running system information
Description	**modbus**	Display Modbus configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	`MOXA# show modbus` `Modbus enable`	
Error messages	N/A	
Related commands	modbus no modbus	

show ntp authentication-keys

Use the **show ntp authentication-keys** user EXEC command to display Authentication key for trusted time sources.

<u>Commands</u>

show ntp authentication-keys

Syntax	**show**	Show running system information
Description	**ntp**	Network time protocol
	authentication-keys	Authentication key for trusted time sources
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show ntp authentication-keys`
	
	`----------------------------`
	`Auth key MD5 String`
	`----------------------------`	

Error messages	N/A	
Related commands	show ntp trusted-keys show ntp peers show ntp authentication-status	

show ntp authentication-status

Use the **show ntp authentication-status** user EXEC command to display status of authenticate time sources.

<u>**Commands**</u>

show ntp authentication-status

Syntax	**show**	Show running system information
Description	**ntp**	Network time protocol
	authentication-status	Status of Authenticate time sources
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show ntp authentication-status`
	
	`Authentication disabled.`	

Error messages	N/A	
Related commands	show ntp authentication keys show ntp trusted keys show ntp peers	

show ntp peers

Use the **show ntp peers** user EXEC command to display Status of NTP peer.

<u>**Commands**</u>

show ntp peers

Syntax	**show**	Show running system information
Description	**ntp**	Network time protocol
	peers	Status of NTP peer
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show ntp peers`
	
	`-----------------------------------------------------------------`
	`  Peer IP Address                             Serv/Peer`
	`-----------------------------------------------------------------`
	`1.time.nist.gov                             Peer`	

Error messages	N/A	
Related commands	show ntp authentication-keys show ntp trusted-keys show ntp authentication-status	

show ntp trusted-keys

Use the **show ntp trusted-keys** user EXEC command to display Authentication key for trusted time sources.

Commands

show ntp truste- keys

Syntax	**show**	Show running system information
Description	**ntp**	Network time protocol
	trusted-keys	Key numbers for trusted time sources
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ntp trusted-keys Trusted Keys:	
Error messages	N/A	
Related commands	show ntp authentication-keys show ntp peers show ntp authentication-status	

show poe

Use the **show poe** user EXEC command to display system poe configuration information.

Commands

show poe

Syntax	**show**	Show running system information
Description	**poe**	Show PoE status
Defaults	N/A	
Command Modes	User EXEC Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show poe
	PoE system status:
	  PoE power output : Enable
	  PoE power budget : 50 Watts
	  PoE power threshold : 240 Watts
	  PoE threahold cutoff : Nothing
	  Sum of allocated power : 0 Watts
	  Sum of measured power : 0 Watts
	
	`+----------------------------------------------------------------------+`
	
	`|                Power           Consumption Voltage Current PD Failure PD Status  |`
	
	`|Port Status  Output Class       (W)        (V)     (mA)   Check      Description|`
	
	`+---- ------- ------ ------ ----------- ------- ------- ---------- -----------+`
	  G1 Enable Off N/A N/A N/A N/A Disable Not Present
	
	  G2 Enable Off N/A N/A N/A N/A Disable Not Present
	
	  G3 Enable Off N/A N/A N/A N/A Disable Not Present
	
	  G4 Enable Off N/A N/A N/A N/A Disable Not Present
	
	  G5 Enable Off N/A N/A N/A N/A Disable Not Present
	
	  G6 Enable Off N/A N/A N/A N/A Disable Not Present
	
	  G7 Enable Off N/A N/A N/A N/A Disable NIC
	
	  G8 Enable Off N/A N/A N/A N/A Disable Not Present

Error messages	N/A	
Related commands	poe system threshold	

show port monitor

Use the **show port monitor** EXEC command to display the port mirror settings.

<u>**Commands**</u>

show port monitor

Syntax	**show**	Show running system information
Description	**port**	Display Port configuration
	monitor	Display Port mirror configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show port monitor Port Being Monitored Direction Mirror Port -- ---------- --------------- 1-1 1-2 both 3-2	
Error messages	N/A	
Related commands	monitor source interface [monitorPort] monitor destination interface [mirrorPort]	

show port-security-mode

To check the port access control table, use the **show port-security-mode** command.

Commands

show port-security-mode

Syntax Description	**show**	Show running system information
	port-security-mode	Display port access control table
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show port-security-mode Port Mode ---- ------------------------------ 1-1 Static Port Lock 1-2 --- 1-3 --- 1-4 --- 1-5 --- 1-6 --- 1-7 --- 1-8 --- 1-9 --- 1-10 --- 1-11 --- 1-12 --- 1-13 --- 1-14 --- 1-15 --- 1-16 ---	
Error messages	N/A	
Related commands	N/A	

show PROFINETIO

Use the **show profinetio** user EXEC command to display PROFINET configuration information

Commands

show profinetio

Syntax Description	**show**	Show running system information
	profinetio	Display PROFINET configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show profinetio profinet io disable	
Error messages	N/A	
Related commands	profinetio no profinetio	

show ptp port

Use the **show ptp port** user EXEC command to display the Precision Time Protocol (PTP) port status information.

<u>Commands</u>

show ptp port mod_port

Syntax Description	**show**	Show running system information
	ptp	Display PTP infomation
	port	Display PTP port disable/enable state
	mod_port	Port ID or list.
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	```MOXA# show ptp port 1```
	```% Unavailable module```
	```MOXA# show ptp port 1/1```
	```Port PTP Port Enable Status```
	```---- --------------- ----------------```
	```1/1 Disable PTP_DISABLED```	

Error messages	N/A	
Related commands	show ptp settings show ptp status	

show ptp settings

Use the **show ptp settings** user EXEC command to display the Precision Time Protocol (PTP) setting information.

<u>Commands</u>

show ptp settings

Syntax Description	**show**	Show running system information
	ptp	Display PTP information
	settings	Display current PTP configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	```MOXA# show ptp settings```
	```Operation IEEE 1588/PTP```
	``` Operation : Disable```
	```Configuration IEEE 1588/PTP```
	``` Clock Mode : v1 BC```
	``` LogSyncInterval : 0```
	``` LogMinDelayReqInterval : 0```
	``` SubDomain Name : _DFLT```
	``` Preferred Master : FALSE```	

Error messages	N/A	
Related commands	ptp enable no ptp ptp mode {v1-bc | v2-e2e-bc | v2-p2p-bc | v2-e2e-2step-tc | v2-p2p-2step-tc}	

show ptp status

Use the **show ptp status** user EXEC command to display the Precision Time Protocol (PTP) status information.

Commands

show ptp status

Syntax Description	show	Show running system information
	ptp	Display PTP information
	status	Display current PTP port state
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show ptp settings`
	`Operation IEEE 1588/PTP`
	`  Operation            : Disable`
	`Configuration IEEE 1588/PTP`
	`  Clock Mode           : v1 BC`
	`  LogSyncInterval      : 0`
	`  LogMinDelayReqInterval : 0`
	`  SubDomain Name       : _DFLT`
	`  Preferred Master     : FALSE`
	`MOXA# show ptp status`
	`  Offset To Master(nsec)        : 0`
	`  Grandmaster UUID              : 00:90:e8:4f:00:6f`
	`  Parent UUID                   : 00:90:e8:4f:00:6f`
	`  Clock Stratum                 : 0`
	`  Clock Identifier              : DFLT`	

Error messages	N/A	
Related commands	show ptp settings show ptp port mod port	

show qos

Use the **show qos** user EXEC command to display Quality of Service (QoS) settings information.

Commands

show qos [priority-to-queue | dscp-to-priority]

Syntax Description	show	Show running system information
	qos	Display QoS configuration
	priority-to-queue	Priority to traffic queue mappings
	dscp-to-priority	DSCP to Priority mappings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show qos`
	
	`    Queuing Mechanism   : Weighted Fair (1:2:4:8)`
	`    Tos Inspection`
	`        Module 1       : Disabled`
	`        Module 3       : Disabled`	

```
    Int# CoS Inspection CoS
    ---- -------------- ---
    1/3         Enabled   3
    1/4         Enabled   3
    1/5         Enabled   3
    1/6         Enabled   3
    3/1         Enabled   3
    3/2         Enabled   3
    3/3         Enabled   3
    3/4         Enabled   3
    3/5         Enabled   3
    3/6         Enabled   3
    3/7         Enabled   3
    3/8         Enabled   3
    Trk1        Enabled   3


MOXA# show qos priority-to-queue

CoSPriority Queue #
----------- -------
          0       Q0
          1       Q0
          2       Q1
          3       Q1
          4       Q2
          5       Q2
          6       Q3
          7       Q3


MOXA# show qos dscp-to-priority

 DSCP Priority   DSCP Priority   DSCP Priority   DSCP Priority
 ---- --------   ---- --------   ---- --------   ---- --------
    0        0      1        0      2        0      3        0
    4        0      5        0      6        0      7        0
    8        1      9        1     10        1     11        1
   12        1     13        1     14        1     15        1
   16        2     17        2     18        2     19        2
   20        2     21        2     22        2     23        2
   24        3     25        3     26        3     27        3
   28        3     29        3     30        3     31        3
   32        4     33        4     34        4     35        4
   36        4     37        4     38        4     39        4
   40        5     41        5     42        5     43        5
   44        5     45        5     46        5     47        5
   48        6     49        6     50        6     51        6
   52        6     53        6     54        6     55        6
   56        7     57        7     58        7     59        7
   60        7     61        7     62        7     63        7
```

Error messages	N/A
Related commands	qos mode {weighted fair | strict} no qos mode qos inspect {cos | dscp} no qos inspect qos mapping qos default-cos qos mapping {cos-to-queue cos_queue | dscp-to-queue dscp_queue | priority-to-queue priority_queue | dscp-to-priority dscp_priority } no qos mapping { cos-to-queue | dscp-to-queue | priority-to-queue | dscp-to-priority}

show redundancy mode

Use the **show redundancy mode** user EXEC command to display current redundancy protocol mode.

Commands

show redundancy mode

Syntax Description	**show**	Show running system information
	redundancy	Display redundancy protocol status
	mode	Current redundancy protocol mode
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show redundancy mode
	  Current redundancy mode : RSTP (IEEE 802.1D 2004)
	  Active Protocol : None	

Error messages	N/A	
Related commands	N/A	

show redundancy mrp ring

Commands

show redundancy mrp ring

Syntax Description	**redundancy**	Display redundant settings
	mrp ring	Display MRP status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MRP Ring : Enabled Mode : Client Ring State Machine : Awaiting Connection Recovery time : 200 ms React on link Change : enabled VLAN ID : 1 Domain ID : FFFFFFFF-FFFF-FFFF-FFFF-FFFFFFFFFFFF --- Interface Port Number Port Status -------------- ---------- -------------- Primary Port 1 Link down Secondary Port 2 Link down MRP Interconnection 1 : Disabled	
Error messages	N/A	
Related commands	N/A	

show redundancy mst cist

Use the **show redundancy mst cist** user EXEC command to display cist status of Multiple Spanning Tree (MSTP).

Commands

show redundancy mst cist

Syntax Description	**show**	Show running system information
	redundancy	Display redundancy protocol status
	mst	Display multiple spanning tree settings
	cist	Display MSTP cist status
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show redundancy mst cist MSTP cist root status: CIST Root: --- MSTP cist bridge status: Birdge Priority: 32768 Int# Enable Prio Cost Oper Cost Edge State Role ---- -------- -------- -------- ------------- -------- ---------- -- --------	
Error messages	N/A	
Related commands	spanning-tree mst	

show redundancy mst configuration

Use the **show redundancy mst configuration** user EXEC command to display settings of Multiple Spanning Tree (MSTP).

Commands

show redundancy mst configuration

Syntax Description	**show**	Show running system information
	redundancy	Display redundancy protocol status
	mst	Display multiple spanning tree settings
	configuration	Display multiple spanning tree global settings
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show redundancy mst configuration
	MSTP global setting:
	      Forwarding Delay: 15
	      Hello Time: 2
	      Max Hops: 20
	      Max Age: 20
	      Revision Level: 0
	      Region Name: MSTP	

Error messages	N/A	
Related commands	spanning-tree mst	

show redundancy mst instance

Use the **show redundancy mst instance** user EXEC command to display Multiple Spanning Tree (MSTP) instance state information.

Commands

show redundancy mst instance instance-id

Syntax Description	**show**	Show running system information
	redundancy	Display redundancy protocol status
	mst	Display multiple spanning tree settings
	instance	Display MSTP msti status
	instance-id	MSTP instance ID
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show redundancy mst instance 1
	MSTP msti root status:
	
	MSTI Root: ---
	MSTP msti 1 bridge status:
	        Vlan Mapping:
	        Birdge Priority: 32768
	
	Int# Enable Prio Cost Oper Cost Edge State Role
	---- -------- -------- -------- ------------- -------- ---------- --
	-------- 		

Error messages	N/A	
Related commands	spanning-tree mst instance	

show Redundancy spanning-tree

Use the **show redundancy spanning-tree** user EXEC command to display spanning-tree state information.

Commands

show Redundancy spanning-tree

Syntax Description	**show**	redundancy spanning-tree
	redundancy	Display redundancy protocol status
	spanning-tree	spanning-tree
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show redundancy spanning-tree

        Spanning tree status : Enabled
            Root ID
            Priority   : 32768
            Address   : 00:90:E8:49:60:83
            Hello Time 2 sec   Forward Delay 15 sec   Max Age 20 sec

            Bridge ID
            Priority   : 32768
            Address   : 00:90:E8:49:60:83
            Hello Time 2 sec   Forward Delay 15 sec   Max Age 20 sec

Int# Link Edge Prio OperCost RootCost Role   St Type Rcv BID
Gu Fl
 ---- ---- ----   ---- --------   --------   ------- -- --
-- ---------------- ---- ----
 1/1 On Yes 128   20000   0   Desg F P2P   --
On On
 1/2 On Yes 128   20000   0   Desg F P2P   --
On Off
 1/3 Down --   --   --   --   -- --   -- --
--   --   --
 1/4 --   --   --   --   --   -- --   -- --
--   --   --</pre> | |
| **Error messages** | N/A | |
| **Related commands** | N/A | |

show redundancy turbo-chain

Use the **show redundancy turbo-chain** user EXEC command to display turbo-chain state information

<u>Commands</u>

show redundancy turbo-chain

Syntax Description	**show**	Show running system information
	redundancy	Display redundant settings
	turbo-chain	Display turbo chain status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	<pre>MOXA# show redundancy turbo-chain
	        Role :--
	
	--------------------------------------- 	
	Port Role Port Number Port Status
	--------------- ----------- -------------
	1st Member Port G15 --
	2nd Member Port G16 --</pre>	

Error messages	N/A	
Related commands	N/A	

show redundancy turbo-ring-v1

Use the **show redundancy turbo-ring-v1** user EXEC command to display Turbo Ring v1 configure and state information.

Commands

show redundancy turbo-ring-v1

Syntax Description	**show**	Show running system information
	redundancy	Display redundancy protocol status
	turbo-ring-v1	Display turbo ring v1 status
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# show redundancy turbo-ring-v1`
	
	`Turbo Ring V1 settings:`
	`        Set as master:  Disabled`
	`        1st port:       1/15`
	`        2nd port:       1/16`
	`        Ring Coupling:  Disabled`
	`        Coupling Port:  1/13`
	`        Coupling Control Port:  1/14`
	
	`Turbo Ring V1 status:`
	`        Master/Slave:   ---`
	`        Redundant Ports Status:`
	`                1st port:       ---`
	`                2nd port:       ---`
	`        Ring Coupling Ports Status:     ---`
	`        Coupling Port:  ---`
	`        Coupling Control Port:  ---`	

Error messages	N/A	
Related commands	turbo-ring-v1	

show redundancy turbo-ring-v2

Use the **show spanning-tree turbo-ring-v2** user EXEC command to display Turbo Ring v2 configuration and state information.

Commands

show redundancy turbo-ring-v2

Syntax Description	**show**	Show running system information
	redundancy	Display redundancy protocol status
	turbo-ring-v2	Display turbo ring v2 status
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show redundancy turbo-ring-v2
	
	Turbo Ring V2 settings:
	    Ring 1: Enabled
	        Set as master: Disabled
	        1st port: G15
	        2nd port: G16
	    Ring 2: Disabled
	        Set as master: Disabled
	        1st port: G13
	        2nd port: G14
	    Ring Coupling: Disabled
	        Primary Port:G13
	        Backup Port:G14
	
	Turbo Ring V2 status:
	    Ring 1:
	        Status:---
	        Master/Slave:---
	        1st Ring Port Status:---
	        2nd Ring Port Status:---
	    Ring 2:
	        Status:---
	        Master/Slave:---
	        1st Ring Port Status:---
	        2nd Ring Port Status:---
	    Coupling:
	        Mode:---
	        Coupling Port Status: ---	

Error messages	N/A	
Related commands	turbo-ring-v2	

show relay-warning

Use the **show relay-warning** user EXEC command to display the Relay Warning settings.

Commands

show relay-warning config

show relay-warning status

Syntax Description	show	Show running system information
	relay-warning	Display relay warning configuration
	config	Relay warning configuration
	status	Current relay warning list
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
| **Examples** | MOXA# show relay-warning config<br>System Events Setting<br>  Override Relay Warning Settings    : Disable<br>  Power Input 1 failure(On->Off)    : Disable<br>  Power Input 2 failure(On->Off)    : Disable<br>  Turbo Ring Break                 : Disable<br>Port Events Setting<br><br>```
                                Traffic         RX
Traffic
Port         Link            Overload        Threshold(%)
Duration(s)
------------ --------------- --------------- --------------- ----
--------
1-1          Ignore          Disable         1               1
1-2          Ignore          Disable         1               1
1-3          Ignore          Disable         1               1
1-4          Ignore          Disable         1               1
1-5          Ignore          Disable         1               1
1-6          Ignore          Disable         1               1
1-7          Ignore          Disable         1               1
1-8          Ignore          Disable         1               1
3-1          Ignore          Disable         1               1
3-2          Ignore          Disable         1               1
3-3          Ignore          Disable         1               1
3-4          Ignore          Disable         1               1
3-5          Ignore          Disable         1               1
3-6          Ignore          Disable         1               1
3-7          Ignore          Disable         1               1
3-8          Ignore          Disable         1               1

MOXA# show relay-warning status
Index    Event                           Relay
-------- ------------------------------- ----------
``` |
| **Error messages** | N/A | |
| **Related commands** | N/A | |

show running-config

Use **show running-config** to display the current running configuration of the switch.

Commands

show running-config

Syntax	**show**	Show running system information
Description	**running-config**	Current operating configuration
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show running-config Building configuration ... ! login mode cli auto-import no auto-backup hostname snmp-server description EDS-G516E username admin password 810448e13d53513dddd17d6c045025ab911840745a37665201104373 d0d04180 privilege 1 username user password 810448e13d53513dddd17d6c045025ab911840745a37665201104373d 0d04180 privilege 2 ! authentication radius login auth-type pap ! ip auto-logout 5 ! interface mgmt ip address static 192.168.127.250 255.255.255.0 ! snmp-server version v1-v2c snmp-server community public ro snmp-server community private rw snmp-server trap-mode trap ! lldp enable lldp timer 5 ! ip dhcp-relay option82 remote-id-type ip ! interface ethernet 1/1 no shutdown --More--	
Error messages	N/A	
Related commands	show startup-config	

show session monitor

<u>**Commands**</u>

show session_monitor

Syntax	**show**	Show running system information
Description	**session_monitor**	Session information
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	Moxa# show session_monitor sessionID username loginType loginTime loginIp --------------- ------------- -------------- -------------- ----------------- 708001059 admin web --/--/-- --:--:-- 192.168.127.131 12376320 admin console --/--/-- --:--:-- console	
Error messages	N/A	
Related commands	N/A	

show snmp

To check the status of Simple Network Management Protocol (SNMP) communications, use the **show snmp** command.

<u>**Commands**</u>

show snmp

Syntax Description	**show**	Show running system information
	snmp	Display SNMP configuration
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	```
	MOXA# show snmp
	SNMP Read/Write Settings
	  SNMP Agent : Enabled
	  SNMP Versions : v1-v2c
	  V1,V2c Read Community : public
	  V1,V2c Write/Read Community: private
	Trap Settings
	  1st Trap Server IP/Name :
	  1st Trap Community : public
	  2nd Trap Server IP/Name :
	  2nd Trap Community : public
	Trap Mode
	  Mode : Trap V1
	Private MIB information
	  Switch Object ID : enterprise.8691.7.71
	``	

Error messages	N/A	
Related commands	snmp-server community snmp-server host snmp-server trap-mode snmp-server user snmp-server version	

show startup-config

Use **show startup-config** to display the system startup configuration of the switch.

<u>**Commands**</u>

show startup-config

Syntax	**show**	Show running system information
Description	**startup-config**	Contents of startup configuration
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show startup-config Building configuration ... ! login mode cli auto-import no auto-backup hostname snmp-server description EDS-G516E username admin password 810448e13d53513dddd17d6c045025ab911840745a37665201104373 d0d04180 privilege 1 username user password 810448e13d53513dddd17d6c045025ab911840745a37665201104373d 0d04180 privilege 2 ! authentication radius login auth-type pap ! ip auto-logout 5 ! interface mgmt ip address static 192.168.127.250 255.255.255.0 ! snmp-server version v1-v2c snmp-server community public ro snmp-server community private rw snmp-server trap-mode trap ! lldp enable lldp timer 5 ! ip dhcp-relay option82 remote-id-type ip ! interface ethernet 1/1 no shutdown --More--	
Error messages	N/A	
Related commands	show running-config	

show static-port-lock

Use the **show static-port-lock** user EXEC command to display static port lock state information.

<u>**Commands**</u>

show static-port-lock [mod_port]

Syntax	**show**	Show running system information
Description	**static-port-lock**	Display static port lock table
	mod_port	Port ID or list.
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show static-port-lock Port Index Mac Address VID Status ---- ------ ---------------------- -------------- --------------	
Error messages	N/A	
Related commands	N/A	

show storm-control

Use the **show storm-control** user EXEC command to display the setting of storm protection.

<u>**Commands**</u>

show storm-control

Syntax	**show**	Show running system information
Description	**stom-control**	Display storm protection settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show storm-control Storm Supress : Broadcast(64 Kfps)	
Error messages	N/A	
Related commands	storm-control	

show system

Use the **show system** command to display system identification settings.

<u>**Commands**</u>

show system

Syntax	**show**	Show running system information
Description	**system**	System hardware and software status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show system
	System Information
	  System Name
	  System Location : Switch Location
	  System Description : EDS-G516E
	  Contact Information :
	  MAC Address : AA:BB:CC:DD:EE:FF
	  System Uptime : 0d3h40m30s
	  Serial No. : 12345678909
	  Memory Size : 134217728 Bytes
	  Memory Utilization : 20.80 %	

Error messages	N/A	
Related commands	snmp-server description snmp-server contact snmp-server location	

show tracking

To display the detailed status and configuration of tracking functions, use the **show tracking** command in EXEC mode.

<u>**Commands**</u>

show tracking { all | interface | ping | logic }

Syntax Description	show	Show running system information
	tracking	Display tracking information
	all	Display the status and configuration of all tracking entries
	interface	Display the status and configuration of interface tracking entries
	ping	Display the status and configuration of ping tracking entries
	logic	Display the status and configuration of logic tracking entries
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	ICS-G7828A# show tracking all Tracking Function: Enable TID Type Target Enable Status No. of Time Since Change Last Change ---- --------- ----------- ------ ------ ------ ----------- 1 Interface Port 1-1 Enable Down 1 0d14h8m49s 2 Interface VLAN 2 Enable Down 1 0d14h8m49s 3 Ping 192.168.2.1 Enable Down 1 0d14h8m49s 4 Logic [OR] 1, 2, 3 Enable Down 1 0d14h8m49s	
Error messages	N/A	
Related commands	tracking module tracking mode	

show users

Use the **show users** user EXEC command to display the username/password configuration.

<u>**Commands**</u>

show users

Syntax	**show**	Show running system information
Description	**users**	Display login user settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show users
	
	Login account information:
	    Name Authority Active
	  ------------------ ----------- ----------
	    admin admin Active
	    user user Active	

Error messages	N/A	
Related commands	username	

show version

Use the **show version** user EXEC command to display system version information.

<u>**Commands**</u>

show version

Syntax	**show**	Show running system information
Description	**version**	System version information
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# show version Model Name : EDS-G516E Firmware Version : V5.1 build 16072215	
Error messages	N/A	
Related commands	N/A	

show vlan

Use the **show vlan** user EXEC command to display VLAN status information.

Commands

show vlan

Syntax	**show**	Show running system information
Description	**vlan**	Display VLAN status
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show vlan
	vlan mode: 802.1Q vlan
	mgmt vlan: 1
	
	VLAN 1:
	  Name:
	  Access Ports: 1/1, 1/2, 1/3, 1/4, 1/5, 1/6, 1/7, 1/8,
	                 1/9, 1/10, 1/11, 1/12, 1/13, 1/14, 1/15, 1/16,
	
	   Trunk Ports:
	  Hybrid Ports:	

Error messages	N/A	
Related commands	N/A	

show vlan config

Use the **show vlan config** user EXEC command to display VLAN configuration information.

<u>Commands</u>

show vlan config

Syntax Description	**show**	Show running system information
	vlan	Display VLAN status
	config	Display VLAN configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show vlan config
	vlan mode: 802.1Q vlan
	VLAN Ports(Type)
	----- -------------------------------
	1 1/1(A), 1/2(A), 1/3(A), 1/4(A), 1/5(A), 1/6(A), 1/7(A),
	1/8(A),
	         1/9(A), 1/10(A), 1/11(A), 1/12(A), 1/13(A), 1/14(A),
	1/15(A), 1/16(A),
	
	===
	Port Trunk Native vlan
	
	Port Fixed VLAN (Tagged)
	
	Port Fixed VLAN (Untagged)
	
	Port Forbidden VLAN
	
	Current VLAN interface vid:
	      1,	

Error messages	N/A	
Related commands	interface vlan	

shutdown

To disable an interface, use the **shutdown** interface configuration command. To restart a disabled interface, use the **no** form of this command.

Commands

shutdown

no shutdown

Syntax Description	**shutdown**	Shutdown the selected interface
Defaults	None	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# shutdown`
	`MOXA(config-if)# no shutdown`	

Error messages	Cannot configure on trunk member port 1/1!	
Related commands	show interfaces ethernet show interfaces trunk	

snmp-server authority

To configure a user and its authentication type and password to a Simple Network Management Protocol (SNMP), use the **snmp-server authority** global configuration command.

Commands

snmp-server authority authority_type **auth** auth-type [data_encryption_key]

Syntax Description	**snmp-server**	Configure SNMP server
	authority	SNMP authority setting
	authority_type	admin/user
	auth	SNMP authentication
	auth-type	no-auth | md5 | sha
	data_encryption_key	Encryption password (maximum 30 characters)
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	authority_type is only allowed to be set as "admin" or "user" auth-type is only allowed to be set as "no-auth", "md5" or "sha"	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server authority admin auth md5`
	`MOXA(config)# snmp-server authority admin auth md5 12345678`	

Error messages	SNMP user must be (admin | user)!!	
	SNMP authtype must be (no-auth | md5 | sha)!!	
	Admin Data Encryption must between 8 and 30 characters!!!	
Related commands	show snmp	

snmp-server community

To set up the community access string to permit access to the Simple Network Management Protocol (SNMP), use the **snmp-server community** global configuration command.

<u>**Commands**</u>

snmp-server community community mode

Syntax Description	**snmp-server**	Configure SNMP server
	community	SNMP community setting
	community	SNMP community string
	mode	ro | rw
Defaults	Public community is ro Private community is rw	
Command Modes	Global configuration	
Usage Guidelines	Specifies read-only access. Authorized management stations are only able to retrieve MIB objects. Specifies read-write access. Authorized management stations are able to both retrieve and modify MIB objects	
Examples	`MOXA# configure terminal` `MOXA(config)# snmp-server community 123 ro` `MOXA(config)# snmp-server community 123 rw`	
Error messages	SNMP community mode must be (ro|rw)!! The longest snmp community string length is 30!!	
Related commands	show snmp	

snmp-server contact

To set the system contact string, use the **snmp-server contact** global configuration command. To remove the contact string, use the **no** form of this command.

<u>**Commands**</u>

snmp-server contact [token1] [token2] [token3] [token4] [token5]

no snmp-server contact

Syntax Description	**snmp-server**	Configure SNMP server
	contact	Switch maintainer contact information
	token1~5	Combine token1~5 to Switch maintainer contact information.
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	"text" parameter can be set as string separated by space. Maximum string tokens are 5. Maximum length of switch maintainer contact info is 30.	
Examples	`MOXA# configure terminal` `MOXA(config)# snmp-server contact 1` `MOXA(config)# snmp-server contact 1 2` `MOXA(config)# snmp-server contact 1 2 3` `MOXA(config)# snmp-server contact 1 2 3 4` `MOXA(config)# snmp-server contact 1 2 3 4 5`	
Error messages	Length of maintainer info is too long Parse error	
Related commands	show snmp	

snmp-server default

To reset the snmp configuration to default, use the **snmp-server default** global configuration command.

<u>**Commands**</u>

snmp-server default

Syntax	**snmp-server**	Configure SNMP server
Description	**default**	Set snmp community, snmp inform and trap version to default

Defaults	snmp community:
	    V1,V2c Read Community: public
	    V1,V2c Write/Read Community: private
	snmp inform:
	    Retries: 3
	    Timeout: 10
	trap version: Trap V1	

Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# snmp-server default`	
Error messages	N/A	
Related commands	show snmp	

snmp-server description

To set the system description string, use the **snmp-server description** global configuration command. To remove the description string, use the **no** form of this command.

<u>**Commands**</u>

snmp-server description [token1] [token2] [token3] [token4] [token5]

no snmp-server description

Syntax	**snmp-server**	Configure SNMP server
Description	**description**	Switch description
	token1~5	Combine token1~5 to Switch description string.
Defaults	The default description is the model name.	
Command Modes	Global configuration	
Usage Guidelines	"text" parameter can be set as string separated by space. Maximum string tokens are 5. Maximum length of switch maintainer contact info is 40.	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server description 1`
	`MOXA(config)# snmp-server description 1 2`
	`MOXA(config)# snmp-server description 1 2 3`
	`MOXA(config)# snmp-server description 1 2 3 4`
	`MOXA(config)# snmp-server description 1 2 3 4 5`	

Error messages	Length of system description is too long Parse error	
Related commands	show snmp	

snmp-server host

To specify the recipient of a Simple Network Management Protocol (SNMP) notification operation, use the **snmp-server host** global configuration command. To remove the specified host, use the **no** form of this command

<u>**Commands**</u>

snmp-server host host-addr community-string

no snmp-server host [host-addr]

Syntax Description	**snmp-server**	Configure SNMP server
	host	SNMP host setting
	host-addr	SNMP host address
	community-string	SNMP Community string
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server host 192.168.127.20 123`
	`MOXA(config)# no snmp-server host`	

Error messages	Trap server are full, please remove at least one first!!!	
Related commands	show snmp	

snmp-server location

To set the system location string, use the **snmp-server location** global configuration command. To remove the location string, use the **no** form of this command.

<u>**Commands**</u>

snmp-server location [token1] [token2] [token3] [token4] [token5]

no snmp-server location

Syntax Description	**snmp-server**	Configure SNMP server
	location	Switch location
	token1~5	Combine token1~5 to switch location string.
Defaults	The default text is Switch Location	
Command Modes	Global configuration	
Usage Guidelines	"text" parameter can be set as string separated by space. Maximum string tokens are 5. Maximum length of switch location is 80.	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server location 1`
	`MOXA(config)# snmp-server location 1 2`
	`MOXA(config)# snmp-server location 1 2 3`
	`MOXA(config)# snmp-server location 1 2 3 4`
	`MOXA(config)# snmp-server location 1 2 3 4 5`	

Error messages	Length of location is too long Parse error	
Related commands	show snmp	

snmp-server trap-mode inform

Use the **snmp-server trap-mode** global configuration command to configure SNMP Trap/Inform mode setting, retry times, and timeout timer.

Commands

snmp-server trap-mode {inform-v2c | inform-v3} [retry times **timeout** seconds**]**

Syntax Description	snmp-server	Configure SNMP server
	trap-mode	SNMP Trap/Inform mode setting
	inform-v2c	SNMP Inform v2c
	inform-v3	SNMP Inform v3
	retry	Inform retries times
	times	1 to 99
	timeout	Timeout timer
	seconds	1 to 300 seconds
Defaults	Times: 3, seconds: 10	
Command Modes	Global configuration	
Usage Guidelines	Data range: times : 1~99 seconds : 1~300	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server trap-mode inform-v2c`
	`MOXA(config)# snmp-server trap-mode inform-v2c retry 5 timeout 300`
	`MOXA(config)# snmp-server trap-mode inform-v3`
	`MOXA(config)# snmp-server trap-mode inform-v3 retry 5 timeout 300`	

Error messages	To enable INFORM v3, please configure trap user name first!! Invalid inform retries value !!! Invalid inform timeout value !!!	
Related commands	show snmp	

snmp-server trap-mode trap

To enable all Simple Network Management Protocol (SNMP) notifications (traps or informs) available on your system, use the **snmp-server trap-mode** global configuration command. To disable all available SNMP notifications, use the **no** form of this command.

<u>**Commands**</u>

snmp-server trap-mode trap

snmp-server trap-mode trap-v2c

snmp server trap mode trap-v3

no snmp-server trap-mode

Syntax Description	snmp-server	Configure SNMP server
	trap-mode	SNMP Trap/Inform mode setting
	trap	SNMP Trap V1
	trap-v2c	SNMP Trap V2c
	trap-v3	SNMP Trap V3
Defaults	The default mode is "trap"	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server trap-mode trap`
	`MOXA(config)# snmp-server trap-mode trap-v2c`
	`MOXA(config)# snmp-server trap-mode trap-v3`	

Error messages	To enable TRAP v3, please configure trap user name first!!	
Related commands	show snmp	

snmp-server trap-mode user

Use the **snmp-server trap-mode user** global configuration command to configure SNMPv3 Trap/Inform user setting. To disable available trap-mode user setting, use the **no** form of this command

<u>**Commands**</u>

snmp-server trap-mode user username

snmp-server trap-mode user username **[auth no-auth]**

snmp-server trap-mode user username **[auth md5** auth-pwd **[**data-encryption-key**]]**

snmp-server trap-mode user username **[auth sha** auth-pwd **[**data-encryption-key**]]**

no snmp-server trap-mode user

Syntax Description	**snmp-server**	Configure SNMP server
	trap-mode	SNMP Trap/Inform mode setting
	user	SNMPv3 Trap/Inform USM setting
	username	Set Trap/Inform user name
	auth	Set Trap/Inform authentication
	no-auth	No authentication algorithm use
	md5	Specifies the MD5 authentication algorithm
	sha	Specifies the SHA authentication algorithm
	auth-pwd	Authentication password (maximum 16 characters)
	data-encryption-key	Encryption password (maximum 30 characters)
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server trap-mode user 123`
	`MOXA(config)# snmp-server trap-mode user 123 auth no-auth`
	`MOXA(config)# snmp-server trap-mode user 123 auth md5 12345678`
	`MOXA(config)# snmp-server trap-mode user 123 auth md5 12345678`
	`abcdefghi`
	`MOXA(config)# snmp-server trap-mode user 123 auth sha 12345678`
	`MOXA(config)# snmp-server trap-mode user 123 auth sha 12345678`
	`abcdefghi`	

Error messages	Auth. password must between 8 and 16 characters!! Data Encryption Key must between 8 and 30 characters!!	
Related commands	show snmp	

snmp-server version

To set up the snmp version, use the **snmp-server version** global configuration command.

Commands

snmp-server version [v1-v2c-v3 | v1-v2c | v3]

Syntax	**snmp-server**	Configure SNMP server
Description	**version**	SNMP version setting
	v1-v2c-v3	Version 1, 2C and 3 support
	v1-v2c	Version 1 and 2C support
	v3	Only version 3 support
Defaults	Default version is v1-v2c	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# snmp-server version v1-v2c-v3`
	`MOXA(config)# snmp-server version v1-v2c`
	`MOXA(config)# snmp-server version v3`	

Error messages	N/A	
Related commands	show snmp	

spanning-tree

Use the **spanning-tree** interface configuration command on the switch to enable the spanning-tree feature of the specified interfaces. Use the **no** form of this command to disable it.

Commands

spanning-tree

no spanning-tree

Syntax Description	**spanning-tree**	Enable spanning tree
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	`MOXA(config-if)# spanning-tree`	
Error messages	Cannot configure on trunk member port 1/1!	
Related commands	redundancy mode show redundancy spanning-tree	

spanning-tree bpdu-filter

To Configure redundancy port BPDU Filter.

Commands

spanning-tree bpdu-filter

no spanning-tree bpdu-filter

Syntax	**spanning-tree**	Enable spanning tree
Description	**bpdu-filter**	Enable BPDU filter function
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	`MOXA(config-if)# spanning-tree bpdu-filter`	
Error messages	Port must not be trunk port!	
Related commands	N/A	

spanning-tree bpdu-guard

To Configure redundancy port BPDU Guard.

Commands

spanning-tree bpdu-guard

no spanning-tree bpdu-guard

Syntax	**spanning-tree**	Enable spanning tree
Description	**bpdu-guard**	Enable BPDU guard function
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	`MOXA(config-if)# spanning-tree bpdu-guard`	
Error messages	Port must not be trunk port!	
Related commands	N/A	

spanning-tree cost

Use the **spanning-tree cost** interface configuration command on the switch to set the path cost for spanning-tree algorithms calculations. If a loop occurs, spanning tree considers the path cost when selecting an interface to put in the forwarding state. Use the **no** form of this command to return to the default setting.

Commands

spanning-tree cost cost

no spanning-tree cost

Syntax Description	spanning-tree	Enable spanning tree
	cost	Configure port path cost
	cost	Range from 1 to 200000000
Defaults	cost = 200000	
Command Modes	Interface configuration	
Usage Guidelines	1 <= Cost <= 200000000	
Examples	MOXA(config-if)# spanning-tree cost <UINT:cost> - Range from 1 to 200000000	
Error messages	Cost value must be in the range 1 to 200000000 Cannot configure on trunk member port 1/1!	
Related commands	show redundancy spanning-tree	

spanning-tree edge-port

Use the **spanning-tree edge-port** interface configuration command on the switch to enable the Edge Port feature on an interface in all its associated VLANs. When the Edge Port feature is enabled, the interface changes directly from a blocking state to a forwarding state without making the intermediate spanning-tree state changes. Use the **no** form of this command to disable the feature.

Commands

spanning-tree edge-port { auto | force }

no spanning-tree edge-port

Syntax Description	spanning-tree	Enable spanning tree
	edge-port	Configure as edge port
	auto	Auto determine as edge port
	force	Force the port as edge port
Defaults	port-fast = auto	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	MOXA(config-if)# spanning-tree edge-port
	    auto - Auto determine as edge port
	    force - Force the port as edge port	

Error messages	Cannot configure on trunk member port 1/1!	
Related commands	show redundancy spanning-tree	

spanning-tree forward-delay

Use the **spanning-tree forward-delay** redundancy configuration command on the switch to set the forward-delay time for the spanning-tree. The forwarding time specifies how long each of the listening and learning states last before the interface begins forwarding. Use the **no** form of this command to return to the default setting.

<u>Commands</u>

spanning-tree forward-delay seconds

no spanning-tree forward-delay

Syntax Description	**spanning-tree**	Configure spanning tree
	forward-delay	Configure spanning tree BPDU forward delay
	seconds	forward delay time value
Defaults	Forward delay = 15 sec.	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) seconds is range from 6 to 40	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree forward-delay 30`	

Error messages	The BPDU forward delay time must be in the range from 4 to 30 sec. The formula must be obeyed: 2 x (Hello Time + 1 sec) <= Max age <= 2 x (Forward Delay - 1 sec)	
Related commands	spanning-tree hello-time spanning-tree max-age show redundancy spanning-tree	

spanning-tree hello-time

Use the **spanning-tree hello-time** redundancy configuration command on the switch to set the interval between hello bridge protocol data units (BPDUs) sent by root switch configuration messages. Use the no form of this command to return to the default setting.

<u>Commands</u>

spanning-tree hello-time seconds

no spanning-tree hello-time

Syntax Description	**spanning-tree**	Configure spanning tree
	hello-time	Configure spanning tree BPDU hello time
	seconds	hello time value
Defaults	Hello time = 2 sec.	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) seconds is range from 1 to 2	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree hello-time 2`	

Error messages	BPDU hello time must be in the range from 1 to 2 sec. The formula must be obeyed: 2 x (Hello Time + 1 sec) <= Max age <= 2 x (Forward Delay - 1 sec)	
Related commands	spanning-tree forward-delay spanning-tree max-age show redundancy spanning-tree	

spanning-tree max-age

Use the **spanning-tree max-age** redundancy configuration command on the switch to set the interval between messages that the spanning tree receives from the root switch. If a switch does not receive a bridge protocol data unit (BPDU) message from the root switch within this interval, it recomputes the spanning-tree topology. Use the **no** form of this command to return to the default setting.

Commands

spanning-tree max-age seconds

no spanning-tree max-age

Syntax Description	**spanning-tree**	Configure spanning tree
	max-age	Configure spanning tree max age
	seconds	max age time value
Defaults	Forward delay = 20 sec.	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) seconds is range from 6 to 40	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# spanning-tree max-age 40	
Error messages	The BPDU forward delay time must be in the range from 4 to 30 sec. The formula must be obeyed: 2 x (Hello Time + 1 sec) <= Max age <= 2 x (Forward Delay - 1 sec)	
Related commands	spanning-tree forward-delay spanning-tree max-age show redundancy spanning-tree	

spanning-tree mst cist cost

Use the **spanning-tree mst cist cost** interface configuration command on the switch to set the port cost of the Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting.

Commands

spanning-tree mst cist cost cost

no spanning-tree mst cist cost

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	cist	Configure mstp cist port
	cost	Configure mstp cist port path cost
	cost	Configure mstp cist port path cost
Defaults	cost=0	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# spanning-tree mst cist cost 2000000 <UINT:time> - Set mstp forwarding delay	
Error messages	MSTP port path cost must be in the range from 0 to 200000000 MSTP port 2/1 path cost set error	
Related commands	show redundancy mst configuration	

spanning-tree mst cist port-priority

Use the **spanning-tree mst cist port-priority** interface configuration command on the switch to set the port priority for the Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting.

<u>**Commands**</u>

spanning-tree mst cist port-priority priority

no spanning-tree mst cist port-priority

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	cist	Configure mstp cist port
	port-priority	Configure mstp cist port priority
	priority	Configure mstp cist port priority
Defaults	priority =128	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	`MOXA(config-if)# spanning-tree mst cist port-priority 128` `  <UINT:priority>        - Configure mstp cist port priority`	
Error messages	MSTP port priority must be in the range from 0 to 240 MSTP port %s priority set error MSTP port priority should be 16 times the value	
Related commands	show redundancy mst configuration	

spanning-tree mst cist priority

Use the **spanning-tree mst cist priority** redundancy configuration command on the switch to set the switch priority for the Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting.

<u>**Commands**</u>

spanning-tree mst cist priority priority

no spanning-tree mst cist priority

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	cist	Configure mstp cist
	priority	Set mstp cist bridge priority
	priority	Set mstp cist bridge priority
Defaults	priority = 32768	
Command Modes	Redundancy configuration	
Usage Guidelines	priority is range from 0 to 61140	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree mst cist priority 32768`	

Error messages	MSTP bridge priority must be in the range from 0 to 61140 MSTP cist bridge priority set error CIST bridge priority should be 4096 times the value	
Related commands	show redundancy mst cist	

spanning-tree mst edge-port

Use the **spanning-tree mst edge-port** interface configuration command on the switch to enable the Edge port feature for the Multiple Spanning Tree (MSTP). Use the **no** form of this command to disable the setting.

<u>**Commands**</u>

spanning-tree mst edge-port

no spanning-tree mst edge-port

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	edge-port	Enable mstp edge port
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# spanning-tree mst edge <edge> - Enable mstp edge port	
Error messages	MSTP edge port enable set error	
Related commands	show redundancy mst configuration	

spanning-tree mst enable

Use the spanning-tree mst enable interface configuration command on the switch to enable the Multiple Spanning Tree (MSTP) feature on the port. Use the **no** form of this command to disable the setting.

<u>**Commands**</u>

spanning-tree mst enable

no spanning-tree mst

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	enable	Enable mstp port
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# spanning-tree mst enable <enable> - Enable mstp port	
Error messages	MSTP port 2-1 enable set error	
Related commands	show redundancy mst configuration	

spanning-tree mst forward-delay

Use the **spanning-tree mst forward-delay** redundancy configuration command on the switch to set the forward delay of Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting. TBD

Commands

spanning-tree mst forward-delay time

no spanning-tree mst forward-delay

Syntax Description	spanning-tree	Configure spanning tree
	mst	Configure mstp
	forward-delay	Set mstp forwarding delay
	time	mstp forwarding delay
Defaults	time = 15	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) time is range from 4 to 30	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# spanning-tree mst forward-delay 15	
Error messages	MSTP forward delay must be in the range from 4 to 30 MSTP forward delay set error	
Related commands	show redundancy mst configuration	

spanning-tree mst hello-time

Use the **spanning-tree mst hello-time** redundancy configuration command on the switch to set the hello time of Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting.

Commands

spanning-tree mst hello-time time

no spanning-tree mst hello-time

Syntax Description	spanning-tree	Configure spanning tree
	mst	Configure mstp
	hello-time	set mstp hello time
	time	mstp hello time value
Defaults	time = 2	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) time is range from 1 to 10	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# spanning-tree mst hello-time 1	
Error messages	MSTP hello time must be in the range from 1 to 10 MSTP hello time set error	
Related commands	show redundancy mst configuration	

spanning-tree mst instance

Use the **spanning-tree mst instance** redundancy configuration command on the switch to setting the MSTP instances. Use the **no** form of this command to remove the setting. TBD

Commands

spanning-tree mst instance instance-id **vlan** vlan-id-list

no spanning-tree mst instance instance-ids

no spanning-tree mst instance instance-ids **vlan** vlan-id-list

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	instance	Configure mstp msti
	instance-id	MSTP instance ID
	vlan	Configure mstp msti vlan mapping
	vlan-id-list	Configure mstp msti vlan mapping
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	instance-id is range from 1 to 16 vlan-id is range from 1 to 4094	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config)# spanning-tree mst instance 1 vlan 2`	

Error messages	The instance id must be in the range from 1 to 16. vlan 4097 is invalid!! should be range from 1 to 4094 The maximum VLAN mapping is 64. The vlan id 2 setting is exist in another instance. MSTI 1 vlan id 2 set error	
Related commands	show redundancy mst instance	

spanning-tree mst instance cost

Use the **spanning-tree mst instance cost** interface configuration command on the switch to set the port cost of the MSTP instances. Use the **no** form of this command to return to the default setting.

Commands

spanning-tree mst instance instance-id-list **cost** cost

no spanning-tree mst instance instance-id-list **cost**

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	instance	Configure mstp msti port
	instance-id-list	MSTP instance IDs
	cost	Configure mstp msti port path cost
	cost	Configure mstp msti port path cost
Defaults	cost = 0	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	`MOXA(config-if)# spanning-tree mst cist cost 0` `  <UINT:cost>       - Configure mstp msti port path cost`	
Error messages	MSTP port path cost must be in the range from 0 to 200000000 MSTP forward delay set error	
Related commands	show redundancy mst configuration	

spanning-tree mst instance port-priority

Use the **spanning-tree mst instance port-priority** interface configuration command on the switch to set the port priority for the MSTP instances. Use the **no** form of this command to return to the default setting.

Commands

spanning-tree mst instance instance-id-list **port-priority** priority
no spanning-tree mst instance instance-id-list **port-priority**

Syntax	**spanning-tree**	Configure spanning tree
Description	**mst**	Configure mstp
	instance	Configure mstp msti port
	instance-id-list	MSTP instance ID
	port-priority	Configure mstp msti port priority
	priority	Configure mstp msti port priority
Defaults	priority = 128	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA(config-if)# spanning-tree mst instance 1 port-priority 128`
	`  <STRING:instids>        - Configure mstp msti port priority`
	`  <UINT:priority>         - Configure mstp msti port priority`	

Error messages	MSTP port priority must be in the range from 0 to 240 MSTI 2 port 2-1 priority set error MSTI 2 port priority should be 16 times the value	
Related commands	show redundancy mst configuration	

spanning-tree mst instance priority

Use the **spanning-tree mst instance priority** redundancy configuration command on the switch to set the switch priority for the MSTP instances. Use the **no** form of this command to return to the default setting. TBD

Commands

spanning-tree mst instance instance-id **priority** priority
spanning-tree mst instance instance-id-list **priority** priority
no spanning-tree mst instance instance-id-list **priority**

Syntax	**spanning-tree**	Configure spanning tree
Description	**mst**	Configure mstp
	instance	Configure mstp msti
	instance-id	MSTP instance ID
	priority	Set mstp msti bridge priority
	priority	Set mstp msti bridge priority
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	priority is range from 0 to 61140	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree mst instance 1 priority 32768`	

Error messages	MSTP bridge priority must be in the range from 0 to 61140 MSTP cist bridge priority set error MSTI bridge priority should be 4096 times the value	
Related commands	show redundancy mst instance	

spanning-tree mst max-age

Use the **spanning-tree mst max-age** redundancy configuration command on the switch to set the switch maximum age time for Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting.

<u>Commands</u>

spanning-tree mst max-age age

no spanning-tree mst max-age

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	max-age	Set mstp max age
	age	mstp max age
Defaults	age = 20	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) age is range from 6 to 40	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree mst max-age 10`
	`  <UINT:age>           - Set mstp max age`	

Error messages	MSTP max age must be in the range from 6 to 40 MSTP max age set error	
Related commands	show redundancy mst configuration	

spanning-tree mst max-hops

Use the **spanning-tree max-hops** redundancy configuration command on the switch to set the switch maximum hop number for Multiple Spanning Tree (MSTP). Use the **no** form of this command to return to the default setting.

<u>Commands</u>

spanning-tree mst max-hops hops

no spanning-tree mst max-hops

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	max-hops	Set mstp max hops
	hops	mstp max hops
Defaults	hops = 20	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec) hops is range from 6 to 40	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree mst max-hops 10`	

Error messages	MSTP max hops must be in the range from 6 to 40 MSTP max hops set error	
Related commands	show redundancy mst configuration	

spanning-tree mst name

Use the **spanning-tree mst name** redundancy configuration command on the switch stack to set the name of MSTP region for the spanning-tree.

Commands

spanning-tree mst name region-name

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	name	Set mstp regional name
	region-name	Set mstp regional name
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	The length of region-name should be smaller than 32	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree mst name mstp`	

Error messages	The length of mstp regional name should be smaller than 32 MSTP regional name set error	
Related commands	show redundancy mst instance	

spanning-tree mst revision

Use the **spanning-tree mst revision** redundancy configuration command on the switch to set revision level for Multiple Spanning Tree (MSTP).

Commands

spanning-tree mst revision revision-level

Syntax Description	**spanning-tree**	Configure spanning tree
	mst	Configure mstp
	revision	Set mstp revision level
	revision-level	mstp revision level value
Defaults	revision-level = 0	
Command Modes	Redundancy configuration	
Usage Guidelines	revision-level is range from 0 to 65535	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# spanning-tree mst revision 1`	

Error messages	MSTP revision level must be in the range from 0 to 65535 MSTP revision level set error	
Related commands	show redundancy mst configuration	

spanning-tree priority

Use the **spanning-tree priority** interface configuration command on the switch to set the interfaces priority for the spanning-tree. Use the **no** form of this command to return to the default setting.

<u>Commands</u>

spanning-tree priority prioriy

no spanning-tree priority

Syntax Description	spanning-tree	Enable spanning tree
	priority	Configure port priority
	priority	Range from 0 to 240, in steps of 16
Defaults	priority = 128	
Command Modes	interface configuration	
Usage Guidelines	0 <= priority <= 240, and must be multiples of 16.	
Examples	MOXA(config-rdnt)# spanning-tree priority <UINT:prio> - Range from 0 to 61440, in steps of 4096	
Error messages	The bridge priority must be in the range from 0 to 240 The bridge priority must be multiples of 16	
Related commands	show redundancy spanning-tree	

speed-duplex

Use the **speed-duplex** interface configuration command to specify the speed of the interface and its duplex mode. Use the **no** form of this command to return the interface to its default value.

<u>Commands</u>

speed-duplex {10M-Full | 10M-Half | 100M-Full| 100M-Half | Auto}

no speed-duplex

Syntax Description	speed-duplex	Configure speed and duplex operation
	10M-Full	Speed 10M-full
	10M-Half	Speed 10M-Half
	100M-Full	Speed 100M-Full
	100M-Half	Speed 100M-Half
	Auto	Speed Auto
Defaults	The default is **Auto**	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# interface trunk 1 MOXA(config-if)# speed-duplex 100M-Full MOXA(config-if)# no speed-duplex	
Error messages	Fiber port can not be set speed-duplex!!! This port can not be set to 1G!!! Parameter does not be defined!!! Cannot configure on trunk member port 1/1 This setting cannot be applied on trunk port!	
Related commands	show interfaces ethernet	

sshkeygen

Use the **sshkeygen** user EXEC command to generate SSL host key.

Commands

sshkeygen

Syntax Description	**sshkeygen**	Generate SSH host key
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# sshkeygen generating ssh host key ... generating ssh host key : done	
Error messages	N/A	
Related commands	N/A	

sslcertgen

Use the **sslcertgen** user EXEC command to generate SSL certificate.

Commands

sslcertgen

Syntax Description	**sslcertgen**	Generate SSL certificate
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	MOXA# sslcertgen generating ssl certificate ... generating ssl certificate : done	
Error messages	N/A	
Related commands	N/A	

storm-control

Use the **storm-control** global configuration command on the switch to enable the storm protection. Use the **no** form of this command to disable it or return to the default.

<u>**Commands**</u>

storm-control { bcast | mcast | dlf}

no storm-control bcast

no storm-control mcast

no storm-control dlf

no storm-control

Syntax Description	**storm-control**	Storm protection
	bcast	Storm protection for broadcast traffic
	mcast	Storm protection for Multicast traffic
	dlf	Storm protection for unknown destination traffic
Defaults	The broadcast storm protection is default enabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# storm-control bcast`
	`MOXA(config)# storm-control mcast`
	`MOXA(config)# storm-control dlf`
	`MOXA(config)# no storm-control bcast`
	`MOXA(config)# no storm-control mcast`
	`MOXA(config)# no storm-control dlf`	

Error messages	N/A	
Related commands	show storm-control	

switchport access vlan

Use the **switchport access vlan** interface configuration command on the switch to configure a port as a static-access or dynamic-access port. If the mode of switch port is set to access, the port operates as a member of the specified VLAN. If set to dynamic, the port starts discovery of VLAN assignment based on the incoming packets it receives. Use the **no** form of this command to reset the access mode to the default VLAN for the switch.

Commands

switchport access vlan vlan-id

no switchport access vlan

Syntax Description	switchport	Set switching mode characteristics
	access	Set access mode characteristics of the interface
	vlan	Set (default) pvid in access mode
	vlan-id	1 to 4094
Defaults	vlan-id = 1	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	MOXA# configure MOXA(config)# interface ethernet <STRING:mod_port> MOXA(config-if)# switchport access vlan 2 <UINT:vlanid> - 1 to 4094	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094	
Related commands	show vlan show vlan config	

switchport hybrid fixed vlan add

Use the **switchport hybrid fixed vlan add** interface configuration command on the switch to add the trunk hybrid characteristics when the interface is in hybrid mode. Use the **no** form of this command to reset to the default.

<u>**Commands**</u>

switchport hybrid fixed vlan add vlan-id-list **tag**

switchport hybrid fixed vlan add vlan-id-list **untag**

no switchport hybrid fixed vlan tag

no switchport hybrid fixed vlan untag

Syntax Description	switchport	Set switching mode characteristics
	hybrid	Set hybrid mode characteristics of the interface
	fixed	Set fixed VLAN characteristics
	vlan	1 to 4094
	add	Add VLANs to the current list
	vlan-id-list	VLAN IDs of the VLANs
	untag	Configure egress traffic as VLAN untagged traffic
	tag	Configure egress traffic as VLAN tagged traffic
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	MOXA(config-if)# switchport hybrid fixed vlan add 1,3-5,7 tag `<STRING:vlanids>` - VLAN IDs of the VLANs	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport trunk hybrid vlan remove	

switchport hybrid fixed vlan remove

Use the **switchport hybrid fixed vlan remove** interface configuration command on the switch to remove the trunk hybrid characteristics when the interface is in hybrid mode. Use the **no** form of this command to reset to the default.

Commands

switchport hybrid fixed vlan remove vlan-id-list **{tag|untag}**

no switchport hybrid fixed vlan {tag|untag}

Syntax Description	switchport	Set switching mode characteristics
	hybrid	Set hybrid mode characteristics of the interface
	fixed	Set fixed VLAN characteristics
	vlan	1 to 4094
	remove	Remove VLANs to the current list
	vlan-id-list	VLAN IDs of the VLANs
	untag	Configure egress traffic as VLAN untagged traffic
	tag	Configure egress traffic as VLAN tagged traffic
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	`MOXA(config-if)# switchport hybrid fixed vlan remove 1,3-5,7 tag` `   <STRING:vlanids>    - VLAN IDs of the VLANs`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport trunk hybrid vlan remove	

switchport hybrid forbidden vlan add

Use the **switchport hybrid forbidden vlan add** interface configuration command on the switch to add the trunk forbidden characteristics when the interface is in hybrid mode. Use the **no** form of this command to reset to the default.

Commands

switchport hybrid forbidden vlan add vlan-id-list

no switchport hybrid forbidden vlan

Syntax Description	switchport	Set switching mode characteristics
	hybrid	Set hybrid mode characteristics of the interface
	forbidden	Set forbidden VLAN characteristics
	vlan	1 to 4094
	add	Add VLANs to the current list
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	`MOXA(config-if)# switchport hybrid forbidden vlan add 1,3-5,7` `   <STRING:vlanids>    - VLAN IDs of the VLANs`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport hybrid forbidden vlan remove	

switchport hybrid forbidden vlan remove

Use the **switchport hybrid forbidden vlan remove** interface configuration command on the switch to remove the trunk forbidden characteristics when the interface is in hybrid mode. Use the **no** form of this command to reset to the default.

Commands

switchport hybrid forbidden vlan remove vlan-id-list

no switchport hybrid forbidden vlan

Syntax Description	switchport	Set switching mode characteristics
	hybrid	Set hybrid mode characteristics of the interface
	forbidden	Set forbidden VLAN characteristics
	vlan	1 to 4094
	remove	Remove VLANs from the current list
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	`MOXA(config-if)# switchport hybrid forbidden vlan remove 1,3-5,7` `  <STRING:vlanids>    - VLAN IDs of the VLANs`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport hybrid forbidden vlan add	

switchport hybrid native vlan

Use the **switchport hybrid native vlan** interface configuration command on the switch to configure PVID of a port. Use the **no** form of this command to return to the default PVID.

Commands

switchport hybrid native vlan vlan-id

no switchport hybrid native vlan

Syntax Description	switchport	Set switching mode characteristics
	hybrid	Set hybrid mode characteristics of the interface
	native	Set trunking native characteristics
	vlan	Set pvid vlanid in hybrid mode
	vlan-id	1 to 4094
Defaults	vlan-id = 1	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	`MOXA(config-if)# switchport hybrid native vlan 2` `  <UINT:vlanid>      - 1 to 4094`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094	
Related commands	show vlan show vlan config	

switchport pvlan

Use the **switchport pvlan** interface configuration command on the switch stack to define a port-based VLAN association for an isolated or community port or a mapping for a promiscuous port. Use the **no** form of this command to remove the port-based VLAN association or mapping from the port.

Commands

switchport pvlan vlan-groups

no switchport pvlan vlan-groups

Syntax	**switchport**	Set switching mode characteristics
Description	**pvlan**	Configure port-based vlan
	vlan-groups	Set/unset port-based vlan group
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# switchport pvlan 2,3,4 <STRING:groups> - set port-based vlan group	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094	
Related commands	show vlan show vlan config	

switchport trunk fixed vlan add

Use the **switchport trunk fixed vlan add** interface configuration command on the switch to add the trunk characteristics when the interface is in trunking mode. Use the **no** form of this command to reset a trunking characteristic to the default.

Commands

switchport trunk fixed vlan add vlan-id-list

no switchport trunk fixed vlan

Syntax	**switchport**	Set switching mode characteristics
Description	**trunk**	Set trunking mode characteristics of the interface
	fixed	Set fixed VLAN characteristics
	vlan	1 to 4094
	add	Add VLANs to the current list
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	MOXA(config-if)# switchport trunk fixed vlan add 1,3-5,7 <STRING:vlanids> - VLAN IDs of the VLANs	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport trunk fixed vlan remove	

switchport trunk fixed vlan remove

Use the **switchport trunk fixed vlan remove** configuration command on the switch stack to remove the trunk characteristics when the interface is in trunking mode. Use the **no** form of this command to reset a trunking characteristic to the default.

<u>**Commands**</u>

switchport trunk fixed vlan remove vlan-id-list

no switchport trunk fixed vlan

Syntax Description	switchport	Set switching mode characteristics
	trunk	Set trunking mode characteristics of the interface
	fixed	Set fixed VLAN characteristics
	vlan	1 to 4094
	remove	Remove VLANs from the current list
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	`MOXA(config-if)# switchport trunk fixed vlan remove 1,3-5,7` `   <STRING:vlanids>    - VLAN IDs of the VLANs`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport trunk fixed vlan add	

switchport trunk forbidden vlan add

Use the **switchport trunk forbidden vlan add** configuration command on the switch to add the trunk forbidden characteristics when the interface is in trunking mode. Use the **no** form of this command to reset a trunking characteristic to the default.

<u>**Commands**</u>

switchport trunk forbidden vlan add vlan-id-list

no switchport trunk forbidden vlan

Syntax Description	switchport	Set switching mode characteristics
	trunk	Set trunking mode characteristics of the interface
	forbidden	Set forbidden VLAN characteristics
	vlan	1 to 4094
	add	Add VLANs to the current list
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	`MOXA(config-if)# switchport trunk forbidden vlan add 1,3-5,7` `   <STRING:vlanids>    - VLAN IDs of the VLANs`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport trunk forbidden vlan remove	

switchport trunk forbidden vlan remove

Use the **switchport trunk forbidden vlan remove** configuration command on the switch stack or on a standalone switch to remove the trunk forbidden characteristics when the interface is in trunking mode. Use the **no** form of this command to reset a trunking characteristic to the default.

<u>**Commands**</u>

switchport trunk forbidden vlan remove vlan-id-list

no switchport trunk forbidden vlan

Syntax Description	switchport	Set switching mode characteristics
	trunk	Set trunking mode characteristics of the interface
	forbidden	Set forbidden VLAN characteristics
	vlan	1 to 4094
	remove	Remove VLANs from the current list
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	MOXA(config-if)# switchport trunk forbidden vlan remove 1,3-5,7 `<STRING:vlanids>` - VLAN IDs of the VLANs	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 64 !!	
Related commands	show vlan show vlan config switchport trunk forbidden vlan add	

switchport trunk native vlan

Use the **switchport trunk native vlan** interface configuration command on the switch to configure PVID of a port as a trunking port. Use the **no** form of this command to return to the default.

<u>**Commands**</u>

switchport trunk native vlan vlan-id

no switchport trunk native vlan

Syntax Description	switchport	Set switching mode characteristics
	trunk	Set trunking mode characteristics of the interface
	native	Set trunking native characteristics
	vlan	Set pvid vlanid in trunk mode
	vlan-id	1 to 4094
Defaults	vlan-id = 1	
Command Modes	Interface configuration	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	MOXA(config-if)# switchport trunk native vlan 2 `<UINT:vlanid>` - 1 to 4094	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094	
Related commands	show vlan show vlan config	

terminal

Use the **terminal** command on the switch to configure the display length of terminal interface.

Commands

terminal length pageLength
terminal default length

Syntax Description	**terminal**	Change terminal page length
	length	Terminal page length
	default	Default terminal length is 20
	pageLength	0 or 20~100, 0 mean unlimited to prevent pagination
Defaults	Default terminal length is 20	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	

Examples	`MOXA# terminal default length`
	`MOXA# terminal length 100`
	`MOXA# terminal length 200`
	`% pageLength should be between 20 and 100`	

Error messages	pageLength should be between 20 and 100	
Related commands	N/A	

tracking logic

To create a logic tracking entry, use the **tracking logic** command. To delete the logic tracking entry configuration, use the **no tracking** command.

Commands

tracking tid **logic { and | or } [not] tid** tid_1 **tid** tid_2 [**tid** tid_3 [**tid** tid_4]]
no tracking { all | tid **}**

Syntax Description	**tracking**	Configure tracking functions
	tid	Tracking ID (1 - 64) of the created tracking entry
	logic	Create a logic tracking entry to monitor tracking entries
	and	Logic operator AND
	or	Logic operator OR
	not	Logic operator NOT
	tid	Set the monitored tracking entries
	tid_1	The first monitored tracking entry
	tid_2	The second monitored tracking entry
	tid_3	The third monitored tracking entry
	tid_4	The fourth monitored tracking entry
Defaults	Logic operator is AND	
Command Modes	Global configuration	
Usage Guidelines	When the logic tracking entry is created, it is enabled.	
	The tracking IDs of the monitored tracking entries should be smaller than the logic tracking's.	
Examples	`MOXA(config)# tracking 5 logic and tid 1 tid 2 tid 3 tid 4` `MOXA(config)# no tracking 5`	
Error messages	Tracking ID should be between 1 and 64!	
	Same tracking ID with other tracking entry!	
	Tracking entry is full!	
	Invalid: TID 1, TID 2, TID 3, TID 4!	
Related commands	show tracking	

tracking mode

To enable tracking entry, use the **tracking mode** command in global configuration mode. To disable tracking entry, use the **no** form of this command.

<u>Commands</u>

tracking mode { **all** | tid }

no tracking mode { **all** | tid }

Syntax Description	**tracking**	Configure tracking functions
	mode	Set tracking entry enable / disable
	all	Enable/Disable all the existing tracking entries
	tid	Enable/Disable the tracking entry with the TID (1 - 64)
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	A tracking entry works only when the tracking function and the tracking entry are enabled.	

Examples	`MOXA(config)# tracking mode 1`
	
	`MOXA(config)# no tracking mode 1`	

Error messages	Tracking ID should be between 1 and 64!	
	Tracking ID does not exist!	
Related commands	show tracking { all | interface | ping | logic }	

tracking module

To enable tracking function, use the **tracking module** command in global configuration mode. To disable tracking function, use the **no** form of this command.

<u>Commands</u>

tracking module

no tracking module

Syntax Description	**tracking**	Configure tracking functions
	module	Enable/Disable tracking function
Defaults	Tracking function is disabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA (config)# tracking module`
	
	`MOXA(config)# no tracking module`	

Error messages	N/A	
Related commands	show tracking	

tracking ping

To create a ping tracking entry, use the **tracking ping** command. To delete the ping tracking entry configuration, use the **no tracking** command.

Commands

tracking tid **ping** ip [**interval** interval] [**timeout** timeout] [**received** received [**lost** lost]]

no tracking { all | tid **}**

Syntax Description	**tracking**	Configure tracking functions
	tid	Tracking ID (1 - 64) of the created tracking entry
	ping	Create a ping tracking entry to monitor an IP address
	ip	Monitored IP address
	interval	Set the interval of the ping tracking entry
	interval	Interval (100 - 100,000 ms)
	timeout	Set the timeout of the ping tracking entry
	timeout	Timeout (1 - 100,000 ms)
	received	Set the received threshold of the ping tracking entry
	received	Received threshold (1 - 100 times)
	lost	Set the lost threshold of the ping tracking entry
	lost	Lost threshold (1 - 100 times)
Defaults	Interval is 1,000 ms	
	Timeout is 100 ms	
	Received threshold is 3 times	
	Lost threshold is 3 times	
Command Modes	Global configuration	
Usage Guidelines	When the ping tracking entry is created, it is enabled.	
	If the received threshold is 100 (times), then the status of the ping tracking entry would not ever change from down to up.	
	If the lost threshold is 100 (times), then the status of the ping tracking entry would not ever change from up to down.	
Examples	MOXA(config) # tracking 1 ping 192.168.127.253 interval 100 timeout 5 received 3 lost 3 MOXA(config) # no tracking 1	
Error messages	Tracking ID should be between 1 and 64!	
	Only supports 8 tracking entries when interval is under 1000 (ms) and turbo ring / turbo chain is enabled!	
	Only supports 16 tracking entries when interval is under 1000 (ms)!	
	Tracking entry is full!	
	Same tracking ID with other tracking entry!	
	Invalid: IP address, interval, timeout, received threshold, lost threshold!	
Related commands	show tracking	

tracking port/vlan

To create an interface tracking entry, use the **tracking port** and **tracking vlan** commands. To delete the interface tracking entry configuration, use the **no tracking** command.

Commands

tracking tid **port** port_number [**interval** interval] [**up_delay** up_delay] [**down_delay** down_delay]

tracking tid **vlan** vid [**interval** interval] [**up_delay** up_delay] [**down_delay** down_delay]

no tracking { all | tid **}**

Syntax Description	tracking	Configure tracking functions
	tid	Tracking ID (1 - 64) of the created tracking entry
	port	Create an interface tracking entry to monitor a port
	port_number	Monitored port number
	vlan	Create an interface tracking entry to monitor a layer 3 interface
	vid	The VID (1 - 4094) of the monitored layer 3 interface
	interval	Set the interval of the interface tracking entry
	interval	Interval (100 - 100,000 ms)
	up_delay	Set the up delay of the interface tracking entry
	up_delay	Up delay (0 - 100,000 ms)
	down_delay	Set the down delay of the interface tracking entry
	down_delay	Down delay (0 - 100,000 ms)
Defaults	Interval is 1,000 ms	
	Up delay is 1,000 ms	
	Down delay is 1,000 ms	
Command Modes	Global configuration	
Usage Guidelines	When the interface tracking entry is created, it is enabled.	
	If up delay is 0 (ms), then the status of the interface tracking entry changes immediately when the status of the monitored interface changes from down to up.	
	If up delay is 100,000 (ms), then the status of the interface tracking entry will not ever change from down to up.	
	If down delay is 0 (ms), then the status of the interface tracking entry changes immediately when the status of monitored interface changes from up to down.	
	If down delay is 100,000 (ms), then the status of the interface tracking entry will not ever change from up to down.	
| Examples | ```
MOXA(config) # tracking 1 port 1-1 interval 100 up_delay 300
down_delay 300

MOXA(config) # no tracking 1
``` | |
Error messages	Tracking ID should be between 1 and 64!	
	Same tracking ID with other tracking entry!	
	Tracking entry is full!	
	Invalid: port number/VID, interval, up delay, down delay!	
Related commands	show tracking	

trunk-group

Use the **trunk-group** interface configuration command on the switch to assign an Ethernet port to a trunk group. Use the **no** form of this command to remove an Ethernet port from a trunk group.

Commands

trunk-group trunk_id

no trunk-group

Syntax Description	**trunk-group**	Join trunk group as members
	trunk_id	Trunk ID.
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	trunk_id: 1 to 4	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# trunk-group 2`	

Error messages	This setting cannot be applied on trunk port! Trunk ID is only allowed from 1 to 4	
Related commands	show interfaces trunk	

trunk-mode

Use the **trunk-mode** interface configuration command on the switch to set the trunk mode of the specified trunk group.

Commands

trunk-mode { static | lacp }

Syntax Description	**trunk-mode**	Trunk mode configuration
	static	Configure as static trunk
	lacp	Configure as LACP trunk
Defaults	The default trunk mode of creating trunk manually is static.	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# interface ethernet 1/1`
	`MOXA(config-if)# trunk-mode static`
	`MOXA(config-if)# trunk-mode lacp`	

Error messages	This setting cannot be applied on normal port!	
Related commands	show interfaces trunk	

trusted-access

Same as **access-ip**.

Commands

trusted-access [ip-address netmask]
no trusted-access [ip-address netmask]

Syntax Description	**trusted-access**	Enable the trusted IP list for access
	ip-address	IP address
	netmask	IP netmask
Defaults	The feature is disabled by default.	
Command Modes	Management configuration	
Usage Guidelines	This feature will take effect when the "trusted-access" command is executed.	
Examples	MOXA# configure terminal MOXA(config)# interface mgmt MOXA(config-vlan)# trusted-access MOXA(config-vlan)# trusted-access 192.168.127.22 255.255.0.0	
Error messages	Trusted access ip list full	
	IP: IP-format mask: mask-format does not exist in trusted access IP list	
Related commands	show interface mgmt trusted-access	

turbo-chain

Use the **turbo-chain** redundancy configuration command on the switch stack or on a standalone switch to configure Turbo Chain.

Commands

turbo-chain role { head | member | tail } primary interface module/port **secondary interface** module/port

Syntax Description	**turbo-chain**	Configure turbo chain
	role	Turbo chain role setting
	head	Turbo chain role head setting
	member	Turbo chain role member setting
	tail	Turbo chain role tail setting
	primary	Turbo chain primary port setting
	interface	Turbo chain port interface setting
	secondary	Turbo chain secondary port setting
	module/port	Port ID. E.g., 1/3, 2/1,...
Defaults	N/A	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-chain role head primary interface 1/1 secondary interface 1/2 MOXA(config-rdnt)# turbo-chain role member primary interface 1/1 secondary interface 1/2 MOXA(config-rdnt)# turbo-chain role tail primary interface 1/1 secondary interface 1/2	
Error messages	N/A	
Related commands	show redundancy turbo-chain	

turbo-ring-v1

Use the **turbo-ring-v1** redundancy configuration command on the switch to enable the Turbo Ring v1 with specified Ring ports.

<u>**Commands**</u>

turbo-ring-v1 primary interface primary-port **secondary interface** secondary-port

Syntax Description	**turbo-ring-v1**	Configure turbo ring v1
	primary	Turbo ring v1 ring ports setting
	interface	Turbo ring v1 ring ports setting
	primary-port	Port ID. E.g., 1/3, Trk2,...
	secondary	Turbo ring v1 ring ports setting
	interface	Turbo ring v1 ring ports setting
	secondary-port	Port ID. E.g., 1/3, Trk2,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-ring-v1 primary interface 2/1 secondary interface 2/2 <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,... <STRING:sec_port> - Port ID. E.g., 1/3, Trk2,...	
Error messages	Interface 2-1 not exist One port is the same in ring ports or coupling ports	
Related commands	show redundancy turbo-ring-v1	

turbo-ring-v1 coupling

Use the **turbo-ring-v1 coupling** redundancy configuration command on the switch to set the coupling for Turbo Ring v1. Use the **no** form of this command to disable it.

Commands

turbo-ring-v1 coupling interface primary-port **coupling-control-port interface** secondary-port

no turbo-ring-v1 coupling

Syntax Description	**turbo-ring-v1**	Configure turbo ring v1
	coupling	Configure ring coupling
	interface	Turbo ring v1 ring ports setting
	primary-port	Primary port ID. E.g., 1/3, Trk2,...
	coupling-control-port	Turbo ring v1 coupling ports setting
	interface	Turbo ring v1 ring ports setting
	secondary-port	Secondary port ID. E.g., 1/3, Trk2,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-ring-v1 coupling interface 2/1 coupling-control-port interface 2/2 <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,... <STRING:sec_port> - Port ID. E.g., 1/3, Trk2,...	
Error messages	Interface 2-1 not exist One port is the same in ring ports or coupling ports	
Related commands	show redundancy turbo-ring-v1	

turbo-ring-v1 master

Use the **turbo-ring-v1 master** redundancy configuration command on the switch to set the switch as the Turbo Ring v1 Master. Use the **no** form of this command to return to the normal Turbo Ring v1 member.

Commands

turbo-ring-v1 master

no turbo-ring-v1 master

Syntax Description	**turbo-ring-v1**	Configure turbo ring v1
	master	Set ring as master
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-ring-v1 master	
Error messages	N/A	
Related commands	show redundancy turbo-ring-v1	

turbo-ring-v2

Use the **turbo-ring-v2** redundancy configuration command on the switch to configure the Turbo Ring v2 with specified Ring ports. Use the **no** form of this command to disable the specified ring.

<u>Commands</u>

turbo-ring-v2 ring-id **primary interface** primary-port **secondary interface** secondary-port

no turbo-ring-v2 ring-id

Syntax Description	**turbo-ring-v2**	Configure turbo ring v2
	ring-id	Turbo ring v2 ring id
	primary	Turbo ring v2 ring ports setting
	interface	Turbo ring v2 ring ports setting
	primary-port	Port ID. E.g., 1/3, 2/1,...
	secondary	Turbo ring v2 ring ports setting
	interface	Turbo ring v2 ring ports setting
	secondary-port	Port ID. E.g., 1/3, 2/1,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	At least enable one turbo-ring domain or coupling. But cannot enable two turbo-ring domains and coupling in the same time.	

Examples	MOXA# configure terminal
	MOXA(config)# redundancy
	MOXA(config-rdnt)# turbo-ring-v2 1 primary interface 2/1 secondary interface 2/2
	  <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,...
	  <STRING:sec_port> - Port ID. E.g., 1/3, Trk2,...	

Error messages	Turbo ring v2 only supports maximum 2 ring domains Interface 2-1 not exist Ring1: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Ring2: One port couldn't be set as Ring1 redundant port simultaneously !!! Coupling: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Primary port couldn't be set as Ring2 redundant port simultaneously !!! Backup port couldn't be set as Ring2 redundant port simultaneously !!! Coupling port couldn't be set as Ring2 redundant port simultaneously !!! Please select at least one Ring!!! Ring1, ring2, coupling couldn't be enabled simultaneously!!! Please enable one Ring in "Ring Coupling" mode!!!	
Related commands	show redundancy turbo-ring-v2	

turbo-ring-v2 coupling backup

Use the **turbo-ring-v2 coupling** redundancy configuration command on the switch to configure the backup port of Ring coupling for Turbo Ring v2. Use the **no** form of this command to disable the coupling.

<u>Commands</u>

turbo-ring-v2 coupling backup interface backup-port

no turbo-ring-v2 coupling

Syntax Description	**turbo-ring-v2**	Configure turbo ring v2
	coupling	Configure ring coupling
	backup	Configure ring coupling mode
	interface	Turbo ring v2 coupling ports setting
	backup-port	Port ID. E.g., 1/3, 2/1,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	At least enable one turbo-ring domain or coupling. But cannot enable two turbo-ring domains and coupling in the same time.	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-ring-v2 coupling backup interface 2/1 <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,...	
Error messages	Turbo ring v2 only supports maximum 2 ring domains Ring1: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Ring2: One port couldn't be set as Ring1 redundant port simultaneously !!! Coupling: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Primary port couldn't be set as Ring2 redundant port simultaneously !!! Backup port couldn't be set as Ring2 redundant port simultaneously !!! Coupling port couldn't be set as Ring2 redundant port simultaneously !!! Please select at least one Ring!!! Ring1, ring2, coupling couldn't be enabled simultaneously!!! Please enable one Ring in "Ring Coupling" mode!!!	
Related commands	show redundancy turbo-ring-v2	

turbo-ring-v2 coupling dual-homing

Use the **turbo-ring-v2 coupling dual-homing** redundancy configuration command on the switch to enable dual homing feature of Ring coupling for the Turbo Ring v2. Use the **no** form of this command to disable it.

<u>**Commands**</u>

turbo-ring-v2 coupling dual-homing primary interface primary-port **backup interface** secondary-port

no turbo-ring-v2 coupling

Syntax Description	**turbo-ring-v2**	Configure turbo ring v2
	coupling	Configure ring coupling
	dual-homing	Configure dual homing mode
	primary	Turbo ring v2 ring ports setting
	interface	Turbo ring v2 ring ports setting
	primary-port	Port ID. E.g., 1/3, 2/1,...
	backup	Turbo ring v2 ring ports setting
	interface	Turbo ring v2 ring ports setting
	secondary-port	Port ID. E.g., 1/3, 2/1,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	At least enable one turbo-ring domain or coupling. But cannot enable two turbo-ring domains and coupling in the same time.	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-ring-v2 coupling dual-homing primary interface 2/1 secondary interface 2/2 <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,... <STRING:sec_port> - Port ID. E.g., 1/3, Trk2,...	
Error messages	Turbo ring v2 only supports maximum 2 ring domains Ring1: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Ring2: One port couldn't be set as Ring1 redundant port simultaneously !!! Coupling: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Primary port couldn't be set as Ring2 redundant port simultaneously !!! Backup port couldn't be set as Ring2 redundant port simultaneously !!! Coupling port couldn't be set as Ring2 redundant port simultaneously !!! Please select at least one Ring!!! Ring1, ring2, coupling couldn't be enabled simultaneously!!! Please enable one Ring in "Ring Coupling" mode!!!	
Related commands	show redundancy turbo-ring-v2	

turbo-ring-v2 coupling primary

Use the **turbo-ring-v2 coupling primary** redundancy configuration command on the switch to configure the primary port of Ring coupling for Turbo Ring v2. Use the **no** form of this command to return to the default setting.

<u>**Commands**</u>

turbo-ring-v2 coupling primary interface primary-port

no turbo-ring-v2 coupling

Syntax Description	**turbo-ring-v2**	Configure turbo ring v2
	coupling	Configure ring coupling
	primary	Configure ring coupling mode
	interface	Turbo ring v2 coupling ports setting
	primary-port	Port ID. E.g., 1/3, 2/1,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	At least enable one turbo-ring domain or coupling. But cannot enable two turbo-ring domains and coupling in the same time.	
Examples	MOXA# configure terminal MOXA(config)# redundancy MOXA(config-rdnt)# turbo-ring-v2 coupling primary interface 2/1 <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,...	
Error messages	Turbo ring v2 only supports maximum 2 ring domains Ring1: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Ring2: One port couldn't be set as Ring1 redundant port simultaneously !!! Coupling: One port couldn't be set as 1st and 2nd redundant port simultaneously !!! Primary port couldn't be set as Ring2 redundant port simultaneously !!! Backup port couldn't be set as Ring2 redundant port simultaneously !!! Coupling port couldn't be set as Ring2 redundant port simultaneously !!! Please select at least one Ring!!! Ring1, ring2, coupling couldn't be enabled simultaneously!!! Please enable one Ring in "Ring Coupling" mode!!!	
Related commands	show redundancy turbo-ring-v2	

turbo-ring-v2 master

Use the **turbo-ring-v2 master** redundancy configuration command on the switch to configure the switch as the Ring Master of specified ring for Turbo Ring v2. Use the **no** form of this command to configure the switch as the normal member of specified ring for Turbo Ring v2.

Commands

turbo-ring-v2 ring-id **master**

no turbo-ring-v2 ring-id **master**

Syntax Description	**turbo-ring-v2**	Configure turbo ring v2
	ring-id	Turbo ring v2 ring id
	master	Set turbo ring v2 ring id as master
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# redundancy`
	`MOXA(config-rdnt)# turbo-ring-v2 1 master`
	`  master              - Set turbo ring v2 ring id as master`	

Error messages	Turbo ring v2 only supports maximum 2 ring domains	
Related commands	show redundancy turbo-ring-v2	

username

Use the **username** global configuration command on the switch to set the username and password of the local login user. Use the **no** form of this command will clear the password setting of the specified user.

Commands

username { username } **password** [password **privilege** privilege-level]

no username { username }

Syntax Description	**username**	Configuration for login account authentication
	username	User name
	password	Specify the password
	password	Password string (Length of password should be from 4 to 16, and empty password is no longer allowed)
	privilege	Privilege for account
	privilege-level	3 values, "admin" and "user" for account leve, "no login" indicates account as non-login user
Defaults	There is no password for each user	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# username min password`
	`MOXA(config)# username min password 1234`
	`MOXA(config)# username min password 1234 privilege 1`
	`MOXA(config)# no username min`	

Error messages	N/A	
Related commands	show users	

vlan default

Use the **vlan default** configuration command on the switch to reset vlan.

Commands

vlan default

Syntax	**vlan**	Configure VLAN parameters
Description	**default**	Reset vlan
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	`MOXA# configure terminal` `MOXA(config)# vlan default`	
Error messages	N/A	
Related commands	vlan mode	

vlan mode

Use the **vlan mode** configuration command on the switch to change current VLAN mode operated on the switch. Use the **no** form of this command to return to the default.

Commands

vlan mode { 1qvlan | pvlan }

no vlan mode

Syntax	**vlan**	Configure VLAN parameters
Description	**mode**	Set vlan mode
	1qvlan	IEEE 802.1Q
	pvlan	Port-based vlan
Defaults	The default mode is 802.1Q mode in the product with 802.1Q supported; otherwise is port-based VLAN mode.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	`MOXA# configure terminal`
	`MOXA(config)# vlan mode 1qvlan`
	`MOXA(config)# vlan mode pvlan`	

Error messages	Port-based VLAN is only supported when IGMP Snooping is disabled	
Related commands	vlan default	

vlan set

Use the **vlan** set global configuration command on the switch to set name for specific VLAN. Use the **no** form of this command to reset VLAN name.

Commands

vlan set vlanid **name** [token1] [token2] [token3] [token4] [token5]
no vlan set vlanid **name**

Syntax Description	**vlan**	Configure VLAN parameters
	set	set <vid> name <name>
	vlanid	set <vid> name <name>
	name	set <vid> name <name>
	token1	set <vid> name <name> (maximum 30 characters)
	token2	set <vid> name <name> (maximum 30 characters)
	token3	set <vid> name <name> (maximum 30 characters)
	token4	set <vid> name <name> (maximum 30 characters)
	token5	set <vid> name <name> (maximum 30 characters)
Defaults	NULL	
Command Modes	Global configuration	
Usage Guidelines	vlanid is range from 1 to 4094 VLAN name is a string containing token1 to token5 sperated by space for example: vlan set 5 name a b c d e will result VLAN name in "a b c d e"	
Examples	`MOXA# configure terminal` `MOXA(config)# vlan set 2 name vlan1`	
Error messages	Name shoud be assigned after VLAN member port setting Length of VLAN name is at most 31 character	
Related commands	vlan mode	

vrrp tracking

To set a VRRP interface to a tracking entry, use the **vrrp tracking** command. To unbind the tracking entry, use the **no** form of this command.

Commands

vrrp tracking tid **decrement** decrement
no vrrp tracking

Syntax Description	**vrrp**	VRRP interface setting
	tracking	Set a VRRP interface to a tracking entry
	tid	The tracking ID (1 - 64) of the bound tracking entry
	decrement	Set the decrement value of the vrrp interface
	decrement	The decrement value
Defaults	Without binding any tracking entry	
	Decrement is 0	
Command Modes	Interface configuration	
Usage Guidelines	N/A	

Examples	`MOXA(config-vif) # vrrp tracking 1 decrement 50`
	
	`MOXA(config-vif) # no vrrp tracking`	

Error messages	Entry not Found!	
	Tracking ID should be between 1 and 64!	
	Tracking ID does not exist!	
	Decrement must be smaller than priority!	
Related commands	show ip vrrp	

warning-notification port-event

Use **warning-notification port-event** interface configuration commands to enable the port warning events trigger to email, relay, syslog or trap. Use **no** form of this command to disable it.

Commands

warning-notification port-event {event { link-on | link-off | traffic-overload rxThreshold duration**} | action** action-index **| severity** severity-level **| active}**

no warning-notification port-event {event { link-on | link-off | traffic-overload} | active}

Syntax Description	**warning-notification**	Warning notification
	port-event	Port event setting
	event	Select and configure event
	link-on	Link ON
	link-off	Link OFF
	traffic-overload	Traffic overloading
	rx-threshold	0 ~ 100
	duration	1 ~ 300
	action	Enable Action setting
	action-index	0 ~ 31
	severity	Severity setting
	severity-level	0 ~ 7
	active	Activate
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	action-index as follow, Trap only(1), Email only(2), Trap+Email(3), Syslog only(4), Trap+Syslog(5), Email+Syslog(6), Trap+Email+Syslog(7), Relay1 only(8), Trap+Relay1(9), Email+Relay1(10), Trap+Email+Relay1(11), Syslog+Relay1(12), Trap+Syslog+Relay1(13), Email+Syslog+Relay1(14), Trap+Email+Syslog+Relay1(15), Relay2 only(16), Trap+Relay2(17), Email+Relay2(18), Trap+Email+Relay2(19), Syslog+Relay2(20), Trap+Syslog+Relay2(21), Email+Syslog+Relay2(22), Trap+Email+Syslog+Relay2(23), Relay1+Relay2(24), Trap+Relay1+Relay2(25), Syslog+Relay1+Realy2(28), Email+Syslog+Relay1+Relay2(30), Trap+Email+Syslog+Relay1+Relay2(31), None(0) severity-level as follow, Emergency(0), Alert(1), Critical(2), Error(3), Warning(4), Notice(5), Information(6), Debug(7)	
Examples	`MOXA(config-if)#warning-notification port-event event traffic-overload 30 150` `MOXA(config-if)# no warning-notification port-event event link-on`	
Error messages	Invalid action value or non-support this combination action Invalid severity type	
Related commands	show relay-warning config	

warning-notification system-event

Use **warning-notification system-event** global configuration commands to enable the system warning events trigger to email, relay, syslog or trap. Use **no** form of this command to disable it.

Commands

warning-notification system-event { cold-start | warm-start | config-changed | pwr1-trans-on | pwr2-trans-on | pwr1-trans-off | pwr2-trans-off | auth-fail | password-changed | tacacs-auth-success | tacacs-auth-fail | tacacs-authentication-fail | tacacs-authentication-timeout | tacacs-authorization-fail | tacacs-authorization-timeout | tacacs-accounting-fail | tacacs-accounting-timeout | radius-auth-success | radius-auth-fail | topology-changed | coupling-changed | master-changed | master-mismatch | rstp-admin-changed | rstp-topology-changed | turbo-ring-break | di1-trans-on | di1-trans-off | abc02-status| web-login | rate-limited-on | rate-limited-off| port-looping | ptp-time | lldp-table-changed | fiber-warning | login-success | account-info-changed | config-imported | cert-imported | login-failure-lockout | mac-sticky-violation-port-disable } {action action-index **| severity** severity-level **| active}**

no warning-notification system-event { cold-start | warm-start | config-changed | pwr1-trans-on | pwr2-trans-on | pwr1-trans-off | pwr2-trans-off | auth-fail | password-changed | tacacs-auth-success | tacacs-auth-fail | tacacs-authentication-fail | tacacs-authentication-timeout | tacacs-authorization-fail | tacacs-authorization-timeout | tacacs-accounting-fail | tacacs-accounting-timeout | radius-auth-success |radius-auth-fail | topology-changed | coupling-changed | master-changed | master-mismatch | rstp-admin-changed | rstp-topology-changed | turbo-ring-break | di1-trans-on | di1-trans-off | abc02-status| web-login | rate-limited-on | rate-limited-off| port-looping | ptp-time | lldp-table-changed | fiber-warning | login-success | account-info-changed | config-imported | cert-imported | login-failure-lockout | mac-sticky-violation-port-disable } active}

Syntax Description	warning-notification	Configure warning-notification
	system-event	System event
	cold-start	Power is cut off and then reconnected.
	warm-start	The Moxa switch is rebooted, such as when network parameters are changed (IP address, subnet mask, etc.).
	config-changed	Any configuration item has been changed.
	pwr1-trans-on	The Moxa switch power 1 is powered on.
	pwr2-trans-on	The Moxa switch power 2 is powered on.
	pwr1-trans-off	The Moxa switch power 1 is powered down.
	pwr2-trans-off	The Moxa switch power 2 is powered down.
	auth-fail	An incorrect password was entered.
	password-changed	User changes the account password
	tacacs-auth-success	Correct authentication details were entered
	tacacs-auth-fail	Incorrect authentication details were entered
	tacacs-authentication-fail	Incorrect authentication details were entered
	tacacs-authentication-timeout	Connect to authentication server timeout
	tacacs-authorization-fail	Incorrect authorization details were entered
	tacacs- authorization -timeout	Connect to authorization server timeout
	tacacs-accounting-fail	Incorrect accounting details were entered
	tacacs- accounting -timeout	Connect to accounting server timeout
	radius-auth-success	Correct authentication details were entered
	radius-auth-fail	Incorrect authentication details were entered
	topology-changed	f the Master of the Turbo Ring has changed or the backup path is activated If the Turbo Ring path is disconnected If the MSTP topology has changed
	coupling-changed	Backup path is activated

	master-changed	Master of the Turbo Ring has changed
	master-mismatch	Master of the Turbo Ring has mismatch
	rstp-admin-changed	If the RSTP root has changed
	rstp-topology-changed	If any Rapid Spanning Tree Protocol switches have changed their position (applies only to the root of the tree)
	turbo-ring-break	Turbo Ring path is disconnected
	di1-trans-on	Digital Input 1 is triggered by an off to on transition
	di1-trans-off	Digital Input 1 is triggered by an on to off transition
	abc02-status	Detects if the ABC-02-USB-T is connected or disconnected to the switch when the ABC-02-USB-T automatically imports/exports/backs-up the configuration
	web-login	Any account has logged in to the web-based configuration console
	rate-limited-on	When the port is disabled due to the ingress throughput exceeds the configured rate limit.
	rate-limited-off	When the port is disabled due to the ingress throughput exceeds the configured rate limit.
	port-looping	Port looping event is triggered
	ptp-time	PTP time event is triggered
	lldp-table-changed	Nearly connected devices are changed and shown in the LLDP table
	fiber-warning	If the corresponding value of the fiber port status exceeds the threshold defined by the Fiber Check function
	login-success	Account login success
	account-info-changed	Account information changed
	config-imported	Configuration imported
	cert-imported	Certification imported
	login-failure-lockout	Login failure lockout
	mac-sticky-violation-port-disable	Mac sticky violation port disable
	action	Action
	action-index	Action option
	severity	Severity
	severity-level	Severity option
	active	active
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	action-index as follow, Trap only(1), Email only(2), Trap+Email(3), Syslog only(4), Trap+Syslog(5), Email+Syslog(6), Trap+Email+Syslog(7), Relay1 only(8), Trap+Relay1(9), Email+Relay1(10), Trap+Email+Relay1(11), Syslog+Relay1(12), Trap+Syslog+Relay1(13), Email+Syslog+Relay1(14), Trap+Email+Syslog+Relay1(15), Relay2 only(16), Trap+Relay2(17), Email+Relay2(18), Trap+Email+Relay2(19), Syslog+Relay2(20), Trap+Syslog+Relay2(21), Email+Syslog+Relay2(22), Trap+Email+Syslog+Relay2(23), Relay1+Relay2(24), Trap+Relay1+Relay2(25), Syslog+Relay1+Realy2(28), Email+Syslog+Relay1+Relay2(30), Trap+Email+Syslog+Relay1+Relay2(31), None(0) severity-level as follow, Emergency(0), Alert(1), Critical(2), Error(3), Warning(4), Notice(5), Information(6), Debug(7)	

Examples	```MOXA# configure terminal```
	```MOXA(config)# warning-notification system-event cold-start action 5```
	```MOXA (config)# warning-notification system-event cold-start severity 3```
	```MOXA (config)# no warning-notification system-event cold-start active```
	```MOXA(config)# warning-notification system-event tacacs-authentication-fail action 5```	

	MOXA (config)# warning-notification system-event tacacs-authentication-fail severity 3 MOXA (config)# no warning-notification system-event tacacs-authentication-fail active
Error messages	Invalid action value or non-support this combination action Invalid severity type
Related commands	show relay-warning config