Moxa Command Line Interface (FW_5.x)

Edition 1.3, April 2019

www.moxa.com/product

Models covered by this user's 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)

Copyright Notice

Trademarks

Disclaimer

Information in this document is subject to change without notice and does not represent a commitment on the part of Moxa.

Moxa provides this document as is, without warranty of any kind, either expressed or implied, including, but not limited to, its particular purpose. Moxa reserves the right to make improvements and/or changes to this manual, or to the products and/or the programs described in this manual, at any time.

Information provided in this manual is intended to be accurate and reliable. However, Moxa assumes no responsibility for its use, or for any infringements on the rights of third parties that may result from its use.

This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

Technical Support Contact Information

www.moxa.com/support

Moxa Americas
Toll-free: 1-888-669-2872
Tel: +1-714-528-6777
Fax: +1-714-528-6778

Moxa China (Shanghai office)
Toll-free: 800-820-5036
Tel: +86-21-5258-9955
Fax: +86-21-5258-5505

Moxa Europe
Tel: +49-89-3 70 03 99-0
Fax: +49-89-3 70 03 99-99

Moxa Asia-Pacific
Tel: +886-2-8919-1230
Fax: +886-2-8919-1231

Moxa India
Tel: +91-80-4172-9088
Fax: +91-80-4132-1045

Table of Contents

1

Command Modes

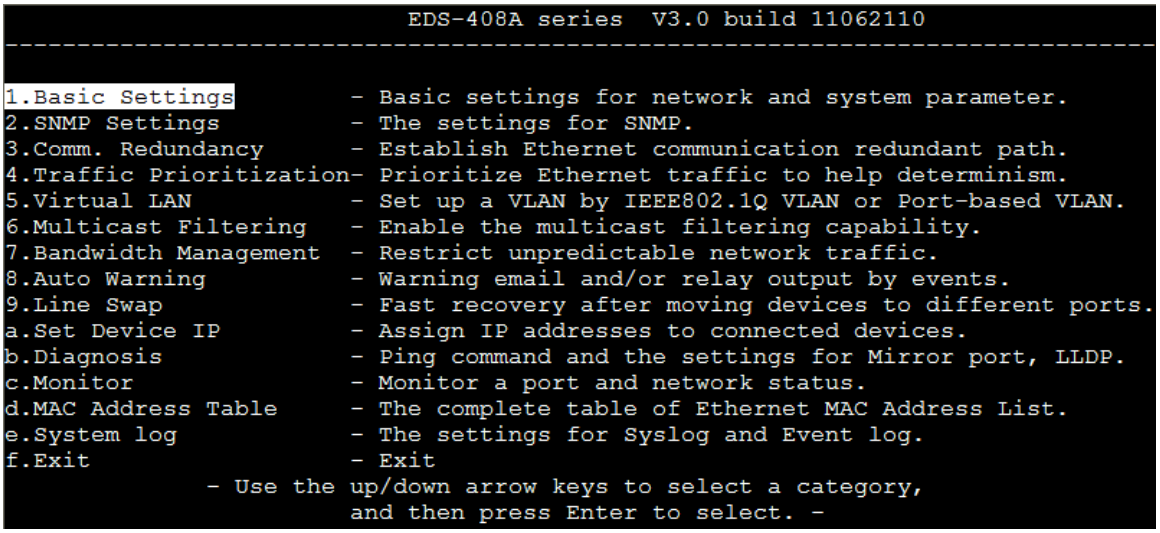
CLI (Command Line Interface)

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.

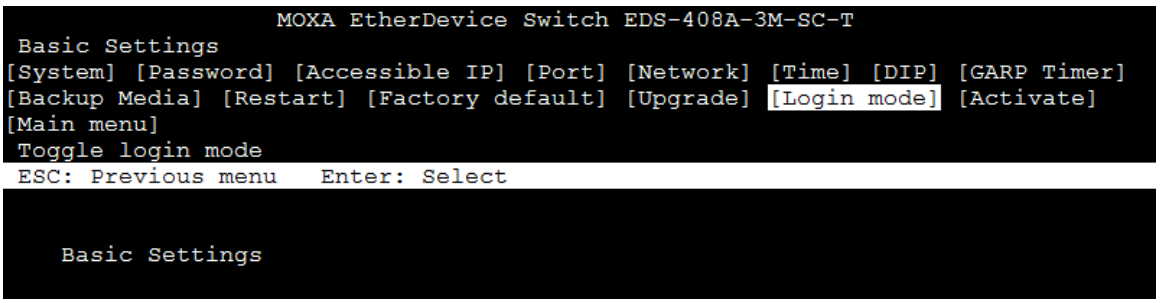
Configuring a Switch to CLI Mode

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.)

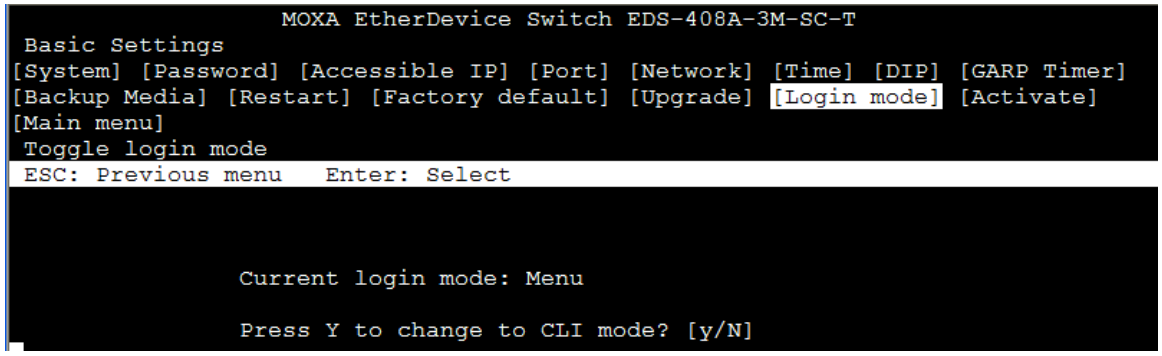
1. Select **Basic Settings**.



2. Select **Login mode**.



3. Press **y** to activate.

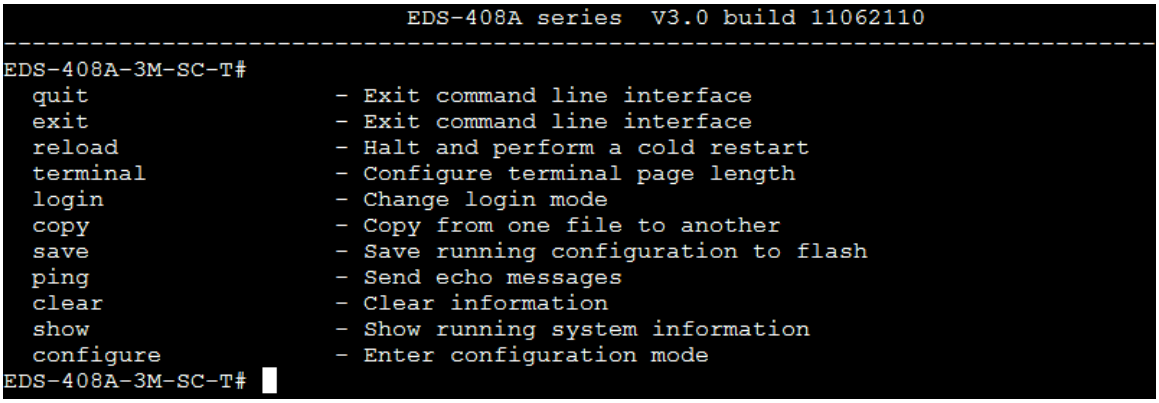


4. Now log in to access CLI display mode.

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.



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

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

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

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 Description	**access-ip**	Enable the accessible IP list
	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	

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.*

Commands

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	

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.*

Commands

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		
Related commands		

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		

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	
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	

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		
Related commands		

authentication mab

Use the **authentication dot1x** *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		
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	

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		

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		

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		

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.*

Commands

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	
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	

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		
Related commands		

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		

authentication tacacs+ login

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

Commands

authentication tacacs+ login server-ip *ip*
authentication tacacs+ login server-port *port*
authentication tacacs+ login shared-key *key*
authentication tacacs+ login timeout *second*
no authentication tacacs+ login

	authentication	Configure authentication mechanism

Syntax Description	**tacacs+**	TACACS+ setting
	login	Set tacacs+ setting to login authentication
	server-ip	Set tacacs+ server ip to login authentication
	ip	Set tacacs+ server ip to login authentication
	server-port	Set tacacs+ server port to login authentication
	port	Set tacacs+ server port to login authentication
	shared-key	Set tacacs+ server shared key to login authentication
	key	Set tacacs+ server shared key to login authentication
	timeout	Set tacacs+ server timeout value to login authentication
	second	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	*second* is range from 1 to 255	

Examples	`MOXA# configure terminal`
	`MOXA(config)# authentication tacacs+ login server-ip 168.95.1.1`
	`MOXA(config)# authentication tacacs+ login server-port 1813`
	`MOXA(config)# authentication tacacs+ login share-key moxa`
	`MOXA(config)# authentication tacacs+ login timeout 10`
	`MOXA(config)# authentication tacacs+ 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		

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		

Examples	MOXA# configure terminal MOXA(config)# authentication tacacs+ login auth-type ascii
Error messages	
Related commands	

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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

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
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#
Error messages	Input error
	Invalid TFTP Server IP/Name !!!
	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 !!!
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.*

Commands

dot1x auth

no dot1x auth

Syntax Description	**dot1x**	802.1x setting
	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.*

Commands

dot1x reauth

Syntax Description	**dot1x**	802.1x setting
	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 (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 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 send test-email

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

Commands

email-warning send test-email

Syntax Description	**email-warning**	Email warning setting
	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		

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.*

Commands

email-warning smtp account *username password*

no email-warning smtp account

	email-warning	Email warning setting

Syntax Description	**smtp**	SMTP server setting
	account	Email account on server
	username	User name
	password	User password
Defaults		
Command Modes	Global configuration	
Usage Guidelines		
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		

email-warning smtp auth

se **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		
Examples	MOXA# configure terminal MOXA(config)# email-warning smtp auth plain MOXA(config)# no email-warning smtp auth	
Error messages		
Related commands		

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		

email-warning smtp recipient

Use **email-warning smtp sender** *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.*

Commands

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		
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		

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.*

Commands

email-warning smtp sender *mailAddress*
no email-warning smtp sender

	email-warning	Email warning setting

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

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.*

Commands

email-warning smtp server *servaddr*
no email-warning smtp server

Syntax Description	**email-warning**	Email warning setting
	smtp	SMTP server setting
	server	SMTP Server name/address
	servaddr	SMTP Server name/address
Defaults	NULL	
Command Modes	Global configuration	
Usage Guidelines		
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		

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.*

Commands

email-warning smtp tls
no email-warning smtp tls

Syntax Description	**email-warning**	Email warning setting
	smtp	Email warning smtp setting
	tls	Enable/Disable TLS

Defaults	tls Default disabled
Command Modes	Global configuration
Usage Guidelines	
Examples	MOXA# configure terminal MOXA(config)# email-warning smtp tls MOXA(config)# no email-warning smtp tls
Error messages	
Related commands	

exit

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

Commands

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	

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*

Commands

flowcontrol

no flowcontrol

Syntax Description	**flowcontrol**	Configure flowcontrol
Defaults	The default is disable	

Command Modes	Interface configuration
Usage Guidelines	
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 c*onfigure GARP join timer parameters*. Use* **garp leave-time** *global configuration commands to c*onfigure GARP leave timer parameters*. Use* **garp leaveall-time** *global configuration commands to c*onfigure GARP leaveall timer parameters.*Use* **no** *form of this command to reset to default setting.*

Commands

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		

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 Description	**hostname**	Set system's network name (maximum 30 characters)
	token1~5	Combine *token1~5 to s*witch 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 Description	**interface**	Select an interface to configure
	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.*

Commands

interface mgmt

Syntax Description	**interface**	Select an interface to configure
	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.*

Commands

interface trunk *trunk_id_range*

Syntax Description	**interface**	Select an interface to configure
	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 ip auto-logout** *global configuration command to* configure auto-logout timer*. To reset to default, use the* **no** *form of this command.*

Commands

ip auto-logout *Minutes*

Syntax Description	**ip**	Global IP configuration subcommands
	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.*

Commands

ip default-gateway *ip-address*
no default-gateway

Syntax Description	**ip**	Configure IP paramters
	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*.

Commands

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.*

Commands

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 Description	**ip**	Global IP configuration subcommands
	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 Description	**Ip**	Global IP configuration subcommands
	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*.

Commands

ip igmp-snooping
no ip igmp-snooping

Syntax Description	**ip**	Global IP configuration subcommands
	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.*

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. Use the* **no** *form of this command to return to the default.*

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*.

Commands

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 Description	**ip**	Global IP configuration subcommands
	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 Description	**ip**	Global IP configuration subcommands
	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 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 Description	**ip**	Global IP configuration subcommands
	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 Description	**ipv6**	Configure IPv6
	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	

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.*

Commands

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 Description	**logging-capacity**	Enable and configure log capacity warning threshold.
	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 Description	**logging-capacity**	Enable and configure log capacity warning threshold.
	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. Use the* **no** *form of this command to stop the function.*

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	

login mode

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

Commands

login mode {cli | menu}

Syntax Description	**login**	Change login mode
	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 **Password-policy minimum-length** *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		
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.*

Commands

mac-address-sticky limit *stickyLimit*
mac-address-sticky *MacAddress* **vid** *vid*
no mac-address-sticky *MacAddress* **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 sec	
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 MOXA(config)# ip http-server secure port 2 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.*

Commands

monitor source interface *mod_port [direction]*
no monitor source interface
monitor destination interface *mod_port*
no monitor destination interface

Syntax Description	**monitor**	Configure Port mirror
	source	Monitored port
	interface	Port
	destination	Mirror port
	modPort	Port ID. E.g., 1/3, Trk2,...
	direction	tx | rx | both
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	

Error messages	Monitored Port is the same with Mirror Port !!! Invalid parameter Warning !!! Mirror Port don't set ! Warning !!! Monitored Port don't set !
Related commands	show port monitor

name

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

Commands

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	

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 Description	**ntp**	Configure Network Time Protocol
	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 Description	**ntp**	Configure Network Time Protocol
	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 Description	**ntp**	Configure Network Time Protocol
	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 Description	**ntp**	Configure Network Time Protocol
	refresh-time	Configure NTP 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 Description	**ntp**	Configure Network Time Protocol
	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 Description	**ntp**	Configure Network Time Protocol
	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 minimum-length** *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		

Related commands	N/A

ping

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

Commands

ping *destaddr*

Syntax Description	**ping**	Send echo messages
	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.*

Commands

poe auto
poe force budget *watt*
poe high-power

Syntax Description	**poe**	Power over Ethernet
	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 Description	**poe**	Power over Ethernet
	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 Description	**poe**	Power over Ethernet
	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 Description	**poe**	Power over Ethernet
	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.*

Commands

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.*

Commands

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

	poe	Power over Ethernet

Syntax Description	**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.*

Commands

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.*

Commands

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-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 [*MacAddress [***vid *vid***]]**

Syntax Description	**port-security**	Set port security
	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 Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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.*

Commands

ptp log-min-delay-req-interval *interval*

Syntax Description	**ptp**	Configure PTP
	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.*

Commands

ptp log-min-pdelay-req-interval *interval*

Syntax Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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 Description	**ptp**	Configure PTP
	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.*

Commands

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.*

Commands

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.*

Commands

ptp utc-offset-valid

no ptp utc-offset-valid

Syntax Description	**ptp**	Configure PTP
	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.*

Commands

qos default-cos *cos-value*
no qos default-cos

Syntax Description	**qos**	Configure QoS
	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 Description	**qos**	Configure QoS
	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

exit

Syntax Description	**quit**	Exit command line interface
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.*

Commands

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.*

Commands

reload [factory-default]

Syntax Description	**reload**	Halt and perform a cold restart
	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*.

Commands

save config

Syntax Description	**save**	Save running configuration to flash
	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*

Commands

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 clock

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

Commands

show clock

Syntax Description	**show**	Show running system information
	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*.*

Commands

show dip-switch

Syntax Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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-status

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

Commands

show fiber-status

Syntax Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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 **show 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 interfaces acl

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

Command

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	

show interfaces counters

Use the **show interfaces couters** *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.*

Commands

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.*

Commands

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.*

Commands

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**.

Commands

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.*

Commands

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.*

Commands

show ip auto-assign

Syntax Description	**show**	Show running system information
	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.*

Commands

show ip dhcp-relay config

Syntax Description	**show**	Show running system information
	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: 313233343536373839303132 33 --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	

show ipv6 neighbors

Use show **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 Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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 loopprotection

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

Commands

show loopprotection

Syntax Description	**show**	Show running system information
	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.*

Commands

show mac-address-sticky-list

Syntax Description	**show**	Show running system information
	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.*

Commands

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

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
	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.*

Commands

show modbus

Syntax Description	**show**	Show running system information
	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.

Commands

show ntp authentication-keys

Syntax Description	**show**	Show running system information
	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.

Commands

show ntp authentication-status

Syntax Description	**show**	Show running system information
	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*.*

Commands

show ntp peers

Syntax Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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

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

Syntax Description	**show**	Show running system information
	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.*

Commands

show port monitor

Syntax Description	**show**	Show running system information
	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.*

Commands

show ptp port *mod_port*

Syntax Description	**show**	Show running system information
	ptp	Display PTP infomation
	port	Display PTP port disable/enable state
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.*

Commands

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 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 configure

Use the **show redundancy mst configure** *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
	configure	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**	Show running system information
	redundancy	Display redundancy protocol status
	spanning-tree	Display spanning tree settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	

Examples	MOXA# show redundancy spanning-tree Spanning tree status : Disabled Root : Bridge Bridge ID Priority : 32768 Address : AA:BB:CC:DD:EE:FF Hello Time 2 sec Forward Delay 15 sec Max Age 20 sec Int# Link Edge Prio OperCost RootCost Role St Type Rcv BID ---- ---- ---- ---- -------- -------- ------- -- ---- ---------- 1/3 -- -- -- -- -- -- -- -- -- 1/4 -- -- -- -- -- -- -- -- -- 1/5 -- -- -- -- -- -- -- -- -- 1/6 -- -- -- -- -- -- -- -- -- 1/7 -- -- -- -- -- -- -- -- -- 1/8 -- -- -- -- -- -- -- -- -- 1/9 -- -- -- -- -- -- -- -- -- 1/10 -- -- -- -- -- -- -- -- -- 1/11 -- -- -- -- -- -- -- -- -- 1/12 -- -- -- -- -- -- -- -- -- --More--
Error messages	N/A
Related commands	spanning-tree forward-delay spanning-tree hello-time spanning-tree max-age spanning-tree priority spanning-tree spanning-tree cost spanning-tree edge-port spanning-tree priority show redundancy spanning-tree

show redundancy turbo-chain

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

Commands

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	MOXA# show redundancy turbo-chain Role :-- --- Port Role Port Number Port Status --- 1st Member Port G15 -- 2nd Member Port G16 --
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
System Events Setting
  Override Relay Warning Settings    : Disable
  Power Input 1 failure(On->Off)     : Disable
  Power Input 2 failure(On->Off)     : Disable
  Turbo Ring Break                 : Disable
Port Events Setting
                           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 Description	**show**	Show running system information
	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 snmp

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

Commands

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.*

Commands

show running-config

Syntax Description	**show**	Show running system information
	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.*

Commands

show static-port-lock ***[mod_port]***

Syntax Description	**show**	Show running system information
	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.*

Commands

show storm-control

Syntax Description	**show**	Show running system information
	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.*

Commands

show system

Syntax Description	**show**	Show running system information
	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 users

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

Commands

show users

Syntax Description	**show**	Show running system information
	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.*

Commands

show version

Syntax Description	**show**	Show running system information
	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 Description	**show**	Show running system information
	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** *user EXEC command to display VLAN configuration information.*

Commands

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.*

Commands

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.*

Commands

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 40.	

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.*

Commands

snmp-server default

Syntax Description	**snmp-server**	Configure SNMP server
	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.*

Commands

snmp-server description [*token1***] [***token2***] [***token3***] [***token4***] [***token5***]**
no snmp-server description

Syntax Description	**snmp-server**	Configure SNMP server
	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*

Commands

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.*

Commands

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 s*witch 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.*

Commands

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*

Commands

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 Description	**snmp-server**	Configure SNMP server
	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 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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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 priority** *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 Description	**spanning-tree**	Configure spanning tree
	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 Description	**spanning-tree**	Configure spanning tree
	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.*

Commands

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.*

Commands

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*

	spanning-tree	Configure spanning tree

Syntax Description	**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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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 add** *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 add** *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 Description	**switchport**	Set switching mode characteristics
	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 Description	**switchport**	Set switching mode characteristics
	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 add** *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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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

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	*runk_id*: 1 to 4	
Examples	MOXA# configure terminal MOXA(config)# interface ethernet 1/1 MOXA(config-if)# trunk-group 2 MOXA(config-if)# no 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. Use the* **no** *form of this command to return to the default setting.*

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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.*

Commands

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 create

Use the **vlan *create*** *global configuration command on the switch to create a VLAN in the VLAN database. Use the* **no** *form of this command to delete a VLAN.*

Commands

vlan create *vlan-id-list*
no vlan create *vlan-id-list*

Syntax Description	**vlan**	Configure VLAN parameters
	create	Configure VLAN parameters
	vlan-id-list	VLAN IDs of the VLANs
Defaults	N/A	
Command Modes	Global 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 terminal` `MOXA(config)# vlan create 1,3-5,7`	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094 vlan interfaces are full, total vlan interface is 256 !!	
Related commands	vlan mode	

vlan default

Use the **vlan default** *configuration command on the switch to reset vlan.*

Commands

vlan default

Syntax Description	**vlan**	Configure VLAN parameters
	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 Description	**vlan**	Configure VLAN parameters
	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

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 | 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 | 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
	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`	

Error messages	Invalid action value or non-support this combination action Invalid severity type	
Related commands	show relay-warning config	