

TN Series Command Line Interface

Version 1.1, July 2019

www.moxa.com/product



© 2019 Moxa Inc. All rights reserved.

TN Series Command Line Interface

The software described in this manual is furnished under a license agreement and may be used only in accordance with the terms of that agreement.

Copyright Notice

© 2019 Moxa Inc. All rights reserved.

Trademarks

The MOXA logo is a registered trademark of Moxa Inc.
All other trademarks or registered marks in this manual belong to their respective manufacturers.

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 Europe

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

Moxa India

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

Moxa China (Shanghai office)

Toll-free: 800-820-5036
Tel: +86-21-5258-9955
Fax: +86-21-5258-5505

Moxa Asia-Pacific

Tel: +886-2-8919-1230
Fax: +886-2-8919-1231

Table of Contents

1. Command Modes	1-1
CLI (Command Line Interface)	1-1
Configuring a Switch to CLI Mode	1-1
Basic Operation	1-2
Useful Interactive "Help" Features	1-3
Understanding All Commands	1-3
2. Commands	2-1
access-ip	2-1
acl id	2-1
acl id ip-base	2-2
acl id mac-base	2-2
area	2-3
area range	2-4
area virtual-link	2-4
auth tacacs+	2-5
auth tacacs+ auth-type	2-5
auth tacacs+ server	2-6
auto-backup	2-6
bind vlan	2-7
cfg-encrypt	2-7
clear counters	2-8
clear logging event-log	2-8
clock set	2-8
clock summer-time	2-9
clock timezone	2-9
copy	2-10
dot1x auth	2-11
dot1x auth	2-11
dot1x local-userdb	2-12
dot1x reauth	2-12
dot1x reauth	2-13
dip-switch	2-13
eip	2-13
email-warning account	2-14
email-warning event	2-14
email-warning event	2-15
email-warning mail-address	2-17
email-warning send test email	2-17
email-warning server	2-18
exit	2-18
flowcontrol	2-19
gmrp	2-19
gvrp	2-20
hostname	2-20
interface mgmt	2-21
interface vlan	2-21
ip address	2-22
ip address	2-22
ip auto-assign	2-23
ip default-gateway	2-23
ip dhcp client filter	2-23
ip dhcp retry	2-24
ip dhcp server filter	2-25
ip dhcp-relay option82	2-25
ip dhcp-relay option82 remote-id-type	2-25
ip dhcp-relay server	2-26
ip dns host	2-27
ip dns server	2-27
ip filter-ip	2-27
ip http-server	2-28
ip http-server auto-logout	2-28
ip igmp static-group	2-29
ip igmp-snooping	2-29
ip igmp-snooping enhanced	2-30
ip igmp-snooping querier vlan	2-30
ip igmp-snooping querier vlan vlan-id v3	2-31
ip igmp-snooping query-interval	2-31
ip igmp-snooping vlan	2-32

ip max-login-users	2-33
ip moxa-encrypted-service	2-33
ip moxa-service	2-33
ip name-server	2-34
ip ospf area	2-34
ip ospf auth	2-35
ip ospf cost	2-35
ip ospf dead-interval	2-36
ip ospf hello-interval	2-36
ip ospf priority	2-37
ip proxy-arp	2-37
ip route	2-37
ip snmp-agent	2-38
ipv6 address	2-38
line-swap-fast-recovery	2-39
lldp enable	2-39
lldp timer	2-40
logging	2-40
logging-capacity	2-41
Logging-capacity email-warning	2-41
logging-capacity over-size-action	2-41
logging-capacity snmp-trap-warning	2-42
login mode	2-42
Loop protection	2-43
mac-address-table aging-time	2-43
Management-Interface	2-44
mcast-filter	2-44
media cable-mode	2-45
modbus	2-45
monitor	2-46
name	2-46
network	2-47
ntp refresh-time	2-48
ntp remote-server	2-48
ntp server	2-48
password-policy complexity-check	2-49
Password-policy minimum-length	2-49
permit	2-50
ping	2-50
port-security	2-51
profinetio	2-51
ptp announce-receipt-timeout	2-51
ptp arb-time	2-52
ptp clockclass	2-52
ptp domain-number	2-53
ptp enable	2-53
ptp leap59	2-53
ptp leap61	2-54
ptp log-sync-interval	2-54
ptp log-announce-interval	2-55
ptp log-min-delay-req-interval	2-55
ptp log-min-pdelay-req-interval	2-56
ptp mode	2-56
ptp preferred-master	2-57
ptp priority1	2-57
ptp priority2	2-57
ptp timescale	2-58
ptp transport	2-58
ptp utc-offset	2-59
ptp utc-offset-valid	2-59
qos highest-priority	2-59
qos default-cos	2-60
qos inspect	2-60
qos mapping	2-61
qos mode	2-62
quit	2-62
rate-limit	2-62
redistribute	2-63
redundancy	2-64
redundancy mode	2-64
relay-warning config relay	2-65
relay-warning event	2-65

relay-warning event	2-66
relay-warning override	2-67
reload	2-67
router ospf	2-68
router rip	2-68
router vrrp	2-68
save config	2-69
show acl	2-69
show auth tacacs+	2-70
show clock	2-70
show dot1x	2-71
show dot1x local-userdb	2-72
show eip	2-72
show PROFINETIO	2-72
show email-warning config	2-73
show gmrp	2-74
show gvrp	2-74
show interfaces acl	2-75
show interfaces counters	2-75
show interfaces ethernet	2-76
show interfaces filter-ip	2-77
show interfaces mgmt	2-78
show interfaces mgmt access-ip	2-78
show interfaces rate-limit	2-79
show interfaces trunk	2-79
show interfaces vlan	2-80
show interfaces mgmt trusted-access	2-81
show ip auto-assign	2-81
show ip dhcp filter	2-81
show ip dhcp-relay config	2-82
show ip http-server status	2-83
show ip igmp	2-83
show ip ospf	2-84
show ip ospf database	2-85
show ip ospf interface	2-85
show ip ospf neighbor	2-86
show ip rip	2-86
show ip route	2-87
show ip vrrp	2-87
show lldp	2-88
show logging	2-88
show mac-address-table	2-89
show mac-address-table aging-time	2-90
show mcast-filter	2-90
show modbus	2-91
show port monitor	2-91
show port-security	2-91
show qos	2-92
show redundancy mst configure	2-93
show redundancy mst instance	2-94
show redundancy spanning-tree	2-94
show redundancy turbo-chain	2-95
show redundancy turbo-ring-v1	2-96
show redundancy turbo-ring-v2	2-96
show relay-warning	2-97
show running-config	2-98
show startup-config	2-99
show snmp	2-100
show storm-control	2-101
show system	2-101
show users	2-102
show vlan	2-102
show vlan config	2-102
shutdown	2-103
snmp-server community	2-104
snmp-server contact	2-104
snmp-server description	2-105
snmp-server host	2-105
snmp-server location	2-106
snmp-server trap-mode	2-106
snmp-server user	2-107
snmp-server version	2-107

spanning-tree forward-delay	2-108
spanning-tree hello-time	2-108
spanning-tree max-age	2-109
spanning-tree mst cist cost	2-109
spanning-tree mst cist port-priority	2-110
spanning-tree mst cist priority	2-110
spanning-tree mst edge-port	2-111
spanning-tree mst enable	2-111
spanning-tree mst forward-time	2-112
spanning-tree mst hello-time	2-112
spanning-tree mst instance	2-113
spanning-tree mst instance cost	2-113
spanning-tree mst instance port-priority	2-114
spanning-tree mst instance priority	2-114
spanning-tree mst max-age	2-115
spanning-tree mst max-hops	2-115
spanning-tree mst name	2-116
spanning-tree mst revision	2-116
spanning-tree priority	2-117
spanning-tree	2-117
spanning-tree cost	2-118
spanning-tree edge-port	2-118
spanning-tree priority	2-119
speed-duplex	2-119
sshkeygen	2-120
sslcertgen	2-120
storm-control	2-120
switchport access vlan	2-121
switchport hybrid fixed vlan add	2-121
switchport hybrid forbidden vlan add	2-122
switchport hybrid forbidden vlan remove	2-122
switchport hybrid native vlan	2-123
switchport pvlan	2-123
switchport trunk fixed vlan add	2-124
switchport trunk fixed vlan remove	2-124
switchport trunk forbidden vlan add	2-125
switchport trunk forbidden vlan remove	2-125
switchport trunk native vlan	2-126
trunk-group	2-126
trunk-mode	2-127
turbo-chain	2-127
turbo-ring-v1	2-128
turbo-ring-v1 coupling	2-128
turbo-ring-v1 master	2-129
turbo-ring-v2	2-129
turbo-ring-v2 coupling backup	2-130
turbo-ring-v2 coupling dual-homing	2-131
turbo-ring-v2 coupling primary	2-131
turbo-ring-v2 master	2-132
trusted-access	2-133
username	2-133
version	2-134
vlan create	2-134
vlan mode	2-135
vrrp	2-135
vrrp preempt	2-136
vrrp priority	2-136
warning-notification system-event	2-137
warning-notification port-event	2-138

Command Modes

CLI (Command Line Interface)

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

Configuring a Switch to CLI Mode

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

1. Select **Basic Settings**.

```

EDS-408A series  V3.0 build 11062110
-----
1.Basic Settings      - Basic settings for network and system parameter.
2.SNMP Settings      - The settings for SNMP.
3.Comm. Redundancy    - Establish Ethernet communication redundant path.
4.Traffic Prioritization- Prioritize Ethernet traffic to help determinism.
5.Virtual LAN         - Set up a VLAN by IEEE802.1Q VLAN or Port-based VLAN.
6.Multicast Filtering - Enable the multicast filtering capability.
7.Bandwidth Management - Restrict unpredictable network traffic.
8.Auto Warning        - Warning email and/or relay output by events.
9.Line Swap           - Fast recovery after moving devices to different ports.
a.Set Device IP       - Assign IP addresses to connected devices.
b.Diagnosis           - Ping command and the settings for Mirror port, LLDP.
c.Monitor             - Monitor a port and network status.
d.MAC Address Table   - The complete table of Ethernet MAC Address List.
e.System log          - The settings for Syslog and Event log.
f.Exit               - Exit
                    - Use the up/down arrow keys to select a category,
                    and then press Enter to select. -

```

2. Select **Login mode**.

```

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

Basic Settings

```

- Press **y** to activate.

```

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

Current login mode: Menu

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

```

- Now log in to access CLI display mode.

```

login as:

```

After changing to CLI mode, CLI mode will be the default setting for the next reboot.

Basic Operation

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```


Useful Interactive “Help” Features

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

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

Understanding All Commands

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

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

access-ip

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

Commands

access-ip [*ip-address netmask*]

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

Syntax	access-ip	Enable the accessible IP list
Description	<i>ip-address</i>	IP address
	<i>netmask</i>	IP netmask
Defaults	The feature is disabled by default.	
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	This feature will take effect when the access-ip command is executed.	
Examples	<pre>MOXA(config)# interface mgmt MOXA(config-vlan)# access-ip 10.10.10.10 255.255.255.0 <IPV4ADDR:ipaddr> - IP address <IPV4ADDR:netmask> - IP netmask MOXA (config-vlan)# access-ip</pre>	
Error messages	IP or netmask invalid	
	Access IP list full	
Related commands	show interface mgmt access-ip	

acl id

NOTE The command is supported only in Layer 3 switches

Use **acl id** 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	acl	Configure access control list
Description	<i>id</i>	The access list ID
	in	Inbound traffic
	out	Outbound traffic
	Defaults	N/A

Command Modes	Interface configuration
Usage Guidelines	N/A
Examples	MOXA(config-if)# acl 10 in MOXA(config-if)# no acl 10
Error messages	Invalid ID!

acl id ip-base

NOTE The command is supported only in Layer 3 switches

Use the **acl id ip-base** global configuration commands on the switch to create an IP-base ACL and add rules. Use the **no** form of this command to remove the rule.

Commands

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

acl id ip-base name name_str

no acl id

no acl id rule ruleindex

Syntax Description	acl	Configure access control list
	<i>id</i>	Set ACL ID
	ip-base	IP-base ACL
	permit	Forward packets
	deny	Drop packets
	<i>srcip</i>	Set source IP address and subnet mask. Ex: 192.168.1.1/255.255.255.0 or 192.168.127.1
	<i>dstip</i>	Set destination IP address and subnet mask. Ex: 192.168.1.1/255.255.255.0 or 192.168.127.1
	<i>protocol</i>	Set protocol number, Ex: ICMP, TCP, UDP, etc.
	<i>port</i>	Set TCP/UDP port number
	<i>name_str</i>	ACL name
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	The ACL ID is 1 ~ 16.	
Examples	MOXA(config)# acl 8 ip-base permit 172.3.1.1/255.255.255.0 201.16.9.7/255.255.0.0 6 23	
Error messages	Invalid ID!	
	This ID is used by MAC-base ACL!	
	Invalid IP address format!	
	Invalid subnet mask format!	

acl id mac-base

NOTE The command is supported only in Layer 3 switches

Use the **acl id mac-base** global configuration commands on the switch to create an MAC-base ACL and add rules. Use the **no** form of this command to remove the rule.

Commands

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

acl id mac-base name name_str

no acl id

no acl id rule ruleindex

Syntax Description	Acl	Configure access control list
	<i>Id</i>	Set ACL ID
	mac-base	MAC-base ACL
	permit	Forward packets
	Deny	Drop packets
	<i>srcmac</i>	Set source MAC address and MAC mask. Ex: 00:90:E8:1D:24:23/FF:FF:FF:FF:00:00 or 00:90:E8:1D:24:23
	<i>dstmac</i>	Set destination IP address and subnet mask. Ex: 192.168.1.1/255.255.255.0 or 192.168.127.1
	<i>ethertype</i>	Set ether type
	<i>Vid</i>	Set VLAN ID
	<i>name_str</i>	ACL name
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	The ACL ID is 1 ~ 100.	
Examples	MOXA(config)# acl 10 mac-base deny 00:11:22:33:44:55/ff:ff:ff:ff:00:00:00 aa:bb:cc:dd:ee:ff/ff:ff:ff:ff:00:00:00:00 2048 10	
Error messages	Invalid ID!	
	This ID is used by IP-base ACL!	
	Invalid MAC address format!	
	Invalid MAC mask format!	

area

Use the **area** command in Router configuration mode as OSPF to add an OSPF area and configure its type. Use the **no** form of this command to remove the area.

Commands

area area-id [{ stub | nssa } metric value]

no area area-id

Syntax Description	area	Configure OSPF Area
	<i>area-id</i>	OSPF Area id, format is ip address
	stub	Configure OSPF area type to stub
	nssa	Configure OSPF area type to NSSA
	metric	Configure OSPF area metric
	<i>value</i>	Metric value (1 to 65535)
Defaults	N/A	
Command Modes	Router configuration mode as OSPF	
Usage Guidelines	Metric value: 1 to 65535	
Examples	MOXA(config-ospf)# area 2.2.2.2 MOXA(config-ospf)# area 2.2.2.2 stub metric 4 MOXA(config-ospf)# area 2.2.2.2 nssa metric 4	
Error messages	Configuration Error!!	
	Metric value error (1 to 65535)!!	

Related commands	show ip ospf
------------------	--------------

area range

To consolidate and summarize routes at an area boundary, use the **area range** command in router configuration mode. To disable this function, use the **no** form of this command.

Commands

area *area-id* **range** *ip-address netmask*

no area *area-id* **range** *ip-address netmask*

Commands	area	Configure OSPF Area
	<i>area-id</i>	OSPF Area id, format is ip address
	range	Specify an address range for route aggregation
	<i>ip-address</i>	E.g., 11.22.33.44
	<i>netmask</i>	E.g., 255.255.255.0
Defaults	N/A	
Command Modes	Router configuration mode as OSPF	
Usage Guidelines	N/A	
Examples	MOXA(config-ospf)# area 1.1.1.1 range 192.0.0.0 255.0.0.0	
Error messages	Configuration Error!!	
	IP Prefix format Error!!	
	Netmask format Error!!	
	IP format Error!!	
Related commands	show ip ospf	

area virtual-link

Use the **area virtual-link** command in Router configuration mode as OSPF to add an OSPF virtual link. Use the **no** form of this command to remove the specified OSPF virtual link.

Commands

area *area-id* **virtual-link** *router-id*

no area *area-id* **virtual-link** *router-id*

Syntax Description	area	Configure OSPF Area
	<i>area-id</i>	OSPF Area id
	virtual-link	Establish a virtual link
	<i>router-id</i>	Neighbor Router ID
Defaults	N/A	
Command Modes	Router configuration mode as OSPF	
Usage Guidelines	N/A	
Examples	MOXA(config-ospf)# area 1.1.1.1 virtual-link 0.0.0.0	
Error messages	Configuration Error!!	
Related commands	show ip ospf	

auth tacacs+

Use the **auth tacacs+** global configuration command on the switch to enable TACACS+ authentication. Use the **no** form of this command to return to the default setting.

Commands

auth tacacs+

no auth tacacs+

Syntax	auth	Configure authentication mechanism
Description	tacacs+	TACACS+ authentication
Defaults	The default setting is disabled.	
Command	Global configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# auth tacacs+	
Error messages	N/A	
Related commands	show auth tacacs+	

auth tacacs+ auth-type

Use the **auth tacacs+ auth-type** global configuration command on the switch to specify the type of TACACS+ authentication. Use the **no** form of this command to return to the default setting.

Commands

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

no auth tacacs+ auth-type

Syntax	auth	Configure authentication mechanism
Description	tacacs+	TACACS+ authentication
	auth-type	Specify the authentication type
	ascii	Normal ASCII code authentication
	pap	Password Authentication Protocol
	chap	Challenge-handshake authentication protocol
	arap	AppleTalk Remote Access Protocol
	mschap	Microsoft Challenge-handshake authentication protocol
Defaults	Default type is ASCII code authentication	
Command	Global configuration	
Modes		
Usage	To enable the TACACS+ authentication, the command "auth tacacs+" must be executed first.	
Guidelines		
Examples	MOXA(config)# auth tacacs+ auth-type ascii - Normal ASCII code authentication pap - Password Authentication Protocol chap - Challenge-handshake authentication protocol arap - AppleTalk Remote Access Protocol mschap - Microsoft Challenge-handshake authentication protocol	
Error messages	N/A	
Related commands	auth tacacs+ show auth tacacs+	

auth tacacs+ server

Use the **auth tacacs+ server** global configuration command on the switch to set the TACACS+ authentication server address and the shared key information. Use the **no** form of this command to remove the settings.

Commands

auth tacacs+ server *server-address* **shared-key** *key* [**timeout** *seconds*]

no auth tacacs+ server

Syntax Description	auth	Configure authentication mechanism
	tacacs+	TACACS+ authentication
	server	TACACS+ authentication server
	<i>server-address</i>	Authentication server address
	shared-key	Configure the shared key
	<i>key</i>	Key string, max 15 characters
	timeout	Configure server timeout
	<i>seconds</i>	1 to 255 sec.
Defaults	Default timeout is 30 seconds Default tacacs+ server port is 49	
Command Modes	Global configuration	
Usage Guidelines	To enable the TACACS+ authentication, the command "auth tacacs+" must be executed first.	
Examples	<pre>MOXA(config)# auth tacacs+ server <STRING:auth_server> - Authentication server address MOXA(config)# auth tacacs+ server tacacs.server.moxa.com shared-key - Configure the shared key MOXA(config)# auth tacacs+ server tacacs.server.moxa.com shared-key <STRING:key> - Key string, max 15 characters MOXA(config)# auth tacacs+ server tacacs.server.moxa.com shared-key 1234 <LF> timeout - Configure server timeout MOXA(config)# auth tacacs+ server tacacs.server.moxa.com shared-key 1234 timeout <UINT:seconds> - 1 to 255 sec. MOXA(config)# auth tacacs+ server tacacs.server.moxa.com shared-key 1234 timeout 200</pre>	
Error messages	Timeout value must be in the range from 1 to 255 seconds	
	Invalid IP protocol port	
Related commands	auth tacacs+ show auth tacacs+	

auto-backup

Use **auto-backup** to enable Auto load system configurations when the system boots up. To disable it, use the **no** form of this command.

Commands

auto-backup

no auto-backup

Syntax Description	auto-backup	Use auto backup configurator to restore configuration
Defaults	Auto-backup configuration is enabled by default.	
Command Modes	Global configuration	

Usage Guidelines	N/A
Examples	<pre>MOXA# configure terminal MOXA(config)# auto-backup MOXA(config)# no au auto-backup - Deactive auto-backup configurator MOXA(config)# no auto-backup</pre>

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	bind	Bind VLAN as management VLAN
Description	vlan	VLAN parameters
	<i>VLAN-ID</i>	1 to 4094
Defaults	Default management VLAN ID is 1	
Command Modes	VLAN configuration mode as management VLAN	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config)# interface mgmt MOXA(config-vlan)# bind vlan <UINT:vlanid> - 1 to 4094</pre>	
Error messages	L3 interface cannot be assigned as management interface	
	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	cfg-encrypt	Configuration File Encryption
Description	<i>password</i>	Password
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA# configure terminal MOXA(config)# cfg-encrypt 12345</pre>	
Error messages	Configuration Encrypt password error !!!	

clear counters

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

Commands

clear counters

Syntax	clear	Clear information
Description	counters	Clear statistic counters
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# clear counters - Clear statistic 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	clear	Clear information
Description	logging	System event logs
	event-log	System event logs
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# clear logging - System event logs MOXA# clear logging event-log - System event logs	
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	clock	Configure time-of-day clock
Description	set	Adjust the clock
	<i>hh:mm:ss</i>	hh:mm:ss
	<i>month</i>	1 to 12

	<i>day</i>	1 to 31
	<i>year</i>	2000 to 2037
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# clock set 11:11:11 1 1 2010	
Error messages	Illegal parameters!	
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*

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
	<i>month</i>	From 'Jan', 'January' or '1' to 'Dec', 'December', or '12'
	<i>week</i>	From '1st' or '1' to 'Last' or '6'
	<i>day</i>	From 'Sun', 'Sunday' or '1' to 'Sat', 'Saturday' or '7'
	<i>hour</i>	0 to 23
	offset	Summer time offset
	<i>offset-hour</i>	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.	
Examples	MOXA(config)# clock timezone gmt -4	
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!	
Related commands	Hour offset is out of range.	
	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*

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

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

Syntax Description	copy	Copy from one file to another
	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
	<i>tftp-address</i>	TFTP address. E.g., tftp://192.168.127.1/abc.txt
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# copy tftp device-firmware - System firmware running-config - Current running configuration of system MOXA# copy tftp running-config Address or name of remote host [192.168.127.1]? 192.168.127.95 Source file name ? cli.ini Save import config to flash ? [Y/n] Saving configuration ...Success</pre>	
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 !!!

dot1x auth

Use the **dot1x auth** global configuration command to set dot1x authentication type and relative configurations.

Commands

dot1x auth local

dot1x auth radius server *server* **port** *port* **shared-key** *string*

dot1x auth radius-local server *server* **port** *port* **shared-key** *string*

Syntax Description	dot1x	802.1x setting
	auth	802.1x auth type
	local	802.1x authentication uses local database
	radius	802.1x authentication uses radius server
	radius-local	802.1x authentication uses both local and radius server
	server	802.1x radius server name/ip
	<i>server</i>	802.1x radius server name/ip string
	port	802.1x radius server port
	<i>port</i>	802.1x radius server port (default 1812)
	shared-key	802.1x Shared Key
<i>string</i>	Shared Key string	
Defaults	802.1x local authentication	
Command	Global configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# dot1x auth local MOXA(config)# dot1x auth radius server moxanet port 1812 shared-key moxa MOXA(config)# dot1x auth radius-local server moxanet port 1812 shared-key moxa	
Error messages	Local Database is Full !!!	
	Invalid User Name !!!	
	Invalid User Password !!!	
	Invalid User Description !!!	
Related commands	show dot1x	

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	dot1x	802.1x setting
Description	auth	802.1x port authentication enable/disable
Defaults	802.1x port authentication default disable	
Command	interface configuration	
Modes		

Usage	N/A
Guidelines	
Examples	MOXA(config)# interface ethernet 1/1 MOXA(config-if)# dot1x auth MOXA(config-if)# no dot1x auth

dot1x local-userdb

To add 802.1x local user database, use the **dot1x local-userdb** global configuration command. To remove the user database, use the **no** form of this command.

Commands

dot1x local-userdb *username user password password [desc description]*

no dot1x local-userdb *username user*

Syntax	dot1x	802.1x setting
Description	local-userdb	Local user settings
	username	Local user
	<i>user</i>	Local user name (max. 30 characters)
	password	Local user password
	<i>password</i>	Local user password (max. 16 characters)
	desc	User description
	<i>description</i>	Description string
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# dot1x local-userdb username moxa password moxanet MOXA(config)# no dot1x local-userdb username moxa	
Error messages	Local Database is Full !!!	
	Invalid User Name !!!	
	Invalid User Password !!!	
	Invalid User Description !!!	
Related commands	show dot1x local-userdb	

dot1x reauth

Use the **dot1x reauth** global configuration command on the switch to globally enable periodic re-authentication of the client. Use the **no** form of this command to return to the default setting.

Commands

dot1x reauth [*period period*]

no dot1x reauth [*period period*]

Syntax	dot1x	802.1x setting
Description	reauth	802.1x reauth enable
	period	802.1x reauth period
	<i>period</i>	60 to 65535 seconds
	Defaults	802.1x reauth default enable and period 3600 seconds
Command Modes	Global configuration	

Usage Guidelines	N/A
Examples	MOXA(config)# dot1x reauth period 3600 MOXA(config)# no dot1x reauth
Error messages	Invalid Re-Auth Period!!! Must not be smaller than 65535 or greater than 60
Related commands	show dot1x

dot1x reauth

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

Commands

dot1x reauth

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

dip-switch

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

Commands

dip-switch

Syntax	disable	Disable HW dip-switch function.
Description	enable	Enable HW dip-switch function.
	mode turbo-ring-v1	set dip-switch function as turbo-ring-v1.
	mode turbo-ring-v2	set dip-switch function 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(config)# dip-switch disable MOXA(config-if)# dip-switch mode turbo-ring-v1	

eip

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

Commands

eip
no eip

Syntax	eip	Enable Ethernet/IP
Description		
Defaults	Default is disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# eip	
Error messages	N/A	
Related commands	show eip	

email-warning account

Use **email-warning account** to configure the account and the password to log in to the remote Mail Server. To clear the setting, use the **no** form of this command.

Commands

email-warning account *name password*

no email-warning account

Syntax Description	email-warning	Email warning setting
	account	Email account on server
	<i>name</i>	User name
	<i>password</i>	User password
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# email-warning account test1 1234 MOXA(config)# email-warning account test1	
Error messages	Length of SMTP User name is too long !!!	
	Invalid User name	
	Length of password is too long!!!	
Related commands	show email-warning	

email-warning event

Use the **email-warning event** global configuration command to enable the system warning events 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	Global configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	<pre> 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 MOXA(config)# exit MOXA# show email-warning config Mail Server and Email Setup SMTP Server IP/Name : msl.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 --More-- </pre>	
Error messages	N/A	
Related commands	show email-warning	

email-warning event

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
	<i>rxThreshold</i>	0 to 100
	<i>duration</i>	1 to 300
Defaults	All port events are disabled by default.	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	<pre> 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 : msl.hinet.net SMTP Port : 25 Account Name : test1 Account Password : 1234 1st email address: test2@moxa.com 2nd email address : 3rd email address: test3@hinnet.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 </pre>	
Error messages	Threshold should be between 0 and 100	
	Duration should be between 1 and 300	
Related commands	show email-warning	

email-warning mail-address

Use **email-warning mail-address** to configure the email address(es) to which warning messages will be sent. To clear the setting, use **no** form of this command.

Commands

email-warning mail-address *mailIndex* *mailAddress*

no email-warning mail-address *mailIndex*

Syntax Description	email-warning	Email warning setting
	mail-address	Target email address
	<i>mailIndex</i>	1 to 4
	<i>mailAddress</i>	Email address
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config)# email-warning mail-address <UINT:mailIdx> - 1 to 4 MOXA(config)# email-warning mail-address 1 test2@moxa.com MOXA(config)# email-warning mail-address 3 test3@hinet.net</pre>	
Error messages	Index should be between 1 and 4	
	Length of email address is too long !!!	
	Invalid Email address format	
Related commands	show email-warning	

email-warning send test email

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

Commands

switch(config)# email-warning send test email

Syntax Description	email-warning	Email warning setting
	send	Send test email
	test	Test email
	email	Test email address
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	The test email will be sent to the mail address that " email-warning mail-address " command configured.	
Examples	<pre>MOXA(config)# email-warning server 192.168.127.95 <LF> <UINT:smtpPort> - SMTP Port MOXA(config)# email-warning server 192.168.127.95 25 MOXA(config)# email-warning account admin 1234 MOXA(config)# email-warning mail-address 1 <STRING:mailAddress> - Email address MOXA(config)# email-warning mail-address 1 alancc.wu@moxa.com MOXA(config)# email-warning send test email Sending test email ...</pre>	

	You may check if your dedicated email addresses have received this email! MOXA(config)#
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 server email-warning account email-warning mail-address

email-warning server

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

Commands

email-warning server *smtpServerIp* [*smtpPort*]

no email-warning server

Syntax	email-warning	Email warning setting
Description	server	Email Server
	<i>smtpServerIp</i>	Email Server name/address
	<i>smtpPort</i>	SMTP Port, 1 to 65535
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# email-warning server mail.hinet.net 25 MOXA(config)# email-warning server ms1.hinet.net	
Error messages	Length of server address is too long !!!	
	Invalid SMTP server name/address	
	Invalid Mail Server Port, Range(1 to 65535) !!!	
Related commands	show email-warning	

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	N/A	
Usage Guidelines	N/A	
Examples	MOXA(config)# exit MOXA #	
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	flowcontrol	Configure flowcontrol
Description		
Defaults	The default is disable	
Command	Interface configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# interface ethernet 1/1 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	

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

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	gvrp	Enable/Disable GVRP
Description		
Defaults	The feature is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# gvrp gvrp - Enable 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 *name*

no hostname

Syntax	hostname	Set system's network name (maximum 30 characters)
Description	<i>name</i>	Switch name string
Defaults	Name is the default switch name with the serial number	
Command Modes	Global configuration	
Usage Guidelines	Maximum string tokens are 5. Maximum switch name length is 30 characters.	
Examples	MOXA(config)# hostname MOXA Ethernet Switch PT 7828 MOXA(config)# exit MOXA# show system System Information System Name : MOXA Ethernet Switch PT 7828 System Location : Switch Location System Description : MOXA MOXA Maintainer Information : MAC Address : 00:90:E8:1D:24:36 System Uptime : 0d0h36m57s	
Error messages	Length of switch hostname is too long	
Related commands	show system	

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	interface	Select an interface to configure
Description	mgmt	Configure management VLAN
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config)# interface mgmt - Configure management VLAN MOXA(config)# interface mgmt MOXA(config-vlan)#</pre>	
Error messages	N/A	
Related commands	show interfaces mgmt	

interface vlan

Use the **interface vlan** global configuration command on the switch to create or access a dynamic switch virtual interface (SVI) and to enter interface configuration mode. Use the **no** form of this command to delete an SVI.

Commands

interface vlan *vlan-id*

no interface vlan *vlan-id*

Syntax	interface	Select an interface to configure
Description	vlan	Configure L3 interface
	<i>vlan-id</i>	Configure L3 interface vlan id
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	Management vlan id cannot be same as interface vlan id.	
Examples	<pre>MOXA(config)# interface vlan 2 <UINT:vlanid> - Configure L3 interface vlan id</pre>	
Error messages	interface vlan 2 is not exist	
	mgmt vlan id cannot be same as interface vlan id!!	
	vlan interface full	
Related commands	show interfaces vlan	

ip address

Use the **ip address** VLAN configuration command on the switch to configure the address of a Layer 3 interface.

Commands

ip address *ip-address netmask*

Syntax Description	ip	Configure L3 interface ip
	address	Interface ip setting
	<i>ip-address</i>	IP address
	<i>netmask</i>	IP netmask
Defaults	N/A	
Command Modes	VLAN configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-vlan)# ip address 10.10.10.10 255.255.255.0 ip - Configure L3 interface ip	
Error messages	IP or netmask invalid	
	vlan 4097 is invalid!! should be range from 1 to 4094	
	vlan interface full	
	Interface VLAN is not allowed to modify!!	
Related commands	show interfaces vlan	

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	Congiuire IP address
	static	E.g., 11.22.33.44
	<i>ip-address</i>	IP address
	<i>netmask</i>	Subnet mask
	dhcp	Use DHCP to retrieve IP setting automatically
	bootp	Use BOOTP to retrieve IP setting automatically
Defaults	N/A	
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	N/A	
Examples	MOXA(config-vlan)# ip address static - Configure static IP dhcp - Use DHCP to retrieve IP setting automatically bootp - Use BOOTP to retrieve IP setting automatically	
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	ip	Configure IP paramters
Description	auto-assign	Automatic port IP assignment through DHCP/BootP/RARP
	<i>ipaddr</i>	E.g., 11.22.33.44
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(config-if)# ip auto-assign <IPV4ADDR:ipaddr> - E.g., 11.22.33.44	
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 default-gateway

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

Commands

ip default-gateway *ip-address*

no default-gateway

Syntax	ip	Configure IP paramters
Description	default-gateway	Configure default gateway address
	<i>ip-address</i>	IP address
Defaults	N/A	
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	N/A	
Examples	MOXA(config-vlan)# ip default-gateway 192.168.1.1	
Error messages	Warning! IP and gateway are not in the same subnet	
Related commands	show interfaces mgmt	

ip dhcp client filter

Use the **ip dhcp client filter** port-if configuration command on the switch to enable DHCP client filter on an interface. Use the **no** form of this command to make the given interface DHCP client filter disabled .

Commands

ip dhcp client filter

no ip dhcp client filter

Syntax Description	ip	Global IP configuration subcommands
	dhcp	DHCP
	client	DHCP client
	filter	DHCP client filter
Defaults	All interfaces are DHCP client filter disabled	
Command Modes	Port-if configuration	
Usage Guidelines	N/A	
Examples	MOXA# configure terminal MOXA# interface ethernet 1/2 MOXA(config-if)# ip dhcp client filter	
Error messages	N/A	
Related commands	show ip dhcp filter	

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
	<i>times</i>	0 - 65535 times, 0 means retry forever
	Period	Retry period
	<i>seconds</i>	1 - 30 seconds
Defaults	Default retry times = 0, retry period=1	
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	N/A	
Examples	MOXA(config-vlan)# ip dhcp retry 500 period 30 MOXA# show interfaces mgmt IPv4 Management VLAN id : 1 IP configuration : DHCP IP address : 192.168.127.253 Subnet mask : 255.255.255.0 Default gateway : 0.0.0.0 DNS server : Dhcp Retry Periods : 30 seconds Dhcp Retry Times : 500	
Error messages	Illegal parameter!	
Related commands	show interface mgmt	

ip dhcp server filter

Use the **ip dhcp server filter port-if** configuration command on the switch to enable DHCP server filter on an interface. Use the **no** form of this command to make the given interface DHCP server filter disabled .

Commands

ip dhcp server filter

no ip dhcp server filter

Syntax	ip	Global IP configuration subcommands
Description	dhcp	DHCP
	server	DHCP server
	filter	DHCP server filter
Defaults	All interfaces are DHCP server filter disabled	
Command	Port-if configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA# configure terminal MOXA# interface ethernet 1/2 MOXA(config-if)# ip dhcp server filter	
Error messages	N/A	
Related commands	show ip dhcp filter	

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	ip	Configure IP parameters
Description	dhcp-relay	Configure DHCP relay agent parameter
	option82	Option 82
Defaults	Default is disabled.	
Command	Global configuration / Interface configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# ip dhcp-relay option82 ? <LF> remote-id-type - Remote Id type man-id - Manual remote ID MOXA(config)# ip dhcp-relay option82	

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

Commands**ip dhcp-relay option82 remote-id-type** *remoteIdType***ip dhcp-relay option82 man-id** *manualld*

Syntax	ip	Global IP configuration subcommands
Description	dhcp-relay	Configure DHCP relay agent parameter
	option82	Option 82
	remote-id-type	Remote Id type
	<i>remoteIdType</i>	ip mac client-id other
	man-id	Manual remote ID
	<i>manualld</i>	Manual remote ID, maximum 15 characters
Defaults	DHCP-relay option82 is disable in factory default. Default remote-id-type is IP.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	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 MOXA(config)# ip dhcp-relay option82 man-id abcdef	
Error messages	Invalid remote ID type	
	Manual Id is over 15 characters	

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	ip	Global IP configuration subcommands
Description	dhcp-relay	Configure DHCP relay agent parameter
	server	DHCP server IP address
	<i>serverIndex</i>	DHCP server address index, 1 to 4
	<i>serverAddr</i>	DHCP server IP address
	Defaults	N/A
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	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 dns host

Use the **ip dns host** to configuration DNS server hostname and IP address. To remove the DNS server hostname and IP addresss19, use the **no** form of the this command.

Commands

ip dns host

no ip dns host name

no ip dns host ip

Syntax	ip	Global IP configuration subcommands
Description	dns server	Enable DNS server
Default	Disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config) # ip dns host consist1.car2.device1 192.168.127.100 MOXA(config) # no ip dns host name consist1.car2.device1 MOXA(config) # no ip dns host ip 192.168.127.10	
Error messages	N/A	
Related commands	ip dns server	

ip dns server

Use the **ip dns server** global configuration command to enable DNS server. To Disable, use the **no** form of this command.

Commands

ip dns server

no ip dns server

Syntax	ip	Global IP configuration subcommands
Description	dns server	Enable DNS server
Default	Disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config) # ip dns server	
Error messages	N/A	
Related commands	ip dns host	

ip filter-ip

Use the **ip filter-ip** interface configuration command on the switch to add the IP filtering address entries. Use the **no** form of this command to delete the filtering entries.

Commands

ip filter-ip allowed ip-address

no ip filter-ip allowed ip-address

Syntax	ip	Configure IP paramters
--------	-----------	------------------------

Description	filter-ip	IP filter
	allowed	Configured traffic allowed from specified IP
	<i>ip-address</i>	E.g., 11.22.33.44
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# ip filter-ip allowed 192.168.127.1 <LF>	
Error messages	Not a unicast IP	
	Allowed only 8 filters at most	
Related commands	show interfaces filter-ip	

ip http-server

Use **ip http-server** global configuration commands on the switch to enable HTTP/HTTPS service. Use the **no** form of this command to disable HTTP/HTTPS service.

Commands

ip http-server

ip http-server secure

no ip http-sever

Syntax	ip	Global IP configuration subcommands
Description	http-server	Enable HTTP/HTTPS web service
	secure	HTTPS support only
Defaults	HTTP service is enabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ip http-server auto-logout - Web auto-logout timer <LF> secure - HTTPS support only MOXA(config)# ip http-server secure MOXA(config)# ip http-server MOXA(config)# no ip http-server	
Error messages	N/A	
Related commands	show ip http-server	

ip http-server auto-logout

Use **ip http-server auto-logout** global configuration commands on the switch to enable the auto-logout for the HTTP/HTTPS connections with specified seconds. Use the **no** form of this command to disable it.

Commands

ip http-server auto-logout *seconds*

Syntax	ip	Global IP configuration subcommands
Description	http-server	Enable HTTP/HTTPS web service

	auto-logout	Web auto-logout timer
	<i>seconds</i>	0 for disable, or 60 to 86400 seconds
Defaults	Auto-logout is disabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ip http-server auto-logout 120	
Error messages	Switch Web auto-logout interval should be 0(disable) or 60 to 86400s !!!	
Related commands	show ip http-server	

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
	<i>Mac-address</i>	MAC address XX:XX:XX:XX:XX:XX
	Interface	Binding ports
	<i>Module/port</i>	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(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	ip	Global IP configuration subcommands
--------	-----------	-------------------------------------

Description	igmp-snooping	IGMP snooping
Defaults	IGMP snooping is globally disable	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	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 enhanced

Use the **ip igmp-snooping enhanced** global configuration command on the switch to enable the enhanced mode. Use the **no** form of this command to disable the enhanced mode.

Commands

ip igmp-snooping enhanced

no ip igmp-snooping enhanced

Syntax	ip	Global IP configuration subcommands
Description	igmp-snooping	IGMP snooping
	enhanced	IGMP snooping enhanced mode
Defaults	Enhanced mode is globally disabled on the switch	
Command Modes	Global configuration	
Usage Guidelines	The IGMP snooping function must be enabled first.	
Examples	MOXA(config)# ip igmp-snooping enhanced MOXA(config)# no ip igmp-snooping enhanced	
Error messages	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 query-interval show ip igmp	

ip igmp-snooping querier vlan

Use the **ip igmp-snooping querier** global configuration command to enable and configure the IGMP querier feature on a VLAN interface. Use the **no** form of this command to disable the IGMP querier feature.

Commands

ip igmp-snooping querier vlan *vlan-id*

no ip igmp-snooping querier vlan *vlan-id*

Syntax	ip	Global IP configuration subcommands
Description	igmp-snooping	IGMP snooping
	querier	IGMP snooping query enable

	vlan	VLAN parameters
	<i>vlan-id</i>	1 to 4094
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(config)# ip igmp-snooping querier vlan 1 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 querier vlan vlan-id v3

NOTE The command is supported only in Layer 3 switches

Use **the ip igmp-snooping querier** 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.

Syntax Description	ip	Global IP configuration subcommands
	igmp-snooping	IGMP snooping
	querier	IGMP snooping query enable
	vlan	VLAN parameters
	<i>vlan-id</i>	1 ~ 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(config)# ip igmp-snooping querier vlan 1 v3	
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 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
	<i>interval</i>	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(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
	<i>vlan-id</i>	1 to 4094
	mrouter	IGMP snooping query port enable
	<i>Module/port</i>	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(config)# ip igmp-snooping vlan 1 mrouter 1/1 MOXA(config)# no ip igmp-snooping vlan 1 mrouter 1/1	
Error messages	Vlan entry not found!!!	
	IGMP Function is Disabled !!!	
	IGMP Function is only supported by 802.1Q VLAN mode!	
Related commands	ip igmp-snooping ip igmp-snooping querier ip igmp-snooping query-interval ip igmp-snooping enhanced show ip igmp	

ip max-login-users

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

Commands

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

no ip http-server max-login-users

no ip telnet max-login-users

Syntax	ip	Global IP configuration subcommands
Description	http-server	Enable Moxa Service
	telnet	Telnet support
	max-login-users	Configure HTTP/HTTPS maximum login users
	<i>Users</i>	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-encrypted-service

Use the **ip moxa-encrypted-service** global configuration command to enable Moxa Service (Encrypted). To Disable, use the **no** form of this command.

Commands

ip moxa-encrypted-service

no ip moxa-encrypted-service

Syntax	ip	Global IP configuration subcommands
Description	moxa-encrypted-service	Enable Moxa Service (Encrypted)
Default	Enable.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA# configuration terminal ip moxa-encrypted-service	

ip moxa-service

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

Commands**ip moxa-service****no ip moxa-service**

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

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	ip	Configure IP paramters
Description	name-server	Configure DNS server address
	ip-address	IP address
Defaults	N/A	
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	N/A	
Examples	MOXA(config-vlan)# ip name-server 192.168.1.1	
Error messages	Warning! IP and gateway are not in the same subnet	
Related commands	show interfaces mgmt	

ip ospf area

Use the **ip ospf area** command in VLAN configuration mode to bind the interfaces with an OSPF area. Use **no ip ospf** to unbind the OSPF area.

Commands**ip ospf area** area-id**no ip ospf**

Syntax	ip	Configure L3 interface ip
Description	ospf	Configure OSPF
	area	OSPF Area binding
	area-id	OSPF Area id
Defaults	This command is disabled by default.	
Command Modes	VLAN configuration	
Usage Guidelines	Auth Key lengths up to 8 characters MD5 Key ID range 1 to 255	

Examples	MOXA(config-vlan)# ip ospf auth md5 5 auth-key abcdabcd
Error messages	Auth Key lengths up to 8 characters MD5 Key ID range 1 to 255
Related commands	show ip ospf interface

ip ospf auth

Use the **ip ospf auth** command in VLAN configuration mode to specify the authentication type for an interface. Use the **no** form of this command to remove the authentication type for an interface.

Commands

ip ospf auth simple auth-key *key*

ip ospf auth md5 *key-id* **auth-key** *key*

no ip ospf auth

Syntax Description	ip	Configure L3 interface ip
	ospf	Configure OSPF
	auth	Configure OSPF authentication type
	simple	Configure OSPF authentication type to SIMPLE
	md5	Configure OSPF authentication type to MD5
	<i>key-id</i>	MD5 key id
	auth-key	Configure authentication key
	<i>key</i>	Key string
Defaults	This command is disabled by default.	
Command Modes	VLAN configuration	
Usage Guidelines	Auth Key lengths up to 8 characters MD5 Key ID range 1 to 255	
Examples	MOXA(config-vlan)# ip ospf auth md5 5 auth-key abcdabcd	
Error messages	Auth Key lengths up to 8 characters MD5 Key ID range 1 to 255	
Related commands	show ip ospf interface	

ip ospf cost

Use the **ip ospf cost** command in VLAN configuration mode to explicitly specify the cost of sending a packet on a VLAN interface. Use the **no** form of this command to return to the default.

Commands

ip ospf cost *cost*

no ip ospf cost

Syntax Description	ip	Configure L3 interface ip
	ospf	Configure OSPF
	cost	Configure OSPF Metric
	<i>cost</i>	Metric value (1 to 65535)
Defaults	Default cost is 1	
Command Modes	VLAN configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-vlan)# ip ospf cost 10	

Error messages	Metric Range 1 to 65535
Related commands	show ip ospf interface

ip ospf dead-interval

Use the **ip ospf dead-interval** command in interface configuration mode to set the interval at which hello packets must not be seen before neighbors declare the router down. Use the **no** form of this command to return to the default time.

Commands

ip ospf dead-interval *seconds*

no ip ospf dead-interval

Syntax Description	ip	Configure L3 interface ip
	ospf	Configure OSPF
	dead-interval	Configure OSPF dead interval
	<i>seconds</i>	Dead Interval Range 1 to 65535
Defaults	Default dead interval is 40 seconds	
Command Modes	VLAN configuration	
Usage Guidelines	Dead interval Range 1 to 65535	
Examples	MOXA(config-vlan)# ip ospf dead-interval 100	
Error messages	Dead Interval Range 1 to 65535	
Related commands	show ip ospf interface	

ip ospf hello-interval

Use the **ip ospf hello-interval** command in VLAN configuration mode to specify the interval between hello packets sent on the interface. Use the **no** form of this command to return to the default.

Commands

ip ospf hello-interval *seconds*

no ip ospf hello-interval

Syntax Description	ip	Configure L3 interface ip
	ospf	Configure OSPF
	hello-interval	Configure OSPF hello interval
	<i>seconds</i>	Hello Interval Range 1 to 65535
Defaults	Default interval is 10 seconds	
Command Modes	VLAN configuration	
Usage Guidelines	Hello Interval Range 1 to 65535	
Examples	MOXA(config-vlan)# ip ospf hello-interval 100	
Error messages	Hello Interval Range 1 to 65535	
Related commands	show ip ospf interface	

ip ospf priority

Use the **ip ospf priority** command in VLAN configuration mode to set the router priority for the determination of the designated router. Use the **no** form of this command to return to the default.

Commands

ip ospf priority *priority*

no ip ospf priority

Syntax	ip	Configure L3 interface ip
Description	ospf	Configure OSPF
	priority	Configure OSPF router priority
	<i>priority</i>	priority range (0 to 255)
Defaults	Default priority is 1	
Command	VLAN configuration	
Modes		
Usage	priority range 0 to 255	
Guidelines		
Examples	MOXA(config-vlan)# ip ospf priority 10	
Error messages	Priority Range 0 to 255	
Related commands	show ip ospf interface	

ip proxy-arp

Use the **ip proxy-arp** VLAN configuration command on the switch to enable Proxy ARP. Use the **no** form of this command to disable Proxy ARP.

Commands

ip proxy-arp

no ip proxy-arp

Syntax	ip	Configure L3 interface ip
Description	proxy-arp	Enable L3 interface proxy arp
Defaults	N/A	
Command	VLAN configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config-vlan)# ip proxy-arp proxy-arp - Enable L3 interface proxy arp	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094	
	Interface not exist! Please create interface and set ip and netmask first	
Related commands	show interfaces vlan	

ip route

Use the **ip route** command in global configuration mode to establish static routes. Use the **no** form of this command to remove the specified static routes.

Commands

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

no ip route *prefix mask next-hop*

Syntax	ip	Global IP configuration subcommands
Description	route	Static routing entry
	<i>prefix</i>	Address prefix
	<i>mask</i>	Subnet mask
	<i>next-hop</i>	Next hop address
	<i>distance</i>	Distance metric
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ip route 2.2.0.0 255.0.0.0 2.2.3.1 10	
Error messages	Route Entry Full!!!	
Related commands	show ip route show ip route static	

ip snmp-agent

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

Commands

ip snmp-agent

no ip snmp-agent

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

ipv6 address

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

Commands

ipv6 address *ipv6_prefix*

no ipv6 address

Syntax	ipv6	Configure IPv6
Description	address	IPv6 address setting
	<i>ipv6_prefix</i>	IPv6 address prefix
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	N/A	

Examples	<pre>MOXA(config-vlan)# ipv6 address 1::1 MOXA# show interfaces mgmt IPv4 Management VLAN id : 1 IP configuration : Static IP address : 192.168.127.253 Subnet mask : 255.255.255.0 Default gateway : 0.0.0.0 DNS server : IPv6 Global Unicast Address Prefix : 1:0:0:1:201:2ff:fe03 Global Unicast Address : 1::1:201:2ff:fe03:405 Link-Local Address : fe80::201:2ff:fe03:405</pre>
Error messages	Invalid prefix!
Related commands	show interface mgmt

line-swap-fast-recovery

Use the **line-swap-fast-recovery** global configuration command on the switch to enable the fast recovery feature of the MAC address table when line swapping. Use the **no** form of this command to disable it.

Commands

line-swap-fast-recovery

no line-swap-fast-recovery

Syntax Description	line-swap-fast-recovery	Enable Line Swap Fast Recovery feature
Defaults	This feature is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config)# line-swap-fast-recovery <LF></pre>	
Error messages	N/A	
Related commands	show mac-address-table	

Ildp enable

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

Commands

Ildp run

no Ildp run

Syntax Description	Ildp	Configure LLDP parameters
	run	Start up
Defaults	LLDP is enable in factory default.	

Command Modes	Global configuration
Usage Guidelines	N/A
Examples	MOXA(config)# lldp enable MOXA(config)# no lldp enable
Error messages	N/A
Related commands	show lldp

lldp timer

Use the **lldp timer** global configuration command to configure the transmission frequency of LLDP messages. To reset the timer to default, use the **no** form of this command.

Commands

lldp timer *transFreq*

no lldp timer

Syntax	lldp	Configure LLDP parameters
Description	timer	Transmission frequency of LLDP updates
	<i>transFreq</i>	5 to 32768 seconds
Defaults	Transmission frequency of LLDP updates is 30 seconds.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# lldp timer <UINT:transFreq> - 5 to 32768 seconds MOXA(config)# lldp timer 4 % LLDP transmit frequency should be between 5 to 32768 MOXA(config)# lldp timer 50	
Error messages	LLDP transmit frequency should be between 5 to 32768	
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*

no logging *ip-address*

Syntax	logging	Syslog server setting
Description	<i>ip-address</i>	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(config)# logging 192.168.1.1 <LF>	

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

logging-capacity

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

Commands

logging-capacity *threshold*

no logging-capacity

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

Logging-capacity email-warning

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

Commands

logging-capacity email-warning

no logging-capacity email-warning

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

logging-capacity over-size-action

Use the **logging-capacity over-size-action** global configuration command on switch to set event log over-size action. 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 event log is over-size.
	stop-recording	Stop recording when event 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	Global configuration
Usage Guidelines	N/A
Examples	<pre>MOXA(config)# login mode menu - Legacy Menu Mode cli - Command line interface MOXA(config)# login mode cli MOXA(config)# login mode menu</pre>

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	<pre>MOXA# configure terminal MOXA(config)# loopprotection MOXA(config)# no loopprotection</pre>	
Error messages	N/A	
Related commands	Show loopprotection	

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
	<i>seconds</i>	15 to 3825 seconds
Defaults	Default aging time is 300 sec	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config)# mac-address-table aging-time <UINT:seconds> - 15 to 3825 seconds</pre>	
Error messages	N/A	

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	http-server	Enable Http-server service
Description	secure	Enable SSL service
	telnet	Enable Telnet service
	ssh	Enable SSH service
	Port	Port
	<i>Port-number</i>	Listening port number
Defaults	The feature is enabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ip http-server port 80 MOXA(config)# ip http-server secure port 443 MOXA(config)# ip telnet 23 MOXA(config)# ip ssh port 22 MOXA(config)# no ip http-server secure	
Error messages	Assigning duplicate port numbers is not allowed	
	HTTP/SSH/Telnet/SSL port number is invalid, the interval is from 1 to 65535.	

mcast-filter

Use the **mcast-filter** interface configuration command on the switch to activate the multicast filter. Use the **no** form of this command to stop this function.

Commands

mcast-filter [**forward-all** | **forward-unknown** | **filter-unknown**]

no mcast-filter

Syntax	mcast-filter	Multicast filter
Description	forward-all	Forward all
	forward-unknown	Forward unknown
	filter-unknown	Filter unknown
Defaults	Default forward unknown	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# interface ethernet 1/1 MOXA(config-if)# mcast-filter forward-all MOXA(config-if)# mcast-filter forward-unknown MOXA(config-if)# mcast-filter filter-unknown MOXA(config-if)# no mcast-filter	
Error messages	N/A	

Related commands	show mcast-filter
------------------	-------------------

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	media	Select a media
Description	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(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	modbus	Enable Modbus
Description		
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	monitor	Configure Port mirror
Description	source	Monitored port
	interface	Port
	destination	Mirror port
	<i>modPort</i>	Port ID. E.g., 1/3, Trk2,...
	<i>direction</i>	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	<pre>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</pre>	
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	name	Port name
Description		
Defaults	None	
Command Modes	Interface configuration	

Usage Guidelines	N/A
Examples	MOXA(config)# interface ethernet 1/1 MOXA(config-if)# name interfacel_port1 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

network

Use the **network** command in router configuration mode to enable the routing process on the specified interface. Use the **no** form of this command to disable it.

Commands

network *if-name*

no network *if-name*

Syntax	network	Enable dynamic routing on an IP network
Description	<i>if-name</i>	Interface name
Defaults	N/A	
Command Modes	Router configuration of RIP, OSPF, and Static routes	
Usage Guidelines	N/A	
Examples (for RIP settings)	<pre>MOXA(config)# vlan create 2 % create vlan id:2 MOXA(config)# interface vlan 2 MOXA(config-vlan)# ip address 192.168.102.1 255.255.255.0 MOXA(config-vlan)# name vlan2if MOXA(config-vlan)# exit MOXA(config)# router rip MOXA(config-rip)# network <STRING:ifname> - Interface name MOXA(config-rip)# network vlan2if MOXA(config-rip)# MOXA# show ip rip RIP Protocol : Enable RIP version : V1 Distribution Connected : Enable Static : Disable OSPF : Disable RIP Enable Table Interface Name IP VID Enable ----- vlan2if 192.168.102.1 2 Enable MOXA#</pre>	
Error messages	No such interface existed	
Related commands	show ip rip	

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
	<i>seconds</i>	1-9999 seconds
Defaults	Default query interval is 600 sec	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ntp refresh-time 600 <LF>	
Error messages	Time is out of range	
Related commands	show clock	

ntp remote-server

Use the **ntp remote-server** global configuration command on the switch to configure the remote NTP server. Use the **no** form of this command to return to the default.

Commands

ntp remote-server *server-addr-1* [*server-addr-2*]

no ntp remote-server

Syntax Description	ntp	Configure Network Time Protocol
	remote-server	Configure NTP server for time query
	Simple	Configure Simple Network Time Protocol instead of Network Time Protocol
	<i>server-addr-1</i>	IP address or DNS name
	<i>server-addr-2</i>	IP address or DNS name
Defaults	The default configuration contains one time server "time.nist.gov".	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ntp remote-server 192.168.127.1 time.stdtime.gov.tw	
Error messages	N/A	
Related commands	show clock	

ntp server

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

Commands

ntp server
no ntp server

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

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	password-policy	Configure password policy
Description	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	

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	password-policy	Configure password policy
--------	------------------------	---------------------------

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

permit

Use the **permit** ACL configuration command on the switch to add a permit rule in the current ACL for traffic with specified IPs. Use the **no** form of this command to delete the rule.

Commands

permit *ip-address*

no permit *ip-address*

Syntax	permit	Configure PERMIT filter
Description	<i>ip-address</i>	E.g., 11.22.33.44
Defaults	N/A	
Command Modes	ACL configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-acl)# permit <IPV4ADDR:ipaddr> - E.g., 11.22.33.44	
Error messages	Invalid IPv4 address	
Related commands	Show ip access-list ip access-list	

ping

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

Commands

ping *ip-address*

Syntax	ping	Send echo messages
Description	<i>ip-address</i>	E.g., 11.22.33.44
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	MOXA# ping 192.168.127.1 PING 192.168.127.1, Send/Recv/Lost = 4/4/0	

port-security

Use the **port-security** interface configuration command on the switch to add a static unicast MAC-address on a specified port. Use the **no** form of this command to remove the specified MAC address.

Commands

port-security MAC-address

no port-security MAC-address

Syntax	port-security	Set port security
Description	MAC-address	MAC address XX:XX:XX:XX:XX:XX
Defaults	N/A	
Command Modes	interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# port-security 00:00:00:00:00:01 MOXA(config-if)# no port-security 00:00:00:00:00:01	
Error messages	Add new static unicast MAC address Fail !!!	

profinetio

Use the **profinetio** command to disable/enable PROFINET support (EDS-400A-PN series support only).

Commands

profinetio

no profinetio

Syntax	profinetio	Enable PROFINET IO
Description		
Defaults	Default is disabled	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# profinetio MOXA(config)# no profinetio	
Error messages	N/A	
Related commands	Show profinetio	

ptp announce-receipt-timeout

Use the **ptp announce-receipt-timeout** configuration command on the switch to set the announce-receipt-timeout parameter.

Commands

ptp announce-receipt-timeout interval

Syntax	ptp	Configure PTP
Description	announce-receipt-timeout	Set the integral multiple of announceInterval
	interval	2 to 10
Defaults	default is 3	

Command	configuration
Modes	
Usage	N/A
Guidelines	
Examples	MOXA(config)# ptp announce-receipt-timeout
Error messages	announceReceiptTimeout must be in the range from 2 to 10
Related commands	Show ptp settings Show ptp status Show ptp port

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	ptp	Configure PTP
Description	arb-time	Set the ARB time parameter of the local clock
	<i>time</i>	0 to 2147483646
Defaults	default is 0	
Command	configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# ptp arb-time 0	
Error messages	Arb time must be in the range from 0 to 2147483646	
Related commands	Show ptp settings Show ptp status Show ptp port	

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	ptp	Configure PTP
Description	clockclass	Set the clock class parameter of the local clock
	<i>class</i>	0 to 255
Defaults	default is 248	
Command	configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# ptp clockclass 248	
Error messages	clockclass must be in the range from 0 to 255	
Related commands	Show ptp settings Show ptp status Show ptp port	

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	ptp	Configure PTP
Description	domain-number	Set the domain number of the local clock
	<i>interval</i>	0 to 3
Defaults	default is 0	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp domain-number	
Error messages	domainNum must be in the range from 0 to 3	
Related commands	Show ptp settings Show ptp status Show ptp port	

ptp enable

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

Commands

ptp enable

no ptp

Syntax	ptp	Configure PTP
Description	enable	Enable the ptp operation
Defaults	ptp is default disable	
Command Modes	Configuration Interface configuration mode	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp enable MOXA(config)# no ptp MOXA(config-if)# ptp enable MOXA(config-if)# no ptp	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

ptp leap59

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

Commands

ptp leap59
no ptp leap59

Syntax	ptp	Configure PTP
Description	leap59	enable the last minute of the current UTC day contains 59 seconds
Defaults	default disable	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp leap59 MOXA(config)# no ptp leap59	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

ptp leap61

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

Commands

ptp leap61
no ptp leap61

Syntax	ptp	Configure PTP
Description	leap61	enable the last minute of the current UTC day contains 61 seconds
Defaults	default disable	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp leap61 MOXA(config)# no ptp leap61	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

ptp log-sync-interval

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

Commands

ptp log-sync-interval *interval*

Syntax	ptp	Configure PTP
Description	log-sync-interval	Set the logarithm to the base 2 of the mean SyncInterval
	<i>interval</i>	-3 to 1
Defaults	default is 0	

Command	configuration
Modes	
Usage	N/A
Guidelines	
Examples	MOXA(config)# ptp log-sync-interval
Error messages	logSyncInterval must be in the range from -3 to 1
Related commands	Show ptp settings Show ptp status Show ptp port

ptp log-announce-interval

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

Commands

ptp log-announce-interval *interval*

Syntax	ptp	Configure PTP
Description	log-announce-interval	Set the logarithm to the base 2 of the mean AnnounceInterval
	<i>interval</i>	0 to 4
Defaults	default is 1	
Command	configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# ptp log-announce-interval	
Error messages	logAnnounceInterval must be in the range from 0 to 4	
Related commands	Show ptp settings Show ptp status Show ptp port	

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	ptp	Configure PTP
Description	log-min-delay-req-interval	Set the logarithm to the base 2 of the mean minDelayReqInterval
	<i>interval</i>	0 to 5
Defaults	default is 0	
Command	configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	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 Show ptp status Show ptp port	

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	ptp	Configure PTP
Description	log-min-delay-req-interval	Set the logarithm to the base 2 of the mean minPDelayReqInterval
	<i>interval</i>	-1 to 5
Defaults	default is 0	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	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 Show ptp status Show ptp port	

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-1step-tc

ptp mode v2-e2e-2step-tc

ptp mode v2-p2p-2step-tc

Syntax	ptp	Configure PTP
Description	mode	Set the ptp operation mode
	v1-bc	ptp v1 boundary clock mode
	v2-e2e-bc	ptp v2 end-to-end boundary clock mode
	v2-p2p-bc	ptp v2 peer-to-peer boundary clock mode
	v2-e2e-1step-tc	ptp v2 end-to-end 1-step transparent 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	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp mode v1-bc	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

ptp preferred-master

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

Commands

ptp enable

no ptp

Syntax	ptp	Configure PTP
Description	preferred-master	Set the local clock as the master clock(only valid in v1-bc mode)
Defaults	default disable	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples (set switch as local master clock)	MOXA(config)# ptp preferred-master	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

ptp priority1

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

Commands

ptp priority1 *priority*

Syntax	ptp	Configure PTP
Description	priority1	Set the priority1 parameter of the local clock
	<i>priority</i>	0 to 255
Defaults	default is 128	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp priority1 128	
Error messages	priority1 must be in the range from 0 to 255	
Related commands	Show ptp settings Show ptp status Show ptp port	

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	ptp	Configure PTP
Description	Priority2	Set the priority2 parameter of the local clock
	<i>priority</i>	0 to 255

Defaults	default is 128
Command	configuration
Modes	
Usage	N/A
Guidelines	
Examples	MOXA(config)# ptp priority2 128
Error messages	priority2 must be in the range from 0 to 255
Related commands	Show ptp settings Show ptp status Show ptp port

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	configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# ptp timescale arb MOXA(config)# ptp timescale ptp	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

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 domain
	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	configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config)# ptp transport 802_3 MOXA(config)# ptp transport ipv4	
Error messages	N/A	

Related commands	Show ptp settings Show ptp status Show ptp port
------------------	---

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	ptp	Configure PTP
Description	utc-offset	sets the offset between TAI and UTC
	<i>interval</i>	0 to 65535
Defaults	default is 0	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp utc-offset 0	
Error messages	utc_offset must be in the range from 0 to 65535	
Related commands	Show ptp settings Show ptp status Show ptp port	

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	ptp	Configure PTP
Description	utc-offset-valid	UTC Offset field is valid
Defaults	default disable	
Command Modes	configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# ptp utc-offset-valid MOXA(config)# no ptp utc-offset-valid	
Error messages	N/A	
Related commands	Show ptp settings Show ptp status Show ptp port	

qos highest-priority

Use the **qos highest-priority** interface configuration command on the switch to set the Port Priority of the ingress frames to "High" queues of the Ethernet ports/Trunks. Use the **no** form of this command to return to the default.

Commands**qos highest-priority****no qos highest-priority**

Syntax	qos	Configure QoS
Description	highest-priority	Enable port highest priority queue
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# qos highest-priority	
Error messages	Cannot configure on trunk member port 1/1!	
Related commands	show qos	

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	qos	Configure QoS
Description	default-cos	Configure Default CoS of each port
	<i>cos-value</i>	CoS value (0 to 7)
Defaults	Default CoS value is 3	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# qos default-cos <UINT:cos> - CoS value (0 to 7)	
Error messages	Cannot configure on trunk member port 1/1!	
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** *module_id***no qos inspect dscp** *module_id***qos inspect cos****no qos inspect cos**

Syntax	qos	Configure QoS
Description	inspect	Configure inspection criteria
	dscp	Enable DSCP inspection
	<i>module_id</i>	Module ID from 1 to 4

	cos	Enable CoS inspection of each port
Defaults	N/A	
Command Modes	Global configuration Interface configuration	
Usage Guidelines	In product with 88E6095, the "qos inspect dscp" command is configured in interface configuration mode. In product with BCM5650, the "qos inspect dscp" command is configured in global configuration mode with module index.	
Examples	MOXA(config)# qos inspect dscp - Enable DSCP inspection MOXA(config-if)# qos inspect cos - Enable CoS inspection of each port	
Error messages	Cannot configure on trunk member port 1/1!	
Related commands	show qos	

qos mapping

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

Commands

qos mapping cos-to-queue *cos-value queue*

no qos mapping cos-to-queue

qos mapping dscp-to-cos *dscp-value cos-value*

no qos mapping dscp-to-cos

qos mapping dscp-to-queue *dscp-value queue*

no qos mapping dscp-to-queue

Syntax Description	qos	Configure QoS
	mapping	Configure QoS mapping
	cos-to-queue	CoS to traffic queue
	<i>cos-value</i>	CoS value (0 to 7)
	<i>queue</i>	Traffic queue
	dscp-to-cos	DSCP to CoS mapping
	<i>dscp-value</i>	DSCP value (0 to 63)
	dscp-to-queue	DSCP to traffic queue
Defaults	Cos (queue): 0 (0), 1(0), 2(1), 3(1), 4(2), 5(2), 6(3), 7(3) DSCP(Cos): 0-7(0), 8-15(1), 16-23(2), 24-31(3), 32-39(4), 40-47(5), 48-55(6), 56-63(7)	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# qos mapping cos-to-queue 7 <UINT:queue> - Traffic queue MOXA(config)# qos mapping cos-to-queue 7 3 MOXA(config)# qos mapping dscp-to-cos 23 <UINT:cos> - CoS value (0 to 7) MOXA(config)# qos mapping dscp-to-cos 23 7	
Error messages	Invalid parameter. CoS value must be 0 to 7 and queue number must be 0 to 3 Invalid parameter. CoS value must be 0 to 7 and DSCP value must be 0 to 63	
Related commands	show qos	

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

quit

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

Commands

exit

Syntax	quit	Exit command line interface
Description		
Defaults	N/A	
Command Modes	N/A	
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 }

rate-limit ingress rate { none | 128k | 256k | 512k | 1M | 2M | 4M | 8M }

```

rate-limit ingress mode { bcast | bcast-mcast | bcast-mcast-dlf | all }
rate-limit mode { normal | port-disable}
rate-limit normal { ingress | egress } percentage percentage
no rate-limit normal { ingress | egress }
rate-limit normal ingress rate { none | 128k | 256k | 512k | 1M | 2M | 4M | 8M }
rate-limit normal ingress mode { bcast | bcast-mcast | bcast-mcast-dlf | all }
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
	normal	Rate limiting normal mode
	port-disable	Rate limiting port-disable mode
	ingress	Ingress rate limiting
	egress	Egress rate limiting
	percentage	Percentage correspond to current port speed
	<i>percentage</i>	Limit percentage, and will take effect at the percentage 0/3/5/10/15/25/35/50/65/85
	rate	Specify the rate
	mode	Specify the mode
	bcast	Limit broadcast frames
	bcast-mcast	Limit broadcast and multicast frames
	bcast-mcast-dlf	Limit broadcast, multicast and DLF frames
	all	All traffic
	period	Port disable period
	<i>period</i>	Seconds
Defaults	0 or none means unlimiting.	
Command Modes	Interface configuration	
Usage Guidelines	The <i>percentage</i> 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	

redistribute

Use the **redistribute** commands to enable learning routes from another IP routing protocol. Use the **no** form of this command to disable it.

Commands

```

redistribute connected
no redistribute connected
redistribute static
no redistribute static

```


redistribute rip
no redistribute rip
resitribute ospf
no redistribute ospf

Commands	redistribute	Enable the switch's import routes learned through another IP routing protocol
	connected	Import routes learned through directly connected
	Static	Import routes learned through static route
	rip	Import routes learned through RIP
	ospf	Import routes learned through OSPF
Defaults	N/A	
Command Modes	Router configuration mode as OSPF / RIP	
Usage Guidelines	N/A	
Examples	MOXA(config-ospf)# redistribute rip MOXA(config-rip)# redistribute ospf	
Error messages	N/A	
Related commands	show ip ospf show ip rip	

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(config)# redundancy MOXA(config-rdnt)#	

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	<pre>MOXA(config)# redundancy mode rstp - Rapid Spanning Tree turbo-ring-v1 - Turbo ring version 1 turbo-ring-v2 - Turbo ring version 2 turbo-chain - Turbo chain mst - MSTP</pre>	
Error messages	N/A	
Related commands	show redundancy mode	

relay-warning config relay

Use **relay-warning config relay** to select relay to trigger when a warning event occurs.

Commands

relay-warning config relay [*relayId*]

Syntax Description	relay-warning	Configure relay warning
	config	Choose which relay to configure
	relay	Relay
	<i>relayId</i>	Relay's ID = 1 or 2
Defaults	N/A	
Command Modes	Global configuration / Interface configuration	
Usage Guidelines	These commands only existed in device with multiple relays.	
Examples	N/A	
Error messages	Please designate the relay ID Invalid relay ID	
Related commands	show relay-warning	

relay-warning event

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	<pre>MOXA# configure terminal MOXA(config)# relay-warning override - Override the relay warning setting event - System events MOXA(config)# relay-warning event power-input1-fail - Power input 1 failure (ON->Off) power-input2-fail - Power input 2 failure (ON->Off) turbo-ring-break - Turbo Ring break MOXA(config)# relay-warning event turbo-ring-break</pre>
Error messages	N/A
Related commands	show relay-warning

relay-warning event

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
	<i>rxThreshold</i>	0 to 100
	<i>duration</i>	1 to 300
	link	All link events
Defaults	All interface events are disabled by default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>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</pre>	
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 [relayId]

no relay-warning override relay [relayId]

Syntax	relay-warning	Configure relay warning
Description	override	Override the relay warning setting
	relay	Relay
	relayId	Relay's ID = 1 or 2
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	relayId will only be used on the product that have multiple relays.	
Examples	MOXA(config)# relay-warning override relay	
Error messages	Please designate the relay ID Invalid relay ID	
Related commands	show relay-warning	

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	reload	Halt and perform a cold restart
Description	factory-default	Halt and perform a cold restart with factory default
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# reload <LF> factory-default - Halt and perform a cold restart with factory default MOXA# rel reload - Halt and perform a cold restart MOXA# reload factory-default <LF> MOXA# reload Proceed with reload ? [Y/n] MOXA# reload factory-default Proceed with reload to factory default? [Y/n]</pre>	

router ospf

To configure an Open Shortest Path First (OSPF) routing process, use the **router ospf** command in global configuration mode. To terminate an OSPF routing process, use the **no** form of this command.

Commands

router ospf [router-id]

no router ospf

Syntax	router	Enable a routing process
Description	ospf	Enable OSPF routing, and enter router configuration mode
	router-id	OSPF routing ID has a unique value
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	Use router ospf commands to enable OSPF routing process. Use router ospf router-id to entering the Router configuration mode as OSPF.	
Examples	MOXA(config)# router ospf MOXA(config)# router ospf 0.0.1.1 MOXA(config-ospf)#	
Error messages	Invalid parameters!	
Related commands	show ip ospf	

router rip

Use the **router rip** global configuration command to Enable a RIP routing process, and enter router configuration mode. To turn off the RIP routing process, use the **no** form of this command.

Commands

router rip

no router rip

Syntax	router	Enable a routing process
Description	rip	Enable RIP (Routing Information Protocol)
Defaults	RIP is disabled in factory default.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# router rip MOXA(config-rip)#	
Error messages	N/A	
Related commands	show ip rip	

router vrrp

To enable Virtual Router Redundancy Protocol (VRRP), use the **router vrrp** command in global configuration mode. To disable the VRRP, use the **no** form of this command

Commands

router vrrp

no router vrrp

Syntax	router	Enable a routing process
Description	vrrip	Enable VRRP (Virtual Router Redundancy Protocol)
Defaults	VRRP is not default disabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# router vrrp MOXA(config)# no router vrrp	
Error messages	N/A	
Related commands	show ip vrrp	

save config

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

Commands

save config

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

show acl

NOTE The command is supported only in Layer 3 switches

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

Commands

show acl [id]

show acl summary

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

Examples	<pre> 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:00:00:00:00 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 </pre>
Error messages	Invalid ID!

show auth tacacs+

Use the **show auth tacacs+** user EXEC command to display the setting of TACACS+ authentication traffic statistic information of interfaces.

Commands

show auth tacacs+

Syntax	auth	Display authentication settings
Description	tacacs+	Tacacs+ authentication
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show auth tacacs+ Tacacs+ information: Status : Disabled Auth server : tacacs.server.moxa.com, port:49 Shared key : Auth type : ASCII Server Timeout : 23 sec. </pre>	
Error messages	N/A	
Related commands	auth tacacs+ auth tacacs+ server auth tacacs+ auth-type	

show clock

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

Commands**show clock**

Syntax Description	clock	Display the system clock
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show clock Current Time : Fri Jan 01 08:38:28 2010 Daylight Saving Start Date : End Date : Offset : Time Zone : GMT-4:00 Time Server : Query Period : 600 sec NTP/SNTP Server : Disabled</pre>	
Error messages	N/A	
Related commands	<pre>clock set clock summer-time clock timezone ntp refresh-time ntp remote-server ntp server</pre>	

show dot1x

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

Commands**show dot1x**

Syntax Description	dot1x	Display 802.1x settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	<pre>MOXA# show dot1x Database Option: Local Radius Server : localhost Server Port : 1812 Shared Key : Re-Auth : Enable Re-Auth Period : 3600 Port 802.1X Enable ----- 1-1 Disable 1-2 Enable 1-3 Disable 1-4 Disable</pre>	
Examples	N/A	

Error messages	N/A
Related commands	dot1x auth dot1x reauth

show dot1x local-userdb

To check the 802.1x local user database, use the **show dot1x local-userdb** command.

Commands

show dot1x local-userdb

Syntax	dot1x	Display 802.1x settings
Description	local-userdb	Display current local database
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	MOXA# show dot1x local-userdb Index User Name Description ----- 1 moxanet moxanet	
Examples	N/A	
Error messages	N/A	
Related commands	dot1 local-userdb	

show eip

Commands

show eip

Syntax	eip	Display Ethernet/IP configuration
Description		
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	MOXA# show eip eip disable	
Examples	N/A	
Error messages	N/A	
Related commands	eip	

show PROFINETIO

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

Commands

show profinetio

Syntax	show	Show running system information
Description	profinetio	Display PROFINET configuration
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	

Usage Guidelines	N/A
Examples	MOXA> show profinetio profinet io disable
Error messages	N/A
Related commands	profinetio

show email-warning config

Commands

show email-warning config

Syntax	show	Show running system information
Description	email-warning	Display Email warning configuration
	config	Email warning configuration
Defaults	N/A	
Command Modes	Privileged EXEC /User EXEC	
Usage Guidelines	N/A	
Examples	<pre> 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 Port Link Link Traffic RX Traffic 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 </pre>	

	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
	MOXA#					
Error messages	N/A					
Related commands	email-warning event email-warning account email-warning server email-warning mail-address					

show gmrp

Use the **show igmp** user EXEC command to display the GMRP table of the switch.

Commands

show gmrp

Syntax	gmrp	Show GMRP Settings
Description		
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	MOXA# show gmrp Index Multicast Address Fixed Ports Learned Ports -----	
Examples	N/A	
Error messages	N/A	
Related commands	gmrp	

show gvrp

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

Commands

show gvrp

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

show interfaces acl

NOTE The command is supported only in Layer 3 switches

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

Command

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

Syntax	show	Show running system information
Description	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	<i>module/port</i>	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/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>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</pre>	
Error messages	Invalid ID!	

show interfaces counters

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

Commands

show interfaces counters

show interfaces ethernet *port-id* **counters**

show interfaces trunk *trunk-id* **counters**

Syntax	interfaces	Interface status and configuration
Description	counters	Display counters
	<i>port-id</i>	Port ID or list. E.g., 1/1,2,3,2/1-3,5,...
	<i>trunk-id</i>	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	<pre>MOXA# show interfaces counters Port Tx Packets(Load%) Rx Packets(Load%) ----- 1/ 5 662(0) 364(0) 1/ 6 0(0) 0(0) Trk1 1608(0) 1608(0) Trk2 0(0) 0(0)</pre>	

	<pre> MOXA# show interfaces ethernet 1/5 counters Port 1/5 (last sample time: 16577 sec. ago) - TX - Unicast Packets : 108 +108 Multicast Packets : 553 +553 Broadcast Packets : 2 +2 Collision Packets : 0 +0 - RX - Unicast Packets : 109 +109 Multicast Packets : 0 +0 Broadcast Packets : 255 +255 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 </pre>
--	---

show interfaces ethernet

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

Commands

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

Syntax Description	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	<i>module/port</i>	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
	1-1	Down	100TX,RJ45.	--	--	--
	1-2	Down	100TX,RJ45.	--	--	--
	1-3	Down	100TX,RJ45.	--	--	--
	1-4	Down	100TX,RJ45.	--	--	--
	1-5	Up	100TX,RJ45.	100M-Full	Off	MDI
	1-6	Down	100TX,RJ45.	--	--	--
	1-7	Down	100TX,RJ45.	--	--	--
	1-8	Down	100TX,RJ45.	--	--	--
	MOXA# show interfaces ethernet 1/1-3 config					
	Port	Enable	Description	Speed	FDX Flow Ctrl	MDI/MDIX
	1-1	Yes	100FX,SC,Single,40.	100M-Full	Disable	Auto
	1-2	Yes	100FX,SC,Single,40.	100M-Full	Disable	Auto
	1-3	Yes	100TX,RJ45.	Auto	Disable	Auto

show interfaces filter-ip

Use the **show interfaces filter-ip** user EXEC command to display the setting of IP filtering entries.

Commands

show interfaces ethernet *module/port* filter-ip

Syntax Description	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	<i>module/port</i>	Port ID or list. E.g., 1/1,2,3,2/1-3,5,...
	filter-ip	Rate limiting configuration
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show interfaces ethernet 1/1-6 filter-ip Allowed IP in Port 1/1: 192.168.127.1 192.168.127.2 192.168.127.3 192.168.127.4 192.168.127.5 192.168.127.6 192.168.127.7 192.168.127.8 Allowed IP in Port 1/2: Allowed IP in Port 1/3: Allowed IP in Port 1/4: --More-- Allowed IP in Port 1/5:</pre>	

	192.168.127.1 Allowed IP in Port 1/6:
Error messages	N/A
Related commands	ip filter-ip

show interfaces mgmt

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

Commands

show interfaces mgmt

Syntax	interfaces	Interface status and configuration
Description	mgmt	Display management VLAN information
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show interfaces mgmt IPv4 Management VLAN id : 1 IP configuration : Static IP address : 192.168.127.253 Subnet mask : 255.255.255.0 Default gateway : 0.0.0.0 DNS server :</pre>	
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	show	Show running system information
Description	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	<pre>MOXA# show interfaces mgmt access-ip Accessible IP List: Enable Index IP / Netmask 1 192.168.127.253 / 255.255.255.0</pre>
Error messages	N/A
Related commands	access-ip

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	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	<i>module/port</i>	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	<pre>MOXA# show interfaces ethernet 1/1-3 rate-limit Port 1/1: Ingress Limit Mode: Broadcast, Multicast, DLF Ingress Limit Rate: 8M Egress Limit Rate : Not Limited Port 1/2: Ingress Limit Mode: Broadcast Ingress Limit Rate: 8M Egress Limit Rate : Not Limited Port 1/3: Ingress Limit Mode: Broadcast Ingress Limit Rate: 8M Egress Limit Rate : Not Limited</pre>	
Error messages	N/A	
Related commands	rate-limit	

show interfaces trunk

Use the **show interfaces trunk** user EXEC command to display spanning-tree state information

Commands

show interfaces trunk [*trunk-id-list*]

Syntax Description	interfaces	Interface status and configuration
	trunk	Show interface trunk information
	<i>trunk-id-list</i>	Trunk ID (or list)
Defaults	N/A	

Command Modes	Privileged EXEC/ User EXEC
Usage Guidelines	N/A
Examples	<pre> MOXA# show interfaces trunk Trk# Type Enable Description Speed ----- 1 Static Yes 100M-Full 2 Static Yes 100M-Full MOXA# show interfaces trunk 1-2 Trunk-1 (Static): Member Status ----- 1/1 Success 1/2 Success Trunk-2 (Static): Member Status ----- 1/3 Fail 1/4 Fail </pre>
Error messages	There is no member in Trunk 1
Related commands	trunk-mode trunk-group

show interfaces vlan

Use the **show interfaces vlan** user EXEC command to display vlan ip interface information.

Commands

show interfaces vlan [*vlan-id-list*]

Syntax Description	show	Show running system information
	Interfaces	Interface status and configuration
	Vlan	Display layer3 IP interface settings
	<i>vlan-id-list</i>	1 to 4094
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show interfaces vlan Interface Name: VLAN2 IP Address: 10.10.10.10 Subnet Mask: 255.255.255.0 VLAN ID: 2 Proxy ARP: Disable </pre>	
Error messages	N/A	
Related commands	Interface vlan	

show interfaces mgmt trusted-access

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

Commands

show interfaces mgmt trusted-access

Syntax	show	Show running system information
Description	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	<pre>MOXA# show interfaces mgmt trusted-access Trusted Access IP List: Enable Index IP / netmask 1 192.168.127.253 / 255.255.255.0</pre>	
Error messages	N/A	
Related commands	trusted-access	

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	ip	Display IP information
Description	auto-assign	Display automatic ip assignment settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show ip auto-assign Port Device's Current IP Active Function Desired IP ----- 1/ 6 NA -- 192.168.127.8 Trk1 NA -- 192.168.127.7</pre>	
Error messages	N/A	
Related commands	ip auto-assign	

show ip dhcp filter

Use the **show ip dhcp filter** user EXEC command to display DHCP filter configurations.

Commands

show ip dhcp filter

Syntax	show	Show running system information
--------	-------------	---------------------------------

Description	ip	Display IP information
	dhcp	Display DHCP configurations
	filter	Display DHCP filter configurations
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA # show ip dhcp filter Port DHCP Filter ----- 1 Client 2 Disabled 3 Disabled 4 Server 5 Both 6 Disabled 7 Both 8 Disabled 9 Disabled 10 Client 11 Server 12 Disabled 13 Disabled 14 Disabled 15 Disabled 16 Disabled</pre>	
Error messages	N/A	
Related commands	ip dhcp client filter ip dhcp server filter	

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 / User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show ip dhcp-relay config DHCP Relay Agent Setting 1st server IP : 2nd server IP : 3rd server IP :</pre>	

```

4th server IP :
DHCP Relay Option 82: Enable
  Remote ID type   : Other
  Remote ID value  : 1234567890123
  Remote ID display: 31323334353637383930313233
--More--
DHCP Function Table
Port  Circuit-ID      Option 82
-----
1-1   01000101          Disable
1-2   01000102          Disable
1-3   01000103          Disable
1-4   01000104          Disable
1-5   01000105          Disable
1-6   01000106          Disable
1-7   01000107          Disable
1-8   01000108          Disable
3-1   01000111          Disable
3-2   01000112          Disable
3-3   01000113          Disable
3-4   01000114          Disable
3-5   01000115          Disable
3-6   01000116          Disable
3-7   01000117          Disable
3-8   01000118          Disable
MOXA#
    
```

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: disable	

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

Commands	ip	Display IP information
	igmp	Show IGMP snooping settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	<pre> MOXA# show ip igmp IGMP Snooping :Enable IGMP Snooping Enhanced Mode :Enable Query Interval :125(sec) VID Static(S) / Learned(L) Active IGMP Groups Multicast Querier Port & IP MAC Members Port Querier(Q) connected Port ----- 1 1-1(S) 224.1.1.8 01-00-5E-01-01-08 1-1 239.255.255.250 01-00-5E-7F-FF-FA 1-1 </pre>	
Examples	N/A	
Error messages	N/A	
Related commands	ip igmp ip igmp snooping	

show ip ospf

Use the **show ip ospf** user EXEC command to display general information about OSPF routing processes.

Commands

show ip ospf

Syntax Description	show	Show running system information
	ip	Display IP information
	ospf	Display OSPF configurations
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show ip ospf OSPF Golbal Configuration ----- OSPF Enabled Router ID 192.168.1.1 Current Router ID 192.168.1.1 Redistribute [Connected] OSPF Area Configuration Idx Area ID Area Type Metric ----- 1 192.168.1.1 Normal 0 OSPF Virtual Link Configuration </pre>	

	<pre> Idx Transit Area ID Neighbor Router ID ----- 1 192.168.1.1 192.168.0.0 OSPF Aggregation Configuration Idx Area ID Network Address Network Mask ----- </pre>
Error messages	N/A
Related commands	<pre> area area virtual-link network area redistribute </pre>

show ip ospf database

Use the **show ip ospf database** user EXEC command to display information related to the OSPF database for a specific router.

Commands

show ip ospf database

Syntax Description	show	Show running system information
	ip	Display IP information
	ospf	Display OSPF configurations
	database	OSPF database
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ip ospf database	
Error messages	N/A	
Related commands	ip ospf area	

show ip ospf interface

Use the **show ip ospf interface** user EXEC command to display the OSPF related interfaces information.

Commands

show ip ospf interface

Syntax Description	show	Show running system information
	ip	Display IP information
	ospf	Display OSPF configurations
	interface	OSPF routing interface
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ip ospf interface	
Error messages	N/A	

Related commands	ip ospf area ip ospf priority ip ospf hello-interval ip ospf dead-interval ip ospf cost
------------------	---

show ip ospf neighbor

Use the **show ip ospf neighbor** user EXEC command to display OSPF neighbor information.

Commands

show ip ospf neighbor

Syntax	show	Show running system information
Description	ip	Display IP information
	ospf	Display OSPF configurations
	neighbor	OSPF neighbor information
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ip ospf neighbor	
Error messages	N/A	
Related commands	ip ospf area	

show ip rip

Use the **show ip rip** command to display the settings of RIP.

Commands

show ip rip

Syntax	show	Show running system information
Description	ip	Display IP information
	rip	Display RIP configurations
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ip rip RIP Protocol : Enable RIP version : V2 Distribution Connected : Enable Static : Disable OSPF : Disable RIP Enable Table Interface Name IP VID Enable ----- vlan2if 192.168.102.1 2 Enable	

show ip route

Use the **show ip route** user EXEC command to display current routing table entries.

Commands

show ip route [static]

Syntax	show	Show running system information
Description	ip	Display IP information
	route	Display routing entries
	static	Static routing entries
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show ip ospf neighbor	

show ip vrrp

To display a detailed status of all Virtual Router Redundancy Protocol (VRRP) virtual routers, use the **show ip vrrp** command in EXEC mode.

Commands

show ip vrrp

Commands	ip	Display IP information
	vrrp	Display VRRP information
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	<pre> MOXA# show ip vrrp VRRP Enable Enable VRRP Interface Table Interface Name IP Address VID Status 1 1.1.1.1 2 Init VRRP Basic Setting VRRP Entry Enable :Enable Virtual IP :0.0.0.0 Virtual Router ID :0 Priority :100 Preemption Mode :Enable ----- Interface Name IP Address VID Status 2 2.2.2.2 3 Init VRRP Basic Setting VRRP Entry Enable :Disable Virtual IP :0.0.0.0 Virtual Router ID :0 Priority :100 Preemption Mode :Enable ----- </pre>	
Examples	N/A	

Error messages	N/A
Related commands	router vrrp vrrp vrrp preempt vrrp priority

show lldp

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

Commands

show lldp

show lldp entry

Syntax Description	show	Show running system information
	lldp	Display LLDP information
	entry	LLDP entries
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	<pre>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</pre>	
Error messages	N/A	
Related commands	lldp timer lldp run	

show logging

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

Commands

show logging [event-log]

Syntax	logging	Display syslog information
Description	event-log	Display system event logs
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show logging Syslog server #1: Syslog server #2: 192.168.1.2, port: 514 Syslog server #3: 192.168.1.3, port: 514 MOXA# show logging event-log Idx Boot Time or Uptime Log ----- 1 337 2037/06/23, 20:46:08 192.168.127.1 admin Auth. ok 2 337 2037/06/23, 20:52:47 Authentication fail 3 338 2037/06/23, 21:51:59 Port 1-1(Trk1) link on 4 338 2037/06/23, 21:51:59 Port 1-2 link on 5 338 2037/06/23, 21:51:59 Port 1-5 link on 6 338 2037/06/23, 21:52:03 Port 1-5 link off 7 338 2037/06/23, 21:52:03 Warm start by Firmware Upgrade 8 338 2037/06/23, 21:52:04 Port 1-5 link on 9 338 2037/06/23, 22:03:43 192.168.127.1 admin Auth. ok 10 338 2037/06/23, 22:04:04 192.168.127.1 admin Auth. ok 11 338 2037/06/24, 00:02:47 Port 1-5 link off 12 338 2037/06/24, 00:02:48 Port 1-5 link on</pre>	
Error messages	N/A	
Related commands	logging	

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	mac-address-table	Display MAC address forwarding table
Description	static	Retrieve static MAC addresses
	learned	Retrieve learned MAC addresses
	mcast	Retrieve Multicast address
	interface	Retrieve MAC address by interface
	ethernet	Ethernet Port interface
	<i>module/port</i>	Port ID. E.g., 1/3, 2/1,...
	trunk	Trunk interface
	<i>trunk-id</i>	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
	MAC Type VLAN Port

	00-40-F4-8D-0D-F7 ucast(1) 1 1/5
	MOXA# show mac-address-table learned
	MAC Type VLAN Port

	00-40-F4-8D-0D-F7 ucast(1) 1 1/5

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	mac-address-table	Display MAC address forwarding table
Description	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 entry aging time 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 mcast-filter

Use the **show mcast-filter** user EXEC command to display the multicast filter configuration.

Commands

show mcast-filter [module/port]

Commands	mcast-filter	Multicast Filtering Behavior
	Module/port	Port(Trunk) ID or list. E.g., 1/1,2,4-5,2/1,Trk1,Trk2-Trk4
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	MOXA# show mcast-filter Port Multicast Filtering Behavior ----- 1-1 Forward All 1-2 Forward Unknown 1-3 Filter Unknown	
Examples	N/A	
Error messages	N/A	

Related commands	mcast-filter
------------------	--------------

show modbus

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

Commands

show modbus

Syntax	modbus	Display Modbus configuration
Description		
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	MOXA# show modbus Modbus enable	
Examples	N/A	
Error messages	N/A	
Related commands	modbus	

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 / User EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show port monitor Port Being Monitored Direction Mirror Port ----- 1-1 1-2 both 3-2 </pre> MOXA#	
Error messages	N/A	
Related commands	monitor	

show port-security

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

Commands

show port-security [module/port]

Commands	port-security	Display port access control table
	<i>module/port</i>	Port ID or list. E.g., 1/1,2,3,2/1-3,5,...
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	<pre>MOXA# show port-security Port Index Mac Address Status ----- 1-2 1 00-00-00-00-00-01 static lock</pre>	
Examples	N/A	
Error messages	N/A	
Related commands	port-security	

show qos

Use the **show qos** user EXEC command to display QoS related settings.

Commands

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

Syntax Description	qos	Display QoS configuration
	cos-to-queue	CoS to traffic queue mappings
	dscp-to-cos	DSCP to CoS mappings
	dscp-to-queue	DSCP to traffic queue mappings
Defaults	N/A	
Command Modes	Privileged	
Usage Guidelines	N/A	
Examples	<pre>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 cos-to-queue</pre>	

	<pre> CoS Queue # ----- 0 Q0 1 Q0 2 Q1 3 Q1 4 Q2 5 Q2 6 Q3 7 Q3 MOXA# show qos dscp-to-cos DSCP Cos DSCP Cos DSCP Cos DSCP Cos ----- 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 </pre>
Error messages	N/A
Related commands	<pre> qos mode qos inspect qos mapping qos default-cos </pre>

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	<pre>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</pre>
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
	<i>instance-id</i>	MSTP instance ID
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre>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 -----</pre>	
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	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	<pre> MOXA# show redundant spanning-tree Spanning tree status: Enabled Role : Root Bridge priority : 32768 Hello time : 2 sec Forwarding delay: 30 sec Max age time : 20 sec Int# Enable Edge Port Prio Cost Status ----- 1/1 Disabled Auto 128 200000 --- 1/2 Disabled Auto 128 200000 --- 1/3 Disabled Auto 128 200000 --- 1/4 Disabled Auto 128 200000 --- 1/5 Disabled Auto 128 200000 --- 1/6 Disabled Auto 128 200000 --- </pre>
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

Commands	redundancy	Display redundant settings
	turbo-chain	Display turbo chain status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show redundancy turbo-chain Role :HEAD ----- Port Role Port Number Port Status ----- Head Port 1-1 Forwarding Member Port 1-2 Forwarding </pre>	
Error messages	N/A	

Related commands	turbo-chain
------------------	-------------

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	show	Show running system information
Description	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	<pre>MOXA# show redundancy turbo-ring-v1 Turbo Ring V1 settings: Set as master: Disabled 1st port: 4-3 2nd port: 4-4 Ring Coupling: Disabled Coupling Port: 4-1 Coupling Control Port: 4-2 Turbo Ring V1 status: Master/Slave: --- Redundant Ports Status: 1st port: --- 2nd port: --- Ring Coupling Ports Status: --- Coupling Port: --- Coupling Control Port: ---</pre>	
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	show	Show running system information
Description	redundancy	Display redundancy protocol status
	turbo-ring-v2	Display turbo ring v2 status

Defaults	N/A
Command	Privileged EXEC
Modes	
Usage	N/A
Guidelines	
Examples	<pre>MOXA# show redundancy turbo-ring-v2 Turbo Ring V2 settings: Ring 1: Enabled Set as master: Disabled 1st port: 4-3 2nd port: 4-4 Ring 2: Disabled Set as master: Disabled 1st port: 4-1 2nd port: 4-2 Ring Coupling: Disabled Primary Port:4-1 Backup Port:4-2 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: ---</pre>
Error messages	N/A
Related commands	turbo-ring-v2

show relay-warning

Use the **show relay-warning** 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 / User EXEC	

Usage	N/A																																																																																									
Guidelines																																																																																										
Examples	<pre> 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 --More-- Port Events Setting </pre> <table border="1"> <thead> <tr> <th>Port</th> <th>Link</th> <th>Traffic Overload</th> <th>RX Threshold(%)</th> <th>Traffic Duration(s)</th> </tr> </thead> <tbody> <tr><td>1-1</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-2</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-3</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-4</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-5</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-6</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-7</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>1-8</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-1</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-2</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-3</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-4</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-5</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-6</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-7</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> <tr><td>3-8</td><td>Ignore</td><td>Disable</td><td>1</td><td>1</td></tr> </tbody> </table> <pre> MOXA# </pre>					Port	Link	Traffic Overload	RX Threshold(%)	Traffic 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
Port	Link	Traffic Overload	RX Threshold(%)	Traffic 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																																																																																						

show running-config

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

Commands

show running-config

Syntax	show	Show running system information
Description	running-config	Current operating configuration
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show running-config Building configuration ... ! ip telnet ip http-server ip http-server auto-logout 120 ! ntp remote-server time.nist.gov </pre>	

	<pre> ! ! vlan mode lqvlan gvrp ! snmp-server version v1-v2c snmp-server community public ro snmp-server community private rw snmp-server trap-mode trap ! lldp run lldp timer 30 ! ! dhcp-relay option82 dhcp-relay option82 remote-id-type other dhcp-relay option82 man-id 1234567890123 ! ! interface ethernet 1/1 no shutdown speed-duplex Auto no flowcontrol media cable-mode auto --More-- </pre>
Error messages	N/A
Related commands	show startup-config

show startup-config

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

Commands

show running-config

Syntax	show	Show running system information
Description	startup-config	Contents of startup configuration
Defaults	N/A	
Command Modes	Privileged EXEC / User EXEC	
Usage Guidelines	N/A	
Examples	<pre> MOXA# show startup-config Building configuration ... ! ip telnet ip http-server ip http-server auto-logout 120 ! ntp remote-server time.nist.gov ! </pre>	

	<pre> ! vlan mode lqvlan gvrp ! snmp-server version v1-v2c snmp-server community public ro snmp-server community private rw snmp-server trap-mode trap ! lldp run lldp timer 30 ! ! dhcp-relay option82 dhcp-relay option82 remote-id-type other dhcp-relay option82 man-id 1234567890123 ! ! interface ethernet 1/1 no shutdown speed-duplex Auto no flowcontrol media cable-mode auto --More-- </pre>
Error messages	N/A
Related commands	show running-config

show snmp

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

Commands

show snmp

Syntax Description	snmp	Display SNMP configuration
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	<pre> MOXA# show snmp SNMP Read/Write Settings 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 Private MIB information </pre>	

	Switch Object ID : enterprise.8691.7.15
Examples	N/A
Error messages	N/A
Related commands	snmp-server community snmp-server host snmp-server trap-mode snmp-server user snmp-server version

show storm-control

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

Commands

show storm-control

Syntax	stom-control	Display storm protection settings
Description		
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show storm-control Storm Supress: Broadcast,DLF	
Error messages	N/A	
Related commands	storm-control	

show system

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

Commands

show system

Syntax	show	Show running system information
Description	system	System hardware and software status
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	MOXA# show system System Information System Name : Managed Redundant Switch 09458 System Location : Xidian No. 135 6F Taiwan System Description : MOXA PT Series Maintainer Information : 8860289191230 MAC Address : 00:90:E8:1D:24:36 System Uptime : 0d0h6m46s	
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	show	Show running system information
Description	Users	Display login user settings
Defaults	N/A	
Command Modes	Privileged EXEC/ User EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show users Login account information: Name Authority ----- admin admin user user</pre>	
Error messages	N/A	
Related commands	username	

show vlan

Use the **show vlan** user EXEC command to display VLAN status information.

Commands

show vlan

Syntax	show	Show running system information
Description	vlan	Display VLAN status
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre>MOXA# show vlan vlan mode: 802.1Q vlan mgmt vlan: 1 VLAN 1: Access Ports: 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, Trunk Ports: Hybrid Ports:</pre>	

PT

show vlan config

Use the **show vlan** user EXEC command to display VLAN configuration information.

Commands

show vlan config

Syntax	show	Show running system information
Description	vlan	Display VLAN status
	config	Display VLAN configuration
Defaults	N/A	
Command Modes	Privileged EXEC	
Usage Guidelines	N/A	
Examples	<pre> 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), Port Trunk Native vlan Port Fixed VLAN (Tagged) Port Forbidden VLAN Port Fixed VLAN (Untagged) Current VLAN interface vid: 1, 2, </pre>	
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	shutdown	Shutdown the selected interface
Description		
Defaults	None	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	<pre> MOXA(config-if)# shutdown MOXA(config-if)# no shutdown </pre>	
Error messages	Cannot configure on trunk member port 1/1!	

Related commands	show interfaces ethernet show interfaces trunk
------------------	---

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 *text mode*

Syntax	snmp-server	Configure SNMP server
Description	community	SNMP community setting
	<i>text</i>	SNMP community string
	<i>mode</i>	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(config)# snmp-server community public ro	
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 *text*

no snmp-server contact

Syntax	snmp-server	Configure SNMP server
Description	contact	Switch maintainer contact information
	<i>text</i>	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(config)# snmp-server contact <STRING:token1> - Maintainer contact information MOXA(config)# no snmp-server contact	
Error messages	Length of maintainer info is too long	

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 *text*

no snmp-server description

Syntax	snmp-server	Configure SNMP server
Description	description	Switch description
	<i>text</i>	Description string
Defaults	The default description is the model name.	
Command Modes	Global configuration	
Usage Guidelines	<p><i>text</i> parameter can be set as string separated by space.</p> <p>Maximum string tokens are 5.</p> <p>Maximum length of switch maintainer contact info is 40.</p>	
Examples	<pre>MOXA(config)# snmp-server description MOXA PT Series MOXA(config)# exit MOXA# show system System Information System Name : Managed Redundant Switch 09458 System Location : Xidian No. 135 6F Taiwan System Description : MOXA PT Series Maintainer Information : 8860289191230 MAC Address : 00:90:E8:1D:24:36 System Uptime : 0d0h6m46s</pre>	
Error messages	Length of system description is too long	
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	snmp-server	Configure SNMP server
Description	host	SNMP host setting
	<i>host-addr</i>	SNMP host address
	<i>community-string</i>	SNMP Community string
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	MOXA(config)# snmp-server host 192.168.127.253 moxacli 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 *text*

no snmp-server location

Syntax	snmp-server	Configure SNMP server
Description	location	Switch location
	<i>text</i>	Location string
Defaults	The default text is Switch Location	
Command Modes	Global configuration	
Usage Guidelines	<p>"text" parameter can be set as string separated by space.</p> <p>Maximum string tokens are 5.</p> <p>Maximum length of switch location is 80.</p>	
Examples	<pre>MOXA(config)# snmp-server location <STRING:token1> - Location string token 1 MOXA(config)# no snmp-server location</pre>	
Error messages	Length of location is too long	
Related commands	show snmp	

snmp-server trap-mode

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 inform [*retry times* *timeout seconds*]

no snmp-server trap-mode

Syntax	snmp-server	Configure SNMP server
Description	trap-mode	SNMP Trap/Inform mode setting
	trap	SNMP Trap
	trap-v2c	SNMP Trap v2c instead of v1
	inform	SNMP Inform
	retry	Inform retries times
	<i>times</i>	1 to 99
	timeout	Timeout timer

	<i>seconds</i>	1 to 300 seconds
Defaults	The default mode is "trap"	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# snmp-server trap-mode trap MOXA(config)# snmp-server trap-mode inform retry 3 timeout 10 MOXA(config)# no snmp-server trap-mode	
Error messages	Invalid inform retries value !!! Invalid inform timeout value !!!	
Related commands	show snmp	

snmp-server user

To configure a user and its authentication type and password to a Simple Network Management Protocol (SNMP), use the **snmp-server user** global configuration command.

Commands

snmp-server user *username* **auth** *auth-type* *password*

Syntax Description	snmp-server	Configure SNMP server
	user	SNMP user setting
	<i>user-privilege</i>	SNMP user privilege
	auth	Specifies which authentication level should be used
	<i>auth-type</i>	no-auth md5 sha
	<i>password</i>	Password (maximum 30 characters)
Defaults	N/A	
Command Modes	Global configuration	
Usage Guidelines	<i>username</i> is only allowed to be set as "admin" or "user" <i>auth-type</i> is only allowed to be set as "no-auth", "md5" or "sha"	
Examples	MOXA(config)# snmp-server user admin auth md5 moxacli	
Error messages	SNMP user must be (admin user)!! SNMP authtype must be (no-auth md5 sha)!! Admin/User Password must be at least 8 bytes !!! Admin/User Data Encryption must be at least 8 bytes !!!	
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	Global configuration
Modes	
Usage	N/A
Guidelines	
Examples	<pre>MOXA(config)# snmp-server version v1-v2c-v3 - Version 1, 2C and 3 support v1-v2c - Version 1 and 2C support v3 - Only version 3 support</pre>
Error messages	N/A
Related commands	show snmp

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	spanning-tree	Configure spanning tree
	forward-delay	Configure spanning tree BPDU forward delay
	<i>seconds</i>	Range from 4 to 30 seconds
Defaults	Forward delay = 15 sec.	
Command	Redundancy configuration	
Modes		
Usage	$2 * (\text{hello-time} + 1.0 \text{ sec}) \leq \text{max-age} \leq 2 * (\text{forward-delay} - 1.0 \text{ sec})$	
Guidelines		
Examples	<pre>MOXA(config-rdnt)# spanning-tree forward-delay <UINT:seconds> - Range from 4 to 30 seconds</pre>	
Error messages	The BPDU forward delay time must be in the range from 4 to 30 sec.	
	The formula must be obeyed: $2 * (\text{Hello Time} + 1 \text{ sec}) \leq \text{Max age} \leq 2 * (\text{Forward Delay} - 1 \text{ sec})$	
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	spanning-tree	Configure spanning tree
	hello-time	Configure spanning tree BPDU hello time
	<i>seconds</i>	Range from 1 to 2 seconds

Defaults	Hello time = 2 sec.
Command Modes	Redundancy configuration
Usage Guidelines	$2 * (\text{hello-time} + 1.0 \text{ sec}) \leq \text{max-age} \leq 2 * (\text{forward-delay} - 1.0 \text{ sec})$
Examples	MOXA(config-rdnt)# spanning-tree hello-time <UINT:seconds> - Range from 1 to 2 seconds
Error messages	BPDU hello time must be in the range from 1 to 2 sec. The formula must be obeyed: $2 * (\text{Hello Time} + 1 \text{ sec}) \leq \text{Max age} \leq 2 * (\text{Forward Delay} - 1 \text{ sec})$
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
	<i>seconds</i>	Range from 6 to 40 seconds
Defaults	Forward delay = 20 sec.	
Command Modes	Redundancy configuration	
Usage Guidelines	$2 * (\text{hello-time} + 1.0 \text{ sec}) \leq \text{max-age} \leq 2 * (\text{forward-delay} - 1.0 \text{ sec})$	
Examples	MOXA(config-rdnt)# spanning-tree max-age <UINT:seconds> - Range from 6 to 40 seconds	
Error messages	The BPDU forward delay time must be in the range from 4 to 30 sec. The formula must be obeyed: $2 * (\text{Hello Time} + 1 \text{ sec}) \leq \text{Max age} \leq 2 * (\text{Forward Delay} - 1 \text{ sec})$	
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
	<i>cost</i>	Configure mstp cist port path cost
Defaults	<i>cost=0</i>	
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
	<i>priority</i>	Configure mstp cist port priority
Defaults	<i>priority = 128</i>	
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
	<i>priority</i>	Set mstp cist bridge priority
Defaults	priority = 32768	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-rdnt)# spanning-tree mst cist priority 32768 <UINT:priority> - Set mstp cist bridge priority	
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-time

Use the **spanning-tree mst forward-time** 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.

Commands

spanning-tree mst forward-time *time*

no spanning-tree mst forward-time

Syntax Description	spanning-tree	Configure spanning tree
	mst	Configure mstp
	forward-time	Set mstp forwarding delay
	<i>time</i>	Set mstp forwarding delay
Defaults	<i>time=15</i>	
Command Modes	Redundancy configuration	
Usage Guidelines	$2 * (\text{hello-time} + 1.0 \text{ sec}) \leq \text{max-age} \leq 2 * (\text{forward-delay} - 1.0 \text{ sec})$	
Examples	MOXA(config-rdnt)# spanning-tree mst forward-time 15 <UINT:time> - Set mstp forwarding delay	
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
	<i>time</i>	set mstp hello time
Defaults	<i>time=2</i>	
Command Modes	Redundancy configuration	
Usage Guidelines	$2 * (\text{hello-time} + 1.0 \text{ sec}) \leq \text{max-age} \leq 2 * (\text{forward-delay} - 1.0 \text{ sec})$	

Examples	MOXA(config-rdnt)# spanning-tree mst hello-time 1 <UINT:time> - set mstp hello time
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.

Commands

spanning-tree mst instance *instance-id* **vlan** *vlan-id-list*

no spanning-tree mst instance *instance-id* **vlan** *vlan-id-list*

Syntax Description	spanning-tree	Configure spanning tree
	mst	Configure mstp
	Instance	Configure mstp msti
	<i>instance-id</i>	MSTP instance ID
	vlan	Configure mstp msti vlan mapping
	<i>vlan-id-list</i>	Configure mstp msti vlan mapping
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# spanning-tree mst instance 1 vlan 2 <STRING:instids> - Configure mstp msti <STRING:vidlist> - Configure mstp msti vlan mapping	
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
	<i>instance-id-list</i>	MSTP instance IDs
	cost	Configure mstp msti port path cost
	<i>cost</i>	Configure mstp msti port path cost
Defaults	<i>cost</i> =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
	<i>instance-id-list</i>	MSTP instance ID
	port-priority	Configure mstp msti port priority
	<i>priority</i>	Configure mstp msti port priority
Defaults	<i>priority = 128</i>	
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.

Commands

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
	<i>instance-id</i>	MSTP instance ID
	priority	Set mstp msti bridge priority

	<i>priority</i>	Set mstp msti bridge priority
Defaults	priority = 32768	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-rdnt)# spanning-tree mst instance 1 priority 32768 <UINT:priority> - Set mstp msti bridge priority	
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
	<i>age</i>	Set mstp max age
Defaults	<i>age=20</i>	
Command Modes	Redundancy configuration	
Usage Guidelines	2*(hello-time + 1.0 sec) <= max-age <= 2*(forward-delay - 1.0 sec)	
Examples	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
	<i>hops</i>	Set mstp max hops

Defaults	<i>hops=20</i>
Command	Redundancy configuration
Modes	
Usage	$2 * (\text{hello-time} + 1.0 \text{ sec}) \leq \text{max-age} \leq 2 * (\text{forward-delay} - 1.0 \text{ sec})$
Guidelines	
Examples	MOXA(config-rdnt)# spanning-tree mst max-hops 10 <UINT:hops> - Set mstp max hops
Error messages	MSTP max hops must be in the range from 6 to 40 MSTP max hops set error
Related commands	show redundancy mst configuration

spanning-tree mst name

Use the **spanning-tree mst name** redundancy configuration command on the switch stack to set the name of MSTP region for the spanning-tree.

Commands

spanning-tree mst name *region-name*

Syntax Description	spanning-tree	Configure spanning tree
	mst	Configure mstp
	name	Set mstp regional name
	<i>region-name</i>	Set mstp regional name
Defaults	N/A	
Command	Redundancy configuration	
Modes		
Usage	N/A	
Guidelines		
Examples	MOXA(config-rdnt)# spanning-tree mst name mstp <STRING:region> - Set mstp regional name	
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
	<i>revision-level</i>	Set mstp revision level
Defaults	<i>revision-level=0</i>	
Command	Redundancy configuration	
Modes		
Usage	N/A	
Guidelines		

Examples	MOXA(config-rdnt)# spanning-tree mst revision 1 <UINT:level> - Set mstp revision level
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** redundancy configuration command on the switch to set the switch priority for the spanning-tree. Use the **no** form of this command to return to the default setting.

Commands

spanning-tree priority *priority*

no spanning-tree priority

Syntax	spanning-tree	Configure spanning tree
Description	priority	Configure spanning tree bridge priority
	<i>priority</i>	Range from 0 to 61440, and must be the multiples of 4096
Defaults	priority = 32768	
Command Modes	Redundancy configuration	
Usage Guidelines	0 <= priority <= 61440, and must be multiples of 4096.	
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 61440	
	The bridge priority must be the multiples of 4096	
Related commands	show redundancy spanning-tree	

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	spanning-tree	Enable spanning tree
Description		
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	spanning-tree	Enable spanning tree
Description	cost	Configure port path cost
	<i>cost</i>	Range from 1 to 200000000
Defaults	cost = 200000	
Command	Interface configuration	
Modes		
Usage	1 <= Cost <= 200000000	
Guidelines		
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	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	Interface configuration	
Modes		
Usage	N/A	
Guidelines		
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 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 *priority*

no spanning-tree priority

Syntax	spanning-tree	Enable spanning tree
Description	priority	Configure port priority
	<i>priority</i>	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** | **1G-Full** | **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
	1G-Full	Speed 1G-Full
	Auto	Speed Auto
Defaults	The default is Auto	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config)# interface ethernet 1/1 MOXA(config-if)# speed-duplex 100M-Full	
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	<pre>MOXA# sshkeygen generating ssh host key ... generating ssh host key : done</pre>	

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	<pre>MOXA# sslcertgen generating ssl certificate ... generating ssl certificate : done</pre>	

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 }

no storm-control bcast

no storm-control mcast

no storm-control

Syntax Description	storm-control	Storm protection
	bcast	Storm protection for broadcast traffic
	mcast	Storm protection for Multicast traffic
Defaults	The broadcast storm protection is default enabled.	
Command Modes	Global configuration	
Usage Guidelines	N/A	

Examples	<pre> storm-control bcast - Storm protection for broadcast traffic mcast - Storm protection for Multicast traffic </pre>
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 switchport mode 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
	<i>vlan-id</i>	1 to 4094
Defaults	<i>vlan-id</i> = 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	<pre> MOXA(config-if)# switchport access vlan 2 <UINT:vlanid> - 1 to 4094 </pre>	
Error messages	vlan 4097 is invalid!! should be range from 1 to 4094	
Related commands	<pre> show vlan show vlan config </pre>	

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
	<i>vlan-id-list</i>	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 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
	<i>vlan-id-list</i>	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
	<i>vlan-id-list</i>	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
	<i>vlan-id</i>	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

	<i>vlan-groups</i>	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
	<i>vlan-id-list</i>	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
	<i>vlan-id-list</i>	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
	<i>vlan-id-list</i>	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
	<i>vlan-id-list</i>	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
	<i>vlan-id</i>	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	

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	trunk-group	Join trunk group as members
Description	<i>trunk_id</i>	Trunk ID. From 1 to 4
Defaults	N/A	
Command Modes	Interface configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-if)# trunk-group <UINT:trunk_id> - Trunk ID. From 1 to 4	
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 }

no trunk-mode

Syntax	trunk-mode	Trunk mode configuration
Description	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(config-if)# trunk-mode static - Configure as static trunk lacp - Configure as LACP trunk	
Error messages	This setting cannot be applied on normal port!	
Related commands	show interfaces trunk	

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	turbo-chain	Configure turbo chain
Description	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
	<i>module/port</i>	Port ID. E.g., 1/3, 2/1,...
Defaults	N/A	
Command Modes	redundancy configuration	
Usage Guidelines	N/A	
Examples	MOXA(config-rdnt)# turbo-chain role head 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
	<i>primary-port</i>	Port ID. E.g., 1/3, Trk2,...
	secondary	Turbo ring v1 ring ports setting
	interface	Turbo ring v1 ring ports setting
	<i>secondary-port</i>	Port ID. E.g., 1/3, Trk2,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	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 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
	<i>primary-port</i>	Primary port ID. E.g., 1/3, Trk2,...

	coupling-control-port	Turbo ring v1 coupling ports setting
	interface	Turbo ring v1 ring ports setting
	<i>secondary-port</i>	Secondary port ID. E.g., 1/3, Trk2,...
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	<pre>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,...</pre>	
Error messages	Interface 2-1 not exist One port is the same in ring ports or coupling ports	
Related commands	show 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	turbo-ring-v1	Configure turbo ring v1
Description	master	Set ring as master
Defaults	N/A	
Command Modes	Redundancy configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config-rdnt)# turbo-ring-v1 master master - Set ring as master</pre>	
Error messages	N/A	
Related commands	show 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	turbo-ring-v2	Configure turbo ring v2
Description	<i>ring-id</i>	Turbo ring v2 ring id
	primary	Turbo ring v2 ring ports setting
	interface	Turbo ring v2 ring ports setting
	<i>primary-port</i>	Port ID. E.g., 1/3, 2/1,...
	secondary	Turbo ring v2 ring ports setting

	interface	Turbo ring v2 ring ports setting
	<i>secondary-port</i>	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	<pre>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,...</pre>	
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 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
	<i>backup-port</i>	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	<pre>MOXA(config-rdnt)# turbo-ring-v2 coupling backup interface 2/1 <STRING:pri_port> - Port ID. E.g., 1/3, Trk2,...</pre>	
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 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
	<i>primary-port</i>	Port ID. E.g., 1/3, 2/1,...
	backup	Turbo ring v2 ring ports setting
	interface	Turbo ring v2 ring ports setting
	<i>secondary-port</i>	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(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 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
	<i>primary-port</i>	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(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!!!	
Related commands	show 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
	<i>ring-id</i>	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(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 turbo-ring-v2	

trusted-access

Same as **access-ip**.

Commands

trusted-access [*ip-address netmask*]

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

Syntax	trusted-access	Enable the trusted IP list for access
Description	<i>ip-address</i>	IP address
	<i>netmask</i>	IP netmask
Defaults	The feature is disabled by default.	
Command Modes	VLAN configuration as management VLAN	
Usage Guidelines	This feature will take effect when the "trusted-access" command is executed.	
Examples	<pre>MOXA(config)# interface mgmt MOXA(config-vlan)# trusted-access 10.10.10.10 255.255.255.0 <IPV4ADDR:ipaddr> - IP address <IPV4ADDR:netmask> - IP netmask MOXA(config-vlan)# trusted-access</pre>	
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	

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 { **admin** | **user** } **password** *password*

no username { **admin** | **user** } **password**

Syntax Description	username	Configuration for login account authentication
	<i>username</i>	User name
	privilege	Privilege for account
	<i>privilege-level</i>	3 values, "admin" and "user" for account level, "no login" indicates account as non-login user
	password	Specify the password
	<i>password</i>	Password string (Length of password should be from 4 to 16, and empty password is no longer allowed)
Defaults	There is no password for each user	
Command Modes	Global configuration	
Usage Guidelines	N/A	
Examples	<pre>MOXA(config)# username admin password 1234 <LF> MOXA(config)# username user password 5678 <LF></pre>	
Error messages	N/A	

Related commands	show users
------------------	------------

version

Use the **version** command in router configuration mode as RIP on the switch to change the version of the current running RIP.

Commands

version *version*

Syntax	version	Set RIP version
Description	<i>version</i>	1 2 1c
Defaults	Default is 1 (i.e. RIP version 1)	
Command Modes	Router configuration as RIP	
Usage Guidelines	N/A	
Examples	<pre>MOXA# configure terminal MOXA(config)# router rip MOXA(config-rip)# version 2 MOXA(config-rip)# MOXA# show ip rip RIP Protocol : Enable RIP version : V2 Distribution Connected : Enable Static : Disable OSPF : Disable RIP Enable Table Interface Name IP VID Enable ----- vlan2if 192.168.102.1 2 Enable</pre>	
Error messages	Invalid version	
Related commands	N/A	

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	vlan	Configure VLAN parameters
Description	create	Configure VLAN parameters
	<i>vlan-id-list</i>	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(config)# vlan create 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 config

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 | unaware }

no vlan mode

Syntax Description	vlan	Configure VLAN parameters
	mode	Set (default) vlan mode
	1qvlan	IEEE 802.1Q
	pvlan	Port-based vlan
	unaware	Unaware 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(config)# vlan mode 1qvlan 1qvlan - IEEE 802.1Q pvlan - Port-based vlan unaware - Unaware vlan	
Error messages	N/A	
Related commands	show vlan	

vrrp

To configure the Virtual Router Redundancy Protocol (VRRP) on an interface, use the **vrrp** command in VRRP interface configuration mode. To disable the VRRP configuration, use the **no** form of this command

Commands

vrrp

vrrp vrid vrip ip-address

no vrrp

Syntax Description	vrrp	VRRP interface setting
	vrid	VRRP interface virtual router ID
	vrip	set virtual router ID and virtual IP
	ip-address	virtual IP(IPv4 address)
Defaults	VRRP is not configured	
Command Modes	VRRP interface configuration	

Usage Guidelines	Use vrrp command in VLAN configuration mode to enable vrrp in the VLAN interface.
Examples	MOXA(config-vlan)# vrrp 1 vrip 1.1.1.1 MOXA(config-vlan)# no vrrp
Error messages	Entry not Found!
Related commands	vrrp preempt vrrp priority show ip vrrp

vrrp preempt

VRRP preempt is enabled by default. This means that a VRRP router with higher priority than the master VRRP router will take over as master router. To disable this feature, use the **no** form of this command.

Commands

vrrp preempt

no vrrp preempt

Syntax	vrrp	VRRP interface setting
Description	preempt	VRRP preemption mode enable VRRP preemption mode disable
Defaults	VRRP preempt is enable	
Command Modes	VRRP interface configuration	
Usage Guidelines	Use vrrp command in VLAN configuration mode to enable vrrp in the VLAN interface.	
Examples	MOXA(config-vlan)# vrrp preempt MOXA(config-vlan)# no vrrp preempt	
Error messages	Entry not Found!	
Related commands	vrrp vrrp priority	

vrrp priority

To set the priority of the virtual router, use the **vrrp priority** command in VRRP interface configuration mode. To remove the priority of the virtual router, use the **no** form of this command.

Commands

vrrp priority

no vrrp priority

Syntax	vrrp	VRRP interface setting
Description	priority	VRRP priority (1 to 254) Set VRRP priority to default(100)
Defaults	priority 100	
Command Modes	VRRP interface configuration	
Usage Guidelines	Use vrrp command in VLAN configuration mode to enable vrrp in the VLAN interface.	
Examples	MOXA(config-vlan)# vrrp priority 100 MOXA(config-vlan)# no vrrp priority	

Error messages	Entry not Found!
	Invalid parameters!
Related commands	vrrp vrrp preempt

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-fail
| radius-auth-fail | topology-changed | coupling-changed | master-changed | rstp-admin-changed
| rstp-topology-changed | turbo-ring-break | di1-trans-on|di1-trans-off } { 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-fail | radius-auth-fail | topology-changed | coupling-changed | master-changed |
rstp-admin-changed | rstp-topology-changed | turbo-ring-break | di1-trans-on|di1-trans-off }
active}
```

Syntax Description	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-fail	
	radius-auth-fail	
	topology-changed	
	coupling-changed	
	master-changed	
	rstp-admin-changed	
	rstp-topology-changed	
	turbo-ring-break	
	di1-trans-on	
di1-trans-off		
action		
<i>action-index</i>		
severity		
<i>severity-level</i>		
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+Relay2(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)# 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

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 rx-threshold 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	
	port-event	
	event	
	link-on	
	link-off	
	traffic-overload	
	<i>rx-threshold</i>	
	<i>duration</i>	
	action	
	<i>action-index</i>	
	severity	
	<i>severity-level</i>	
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+Relay2(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