

NPort S9000 Series Command Line Interface

Edition 1.0, March 2017

www.moxa.com/product



© 2017 Moxa Inc. All rights reserved.

NPort S9000 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

© 2017 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 the NPort S9000 to CLI Mode	1-1
Basic Operation	1-2
Useful Interactive "Help" Features	1-3
2. Commands	2-1
2.1 Root Layer Commands.....	2-1
2.1.1 quit	2-1
2.1.2 exit	2-1
2.1.3 reload	2-2
2.1.4 terminal.....	2-2
2.1.5 login.....	2-3
2.1.6 copy	2-3
2.1.7 save	2-4
2.1.8 ping	2-4
2.1.9 clear.....	2-4
2.1.10 show.....	2-5
2.1.11 configure	2-7
2.1.12 sslcertgen.....	2-8
2.1.13 sshkeygen	2-8
2.2 Configuration Mode Commands	2-9
2.2.1 password-policy minimum-length	2-9
2.2.2 password-policy complexity-check.....	2-9
2.2.3 password-policy complexity-check.....	2-10
2.2.4 password-policy password-lifetime	2-10
2.2.5 login-lockout retry-threshold	2-11
2.2.6 login-lockout lockout-time	2-11
2.2.7 logging-capacity.....	2-12
2.2.8 hostname.....	2-12
2.2.9 snmp-server location	2-13
2.2.10 snmp-server description	2-13
2.2.11 snmp-server contact	2-14
2.2.12 snmp-server community.....	2-14
2.2.13 snmp-server version	2-14
2.2.14 snmp-server read-write-user	2-15
2.2.15 snmp-server read-only-user.....	2-15
2.2.16 snmp-server host	2-16
2.2.17 snmp-server trap-mode	2-16
2.2.18 interface.....	2-17
2.2.19 clock set.....	2-17
2.2.20 clock timezone	2-18
2.2.21 clock summer-time	2-18
2.2.22 ntp remote-server	2-19
2.2.23 ntp refresh-time	2-19
2.2.24 ntp server.....	2-19
2.2.25 irig-b	2-20
2.2.26 time-source	2-20
2.2.27 logging.....	2-20
2.2.28 line-swap-fast-recover	2-21
2.2.29 ip auto-logout	2-21
2.2.30 ip http-server.....	2-21
2.2.31 ip http-server login-message	2-22
2.2.32 ip http-server login-failure-message	2-22
2.2.33 ip telnet	2-23
2.2.34 ip ssh.....	2-23
2.2.35 ip snmp-agent.....	2-23
2.2.36 ip moxa-service.....	2-24
2.2.37 ip mms-service	2-24
2.2.38 ip igmp-snooping.....	2-24
2.2.39 ip igmp-snooping vlan.....	2-25
2.2.40 ip igmp-snooping querier vlan	2-25
2.2.41 ip igmp-snooping query-interval	2-26
2.2.42 ip igmp-snooping enhanced	2-26
2.2.43 ip igmp static-group.....	2-27
2.2.44 ip dhcp-relay server.....	2-27
2.2.45 ip dhcp-relay option82	2-28
2.2.46 ip dhcp-relay option82 remote-id-type	2-28
2.2.47 serial	2-29

2.2.48	vlan create	2-29
2.2.49	vlan mode	2-29
2.2.50	gvrp.....	2-30
2.2.51	redundancy.....	2-30
2.2.52	redundancy mode.....	2-30
2.2.53	auth mode.....	2-31
2.2.54	auth tacacs+	2-31
2.2.55	auth tacacs+ server-ip.....	2-31
2.2.56	auth tacacs+ server-port.....	2-32
2.2.57	auth tacacs+ shared-key	2-32
2.2.58	auth tacacs+ auth-type.....	2-33
2.2.59	auth tacacs+ timeout.....	2-33
2.2.60	lldp enable.....	2-34
2.2.61	lldp timer	2-34
2.2.62	dot1x auth.....	2-34
2.2.63	dot1x reauth.....	2-35
2.2.64	dot1x radius	2-35
2.2.65	monitor.....	2-36
2.2.66	email-warning server	2-36
2.2.67	email-warning mail-address	2-37
2.2.68	email-warning account	2-37
2.2.69	email-warning send test email.....	2-38
2.2.70	email-warning event	2-38
2.2.71	relay-warning override	2-39
2.2.72	relay-warning config relay	2-39
2.2.73	relay-warning event.....	2-40
2.2.74	garp.....	2-40
2.2.75	ptp enable	2-41
2.2.76	ptp mode.....	2-41
2.2.77	ptp log-sync-interval.....	2-42
2.2.78	ptp log-announce-interval.....	2-42
2.2.79	ptp announce-receipt-timeout	2-42
2.2.80	ptp log-min-delay-req-interval	2-43
2.2.81	ptp log-min-pdelay-req-interval.....	2-43
2.2.82	ptp domain-number	2-43
2.2.83	ptp transport	2-44
2.2.84	ptp priority1.....	2-44
2.2.85	ptp priority2.....	2-44
2.2.86	ptp utc-offset	2-45
2.2.87	loopprotection	2-45
2.2.88	qos mode	2-45
2.2.89	qos mapping	2-46
2.2.90	account add.....	2-46
2.2.91	account edit.....	2-47
2.2.92	system-log system	2-47
2.2.93	system-log network	2-48
2.2.94	system-log config	2-48
2.2.95	system-log opmode	2-49
2.2.96	reset-button	2-49
2.2.97	console auth	2-49
2.2.98	console try-next-auth.....	2-50
2.3	Commands for Configuring Interface	2-50
2.3.1	Ethernet Interface Commands	2-50
2.3.2	VLAN Interface Commands.....	2-61
2.3.3	Serial Interface Commands	2-64
2.3.4	Protocol Modbus Interface Commands	2-78
2.3.5	Protocol DNP3 Interface Commands	2-83

Command Modes

Command Line Interface (CLI)

The command line interface (CLI) for the NPort S9000 series 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.

The commands are separated into several tiers for different type of commands. The first tier commands are the root-layer commands, which should be executed under the root directory for some major function categories. These commands include view the settings, configuring the settings, etc. Other commands for different tiers should be executed in their relative folders. Please find all the details in Chapter 2, which explains how to use the commands to configure or monitor the NPort S9000 series.

Configuring the NPort S9000 to CLI Mode

The default configuration mode for both the serial, Telnet, and SSH console is MENU mode. To change the NPort S9000 to CLI configuration mode, log in the NPort S9000's serial, Telnet or SSH console and go to **Login Mode** under **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 username is **admin**, and the password is **moxa**.)

1. Select **Basic Settings**.

```
NPport S9450I-2S-SC-HV V1.0
-----
[Basic] [Serial] [Ethernet] [Eth. Adv.] [Management] [Monitor] [Restart] [Exit]
Basic settings for network and system parameter.
ESC: Previous menu  Enter: Select
```

2. Select **Login mode**.

```
NPport S9450I-2S-SC-HV V1.0
Basic
[General] [Time Settings] [Network] [GARP] [Login Mode] [Activate] [Quit]
Login Mode Setting
ESC: Previous menu  Enter: Select
```

3. Press **y** to activate.

```

NPort S9450I-2S-SC-HV V1.0

Basic
[General] [Time Settings] [Network] [GARP] [Login Mode] [Activate] [Quit]
Login Mode Setting
ESC: Previous menu Enter: Select

Current login mode: Menu
Press Y to change to CLI mode? (Y/N)

```

4. Now log in to access CLI display mode.

```

login as:

-----
NPort S9450I-2S-SC-HV V1.0
NPort S9450I-2S-SC-HV#

```

After changing to CLI mode, the 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.

```

NPort S9450I-2S-SC-HV V1.0
-----
NPort S9450I-2S-SC-HV#
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
sslcrtgen     - Generate SSL certificate.
sshkeygen     - Generate SSH host key.
NPort S9450I-2S-SC-HV#

```

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

```

NPort S9450I-2S-SC-HV# configure
NPort S9450I-2S-SC-HV(config)#

```

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

```

NPort S9450I-2S-SC-HV(config)# exit
NPort S9450I-2S-SC-HV#

```

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

```
NPort S9450I-2S-SC-HV(config)#  
NPort S9450I-2S-SC-HV#
```

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).

Commands

2.1 Root Layer Commands

After logging in to the CLI console, users will be at the root folder of the CLI console. In the root folder, users can see the system settings, ping other devices, upgrade firmware and so on.

2.1.1 quit

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

Commands

quit

Syntax Description	quit	Exit command line interface
Defaults	N/A	
Permission	Admin group, User group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV# quit	

2.1.2 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	
Permission	Admin group, User group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV(config)# exit NPort S9450I-2S-SC-HV#	

2.1.3 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**]

reload [**serial**] {**p1** | **p2** | **p3** | **p4** | **all**}

Syntax Description	reload	Halt and perform a cold restart
	factory-default	Halt and perform a cold restart with factory default
	serial	Restart a serial port.
	p1	Serial port 1.
	p2	Serial port 2.
	p3	Serial port 3.
	p4	Serial port 4.
	all	All serial ports.
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV# reload NPort S9450I-2S-SC-HV# reload factory-default NPort S9450I-2S-SC-HV# reload serial p1 p3 NPort S9450I-2S-SC-HV# reload serial all	

2.1.4 terminal

Use the **terminal** privileged command on the device server to Configure terminal page length. Use **terminal default** to set the terminal length to default value.

Commands

terminal *terminal-length*

terminal default length

Syntax Description	terminal	Configure terminal page length
	<i>terminal-length</i>	Terminal page length
	default length	Reset the terminal length to the default
Defaults	20	
Permission	Admin group	
Usage Guidelines	terminal-length: 20 – 100, or set 0 to prevent pagination	
Examples	NPort S9450I-2S-SC-HV# terminal 20 NPort S9450I-2S-SC-HV# terminal default length	

2.1.5 login

Use the **login** privileged command on the device server to configure default login console.

Commands

login mode { menu | cli }

Syntax	login	Change login mode
Description	mode	Login modes
	menu	Legacy menu mode
	cli	Command line interface
Defaults	menu	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9450I-2S-SC-HV# login mode cli	

2.1.6 copy

Use the **copy** privileged command on the device server 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 xmodem 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
	xmodem	Copy from xmodem
	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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	<pre> NPort S9450I-2S-SC-HV# copy tftp device-firmware - System firmware running-config - Current running configuration of system NPort S9450I-2S-SC-HV# 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>	

2.1.7 save

Use the **save** privileged command on the device server to save the configuration to the flash rom.

Commands

save config

Syntax	save config	Save running configuration to flash
Description		
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9450I-2S-SC-HV# save config Saving configuration ... Success	

2.1.8 ping

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

Commands

ping destaddr

Syntax	ping	Send echo messages
Description	<i>destaddr</i>	Ping destination address or hostname
Defaults	N/A	
Permission	Admin group, User group	
Usage	N/A	
Guidelines		
Examples	NPort S9450I-2S-SC-HV# ping 192.168.127.1 PING 192.168.127.1, Send/Recv/Lost = 4/4/0	

2.1.9 clear

Use the **clear** privileged command on the device server to clear the information.

Commands

clear { logging event-log | counters }

Syntax	clear	Clear information
Description	logging event-log	System event logs
	counters	Clear statistic counters
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9450I-2S-SC-HV# clear login event-log NPort S9450I-2S-SC-HV# clear counters	

2.1.10 show

Use the **show** user EXEC command on the device server to display the system informations.

Commands

show { **version** | **running-config** | **startup-config** | **system** | **users** | **ip** | **serial** | **clock** | **snmp** | **gmrp** | **password-policy** | **login-lockout** | **logging-capacity** | **qos** | **loopprotection** | **s2n-conn** | **serial-status** | **serial-error** | **serial-setting** | **serial-alias** | **serial-param** | **system-info** | **network-conn** | **accounts** }

show auth { **mode** | **tacacs+** | **radius** }

show interface ethernet *mod_port* [{ **config** | **rate-limit** | **counters**] }

show interface trunk [*trunk_id_range* [**counters**]]

show interface mgmt [**access-ip**]

show interface serial *port* { **opmode** | **data-packing** }

show interface serial protocol { **modbus** | **dnp3** }

show redundancy { **turbo-ring-v1** | **turbo-ring-v2** | **turbo-chain** | **spanning-tree** }

show redundancy mst { **configuration** | **cist** | **instance** *instid* }

show mac-address-table { **static** | **learned** | **interface ethernet** *mod_port* | **trunk** *trunk_id* }

show logging [**event-log**]

show vlan [**config**]

show port-security *mod_port*

show dot1x { **local-userdb** | **radius** }

show lldp [**entry**]

show port [**monitor**]

show email-warning [**config**]

show relay-warning [{ **config** | **status** }]

show garp [**timer**]

show ptp { **settings** | **status** | **port** [*mod_port*] }

show qos [{ **cos-to-queue** | **dscp-to-queue** }]

Syntax Description	show	Show running system information
	version	System version information
	running-config	Current running configuration of system
	startup-config	System startup configuration
	system	System hardware and software status
	users	Display login user settings
	auth	Display authentication settings
	mode	Display current server mode authentication settings
	tacacs+	TACACS+ authentication
	radius	RADIUS authentication
	ip	Display IP information
	serial	Show serial console setting
	interfaces	Interface status and configuration
	ethernet	IEEE 802.3/IEEE 802.3z
	<i>mod_port</i>	Port ID or list. Ex. 1/1,2,3,2/1-3,5,...
	config	Show interface module/port settings
	rate-limit	Rate limiting configuration
	counters	Display counters in detail
	counters	Display counters
	trunk	Show interface trunk information
	<i>trunk_id_range</i>	Trunk ID (or list)
	counters	Display counters in detail
	mgmt	Display management VLAN information
	access-ip	Display accessible IP list

serial	Show serial info
<i>port</i>	Serial port 1 - n
opmode	Show serial port opmode
data-packing	Show serial port data-packing
protocol	Show serial protocol
modbus	Show Modbus protocol settings
dnp3	Show DNP3 protocol settings
clock	Display the system clock
snmp	Display SNMP configuration
redundancy	Display redundancy protocol status
turbo-ring-v1	Display turbo ring v1 status
turbo-ring-v2	Display turbo ring v2 status
turbo-chain	Display turbo chain status
spanning-tree	Display spanning tree settings
mst	Display multiple spanning tree settings
configuration	Display multiple spanning tree global settings
cist	Display MSTP cist status
instance	Display MSTP msti status
<i>instid</i>	MSTP instance ID
mac-address-table	Display MAC address forwarding table
static	Retrieve static MAC addresses
learned	Retrieve learned MAC addresses
interface	Retrieve MAC address by interface
ethernet	Ethernet Port interface
<i>mod_port</i>	Port ID. Ex. 1/3, 2/1,...
trunk	Trunk interface
<i>trunk_id</i>	Trunk ID. From 1 to 2
logging	Display syslog information
event-log	Display system event logs
vlan	Display VLAN status
config	Display VLAN configuration
gvrp	Display GVRP configuration
port-security	Display port access control table
<i>mod_port</i>	Port ID or list. Ex. 1/1,2,3,2/1-3,5,...
dot1x	Display 802.1x settings
local-userdb	Display current local database
radius	Display 802.1x radius settings
gmrp	Display 802.1x radius settings
lldp	Display LLDP information
entry	LLDP entries
email-warning	Display Email warning configuration
config	Email warning configuration
relay-warning	Display relay warning configuration
config	Relay warning configuration
status	Current relay warning list
garp	Display GARP information
timer	Display GARP timer information
ptp	
settings	Display current PTP configuration
status	Display current PTP port state
port	Display PTP port disable/enable state
<i>mod_port</i>	Display PTP port disable/enable state

	password-policy	Display password policy settings
	login-lockout	Display login lockout settings
	logging-capacity	Display logging capacity settings
	qos	Display QoS configuration
	cos-to-queue	CoS to traffic queue mappings
	dscp-to-queue	DSCP to traffic queue mappings
	loopprotection	Display loop protection settings
	s2n-conn	Display the running serial to network connections
	serial-status	Display the running serial port current status
	serial-error	Display the running serial port error count
	serial-setting	Display the running serial port settings
	serial-alias	Display serial port alias name
	serial-param	Display serial port parameters
	system-info	Display system related status
	network-conn	Display network connection information
	accounts	Show current account informations
Defaults	N/A	
Permission	Admin group, User group	
Usage Guidelines	N/A	
Examples	<pre> NPort S9650I-16-2HV# show version Model Name : NPort S9650I-16-2HV Firmware Version : V1.0 NPort S9650I-16-2HV# show interfaces serial protocol modbus Serial protocol Modbus setting : Initial delay : 0 Send TCP exception : disable Modbus TCP listen port : 502 Modbus TCP response timeout : 1000 Slave ID Map : Channel No. Type Definition Modbus Address Range ----- 1 Modbus Serial Port 1 00001 - 00005 </pre>	

2.1.11 configure

Use the **configure** privileged command on the device server to enter configuration mode.

Commands

configure { terminal }

Syntax	configure	Enter configuration mode
Description	terminal	Configure from the terminal
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	<pre> NPort S9450I-2S-SC-HV# configure NPort S9450I-2S-SC-HV(config)# </pre>	

2.1.12 sslcertgen

Use the **sslcertgen** privileged command on the device server to generate SSL certificate.

Commands

sslcertgen

Syntax Description	sslcertgen	Generate SSL certificate
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV#sslcertgen Generating... it may take a few minutes... generating ssl certificate : done NPort S9450I-2S-SC-HV#	

2.1.13 sshkeygen

Use the **sshkeygen** privileged command on the device server to generate SSH host key.

Commands

sshkeygen

Syntax Description	sshkeygen	Generate SSH host key
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV# sshkeygen Generating... it may take a few minutes... generating ssh host key : done NPort S9450I-2S-SC-HV#	

2.2 Configuration Mode Commands

In the root layer, use the “configure” command to enter configuration mode. In the configuration mode, user could set all system related settings of the device server.

2.2.1 password-policy minimum-length

Use **password-policy minimum-length** global password-policy configuration commands on the device server to configure the minimum password-length with specified characters. Use the **no** form of this command to return to the default.

Commands

password-policy minimum-length *characters*

no password-policy minimum-length

Syntax	password-policy	Global password-policy configuration subcommands
Description	minimum-length	Password minimum length
	<i>characters</i>	4 to 16 characters
Defaults	Password minimum length is 4 by default	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9450I-2S-SC-HV(config)# password-policy minimum-length 8 NPort S9450I-2S-SC-HV(config)# no password-policy minimum-length	

2.2.2 password-policy complexity-check

Use **password-policy complexity-check** global password-policy configuration commands on the device server to enable the password policy. Use the **no** form of this command to disable complexity-check.

Commands

password-policy complexity-check

no password-policy complexity-check

Syntax	password-policy	Global password-policy configuration subcommands
Description	complexity-check	Complexity check
Defaults	Password complexity-check is disable by default	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9450I-2S-SC-HV(config)# password-policy complexity-check	

2.2.3 password-policy complexity-check

Use **password-policy complexity-check** global password-policy configuration commands on the device server to enable the password policy check. Use the **no** form of this command to disable complexity-check.

Commands

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

no password-policy complexity-check { digit | alphabet | special-characters }

Syntax Description	password-policy	Global password-policy configuration subcommands
	complexity-check	Complexity check
	digit	Enable password policy : at least one digit check
	alphabet	Enable password policy : mixed upper and lower case letters check
	special-character s	Enable password policy : at least one special character check
Defaults	Password complexity-check is disable by default Password complexity-check alphabet is disable by default Password complexity-check special-characters is disable by default	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV(config)# password-policy complexity-check digit NPort S9450I-2S-SC-HV(config)# no password-policy complexity-check alphabet	

2.2.4 password-policy password-lifetime

Use **password-policy lifetime** global password-policy configuration commands on the device server to enable the password lifetime and the password lifetime with specified days. Use the **no** form of this command to disable password-lifetime check.

Commands

password-policy password-lifetime [days]

no password-policy password-lifetime

Syntax Description	password-policy	Global password-policy configuration subcommands
	password-lifetime	Password lifetime
	<i>days</i>	90 to 180 days
Defaults	Password lifetime is disable by default Password lifetime is 90 days by default	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV(config)# password-policy password-lifetime NPort S9450I-2S-SC-HV(config)# password-policy password-lifetime 100	

2.2.5 login-lockout retry-threshold

Use **login-lockout retry-threshold** global login-lockout configuration commands on the device server to configure the login-lockout retry-threshold with specified times. Use the **no** form of this command to return to the default.

Commands

login-lockout retry-threshold *retry*

no login-lockout retry-threshold

Syntax	login-lockout	Global login-lockout configuration subcommands
Description	retry-threshold	Login retry threshold
	<i>retry</i>	0 to 10 times(0 to disable)
Defaults	Login retry-threshold is 0 by default	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV(config)# login-lockout retry-threshold 5 NPort S9450I-2S-SC-HV(config)# no login-lockout retry-threshold	

2.2.6 login-lockout lockout-time

Use **login-lockout lockout-time** global login-lockout configuration commands on the device server to configure the login-lockout lockout-time with specified minutes. Use the **no** form of this command to return to the default.

Commands

login-lockout lockout-time *minutes*

no login-lockout lockout-time

Syntax	login-lockout	Global login-lockout configuration subcommands
Description	lockout-time	Login lockout time
	<i>minutes</i>	1 to 60 minutes
Defaults	Login lockout-time is 5 minutes by default	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9450I-2S-SC-HV(config)# login-lockout lockout-time 10 NPort S9450I-2S-SC-HV(config)# no login-lockout lockout-time	

2.2.7 logging-capacity

Use the **logging-capacity** privileged command on the device server to set logging capacity related settings.

Commands

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

Syntax	logging-capacity	Set logging capacity related settings.
Description	over-size-action	Set logging capacity oversize-action.
	overwrite-oldest	Set logging capacity oversize-action : Overwrite oldest event logs
	stop-recording	Set logging capacity oversize-action : Stop recording event logs
Defaults	overwrite-oldest	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	<pre>NPort S9650I-16-2HV(config)# logging-capacity over-size-action stop-recording NPort S9650I-16-2HV(config)# logging-capacity over-size-action overwrite-oldest</pre>	

2.2.8 hostname

To specify or modify the host name for the device 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	no	Negate a command or set its defaults
Defaults	Name is the default device server name with the serial number	
Permission	Admin group	
Usage	Maximum string tokens are 5.	
Guidelines	Maximum device server name length is 30 characters.	
Examples	<pre>NPort S9650I-16-2HV(config)# hostname MOXA Nport device server NPort S9650I-16-2HV(config)# no hostname</pre>	

2.2.9 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	Device server location
	<i>text</i>	Location string
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# snmp-server location moxacorp NPort S9650I-16-2HV(config)# no snmp-server location	

2.2.10 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	Device server description
	<i>text</i>	Description string
Defaults	The default description is the model name.	
Permission	Admin group	
Usage	"text" parameter can be set as string separated by space.	
Guidelines	Maximum string tokens are 5.	
	Maximum length of device server maintainer contact info is 40.	
Examples	NPort S9650I-16-2HV(config)# snmp-server description MOXA nport device NPort S9650I-16-2HV(config)# no snmp-server description	

2.2.11 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	Device server maintainer contact information
	<i>text</i>	Maintainer contact information
Defaults	N/A	
Permission	Admin group	
Usage	"text" parameter can be set as string separated by space. Maximum string tokens are 5. Maximum length of maintainer contact info is 40.	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# snmp-server contact james NPort S9650I-16-2HV(config)# no snmp-server contact	

2.2.12 snmp-server community

To set up the community access string to permit access to the Simple Network Management Protocol (SNMP), use the **snmp-server community** global configuration command.

Commands

snmp-server community *community_str*

Syntax	snmp-server	Configure SNMP server
Description	community	SNMP community setting
	<i>community_str</i>	SNMP community string
Defaults	overwrite-oldest	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# snmp-server community public	

2.2.13 snmp-server version

To set up the snmp version, use the **snmp-server version** global configuration command.

Commands

snmp-server version [**v1-v2c-v3** | **v1-v2c** | **v3**]

Syntax	snmp-server	Configure SNMP server
Description	version	SNMP version setting
	v1-v2c-v3	Version 1, 2C and 3 support
	v1-v2c	Version 1 and 2C support
	v3	Only version 3 support
	Default version is v1-v2c	
Defaults	Default version is v1-v2c	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# snmp-server version v1-v2c-v3	

2.2.14 snmp-server read-write-user

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

Commands

snmp-server read-write-user *username* **auth** {no-auth|md5|sha} *password*

Syntax Description	snmp-server	Configure SNMP server
	read-write-user	SNMP read-write privileged user setting
	<i>username</i>	The name of the read-write privileged user
	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	
Permission	Admin group	
Usage	Username: max 16 characters	
Guidelines	Password: max 16 characters	
Examples	NPort S9650I-16-2HV(config)# snmp-server read-write-user admin auth md5 moxacli	

2.2.15 snmp-server read-only-user

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

Commands

snmp-server read-only-user *username* **auth** {no-auth|md5|sha} *password*

Syntax Description	snmp-server	Configure SNMP server
	read-only-user	SNMP read-write privileged user setting
	<i>username</i>	The name of the read-only privileged user
	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	
Permission	Admin group	
Usage	Username: max 16 characters	
Guidelines	Password: max 16 characters	
Examples	NPort S9650I-16-2HV(config)#snmp-server read-only-user user auth md5 moxacli	

2.2.16 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# snmp-server host 192.168.127.254 moxacli NPort S9650I-16-2HV(config)# no snmp-server host	

2.2.17 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 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
	inform	SNMP Inform
	retry	Inform retries times
	<i>times</i>	1 to 99
	timeout	Timeout timer
	<i>seconds</i>	1 to 300 seconds
	The default mode is "trap"	
Defaults	The default mode is "trap"	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# snmp-server trap-mode trap NPort S9650I-16-2HV(config)# snmp-server trap-mode inform retry 3 timeout 10	

2.2.18 interface

Use the **interface** privileged command on the device server to select an interface to configure.

Commands

interface mgmt

interface trunk *trunk_id_range*

interface ethernet *mod_port*

interface serial *ser_id*

interface serial protocol { modbus | dnp3 }

Syntax Description	interface	Select an interface to configure
	mgmt	Configure management VLAN
	trunk	Configure trunk interface
	<i>trunk_id_range</i>	Trunk ID (or list)
	ethernet	IEEE 802.3/IEEE 802.3z
	<i>mod_port</i>	Port ID or list. Ex. 1/1,2,3,2/1-3,5,...
	serial	Serial port interface
	<i>ser_id</i>	Serial port index (1 to n)
	protocol	Configure serial interface protocols
	modbus	Configure Modbus protocol settings
	dnp3	Configure DNP3 protocol settings
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif) # NPort S9650I-16-2HV(config)# interface ethernet 1/1 NPort S9650I-16-2HV(config-if) # NPort S9650I-16-2HV(config)# interface mgmt NPort S9650I-16-2HV(config-vlan) #</pre>	

2.2.19 clock set

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

Commands

clock set *hh:mm:ss month day year*

Syntax Description	clock	Configure time-of-day clock
	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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	<pre>NPort S9650I-16-2HV(config)# clock set 11:11:11 1 1 2010</pre>	

2.2.20 clock timezone

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

Commands

clock timezone **gmt** *offset-hour offset_minutes*

Syntax	clock	Configure time-of-day clock
Description	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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# clock timezone gmt 5 30	

2.2.21 clock summer-time

Use the **clock summer-time** global configuration command on the device server 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	clock	Configure time-of-day clock
Description	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	
Permission	Admin group	
Usage	When configuring the summer time offset, the start-date and end-date must be configured correctly first.	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# clock summer-time start-date Jan 1 Saturday 12	
	NPort S9650I-16-2HV(config)# clock summer-time end-date Feb 1 Sun 13	

2.2.22 ntp remote-server

Use the **ntp remote-server** global configuration command on the device server 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	ntp	Configure Network Time Protocol
Description	remote-server	Configure NTP server for time query
	server-addr-1	IP address or DNS name
	server-addr-2	IP address or DNS name
Defaults	The default configuration contains one time server "time.nist.gov"	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ntp remote-server 192.168.127.1 time.stdtime.gov.tw	

2.2.23 ntp refresh-time

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

Commands

ntp refresh-time seconds

no ntp refresh-time

Syntax	ntp	Configure Network Time Protocol
Description	refresh-time	Configure NTP query intervals
	seconds	1-9999 seconds
Defaults	Default query interval is 600 sec	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ntp refresh-time 600	

2.2.24 ntp server

Use the **ntp server** global configuration command on the device server to enable the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ntp server	

2.2.25 irig-b

Use the **irig-b** privileged command on the device server to configure the global irig-b settings and serial interface irig-b settings.

Commands

irig-b output { off|pwm|pps }

Syntax	irig-b	Configure irig-b for system irig-b output.
Description	off	Set the irig-b to off.
	pwm	Set the irig-b to pwm.
	pps	Set the irig-b to pps.
Defaults	The default is off	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# irig-b pwm NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# irig-b pps	

2.2.26 time-source

Use the **time-source** privileged command on the device server to configure time source.

Commands

time-source { local|ntp|irig-b|ptp }

Syntax	time-source	Configure the time source of the device server.
Description	local	Time source from local.
	ntp	Time source from ntp.
	irig-b	Time source from irig-b.
	ptp	Time source from ptp.
Defaults	The default is local	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# time-source ntp	

2.2.27 logging

Use the **logging** global configuration command on the device server 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	ip-address	IP or DNS name w/wo. port, Ex:1.2.3.4 or 1.2.3.4:5678
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# logging 192.168.1.1	

2.2.28 line-swap-fast-recover

Use the **line-swap-fast-recovery** global configuration command on the device server 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	line-swap-fast-recovery	Enable Line Swap Fast Recovery feature
Description		
Defaults	This feature is enabled by default.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# line-swap-fast-recovery	

2.2.29 ip auto-logout

Use **ip auto-logout** global configuration commands on the device server to configure the auto-logout for the consoles with specified minutes.

Commands

ip auto-logout *minutes*

Syntax	ip	Global IP configuration subcommands
Description	auto-logout	Auto-logout timer
	<i>minutes</i>	1 to 1440 minutes
Defaults	Auto-logout is 5 minutes by default.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip auto-logout 120	

2.2.30 ip http-server

Use **ip http-server** global configuration commands on the device server 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-server

no ip http-server secure

Syntax	ip	Global IP configuration subcommands
Description	http-server	Enable
	secure	Enable HTTP/HTTPS web service
Defaults	HTTP/HTTPS service is enabled.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip http-server NPort S9650I-16-2HV(config)# ip http-server secure NPort S9650I-16-2HV(config)# no ip http-server	

2.2.31 ip http-server login-message

Use **ip http-server login-message** global configuration commands on the device server to configure the login message. Use the **no** form of this command to return to the default.

Commands

ip http-server login-message *login_string*

no ip http-server login-message

Syntax Description	ip	Global IP configuration subcommands
	http-server	http-server
	login-message	Configure HTTP/HTTPS login message
	<i>login_string</i>	Login message
Defaults	Login-message is "You are accessing a specific industrial automation control system.\r\nThe system usage is monitored, recorded, and subject to audit." by default.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip http-server login-message Welcome NPort S9650I-16-2HV(config)# no ip http-server login-message	

2.2.32 ip http-server login-failure-message

Use **ip http-server login-failure-message** global configuration commands on the device server to configure the login fail message. Use the **no** form of this command to return to the default.

Commands

ip http-server login-failure-message *login_fail_string*

no ip http-server login-failure-message

Syntax Description	ip	Global IP configuration subcommands
	http-server	http-server
	login-failure-message	Configure HTTP/HTTPS login fail message
	<i>login_fail_string</i>	Login message
Defaults	Login-failure-message is "The account or password you entered is incorrect.\r\n(Your account will be temporarily locked if excessive tried.)" by default.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip http-server login-failure-message Login fail! NPort S9650I-16-2HV(config)# no ip http-server login-failure-message	

2.2.33 ip telnet

Use **ip telnet** global configuration commands on the device server to enable telnet service. Use the **no** form of this command to disable telnet service.

Commands

ip telnet
no ip telnet

Syntax	ip	Global IP configuration subcommands
Description	telnet	telnet service
Defaults	Telnet service is enable.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip telnet NPort S9650I-16-2HV(config)# no ip telnet	

2.2.34 ip ssh

Use **ip ssh** global configuration commands on the device server to enable ssh service. Use the **no** form of this command to disable ssh service.

Commands

ip ssh
no ip ssh

Syntax	ip	Global IP configuration subcommands
Description	ssh	ssh service
Defaults	SSH service is enable.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip ssh NPort S9650I-16-2HV(config)# no ip ssh	

2.2.35 ip snmp-agent

Use **ip snmp-agent** global configuration commands on the device server to enable snmp agent. Use the **no** form of this command to disable snmp agent.

Commands

ip snmp-agent
no ip snmp-agent

Syntax	ip	Global IP configuration subcommands
Description	snmp-agent	SNMP agent
Defaults	SNMP agent is enable.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip snmp-agent NPort S9650I-16-2HV(config)# no ip snmp-agent	

2.2.36 ip moxa-service

Use **ip moxa-service** global configuration commands on the device server to enable moxa-service. Use the **no** form of this command to disable moxa-service.

Commands

ip moxa-service

no ip moxa-service

Syntax	ip	Global IP configuration subcommands
Description	moxa-service	Enable Moxa service
Defaults	Moxa service enable.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip moxa-service NPort S9650I-16-2HV(config)# no ip moxa-service	

2.2.37 ip mms-service

Use **ip mms-service** global configuration commands on the device server to enable mms-service. Use the **no** form of this command to disable mms-service.

Commands

ip mms-service

no ip mms-service

Syntax	ip	Global IP configuration subcommands
Description	mms-service	Enable MMS service
Defaults	MMS enable.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip mms-service NPort S9650I-16-2HV(config)# no ip mms-service	

2.2.38 ip igmp-snooping

Use the **ip igmp-snooping** global configuration command on the device server to globally enable Internet Group Management Protocol (IGMP) snooping on the device server. 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.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip igmp-snooping NPort S9650I-16-2HV(config)# no ip igmp-snooping	

2.2.39 ip igmp-snooping vlan

Use the **ip igmp-snooping vlan** global configuration command on the device server 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	ip	Global IP configuration subcommands
Description	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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip igmp-snooping vlan 1 mrouter 1/1 NPort S9650I-16-2HV(config)# no ip igmp-snooping vlan 1 mrouter 1/1	

2.2.40 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	
Permission	Admin group	
Usage Guidelines	The IGMP snooping function must be enabled first	
Examples	NPort S9650I-16-2HV(config)# ip igmp-snooping querier vlan 1 NPort S9650I-16-2HV(config)# no ip igmp-snooping querier vlan 1	

2.2.41 ip igmp-snooping query-interval

Use the **ip igmp-snooping query-interval** global configuration command on the device server 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	ip	Global IP configuration subcommands
Description	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	
Permission	Admin group	
Usage Guidelines	The IGMP snooping function must be enabled first	
Examples	NPort S9650I-16-2HV(config)# ip igmp-snooping query-interval 100	

2.2.42 ip igmp-snooping enhanced

Use the **ip igmp-snooping enhanced** global configuration command on the device server 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.	
Permission	Admin group	
Usage Guidelines	The IGMP snooping function must be enabled first	
Examples	NPort S9650I-16-2HV(config)# ip igmp-snooping enhanced NPort S9650I-16-2HV(config)# no ip igmp-snooping enhanced	

2.2.43 ip igmp static-group

Use the **ip igmp static-group** global configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip igmp static-group 01:00:00:00:00:01 interface 1/2-3 NPort S9650I-16-2HV(config)# no ip igmp static-group	

2.2.44 ip dhcp-relay server

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

Commands

ip dhcp-relay server *serverIndex* *serverAddr*

no ip dhcp-relay server *serverIndex*

Syntax Description	ip	Global IP configuration subcommands
	dhcp-relay	Configure DHCP relay agent parameter
	server	DHCP server IP address
	<i>serverIndex</i>	DHCP server address index, 1 to 4
	<i>serverAddr</i>	DHCP server IP address
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# ip dhcp-relay server 1 192.168.127.100 NPort S9650I-16-2HV(config)# no ip dhcp-relay server 3	

2.2.45 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.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip dhcp-relay option82 NPort S9650I-16-2HV(config)# interface ethernet 1 NPort S9650I-16-2HV(config-if)# ip dhcp-relay option82	

2.2.46 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 *manualId*

Syntax Description	ip	Global IP configuration subcommands
	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>manualId</i>	Manual remote ID, maximum 15 characters
Defaults	DHCP-relay option82 is disable in factory default. Default remote-id-type is IP.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# ip dhcp-relay option82 remote-id-type mac	

2.2.47 serial

Use the **serial** global command to enable serial console. To disable it, use the **no** form of this command.

Commands

serial

no serial

Syntax	serial	Enable serial console
Description		
Defaults	Default is enabled.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# serial NPort S9650I-16-2HV(config)# no serial	

2.2.48 vlan create

Use the **vlan create** global configuration command on the device server 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.	
Permission	Admin group	
Usage	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# vlan create 1,3-5,7	

2.2.49 vlan mode

Use the **vlan mode** configuration command on the device server to change current VLAN mode operated on the device server. Use the **no** form of this command to return to the default.

Commands

vlan mode { **1qvlan** | **pvlan** | **unaware** }

no vlan mode

Syntax	vlan	Configure VLAN parameters
Description	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.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# vlan mode 1qvlan	

2.2.50 gvrp

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

Commands

gvrp

no gvrp

Syntax Description	gvrp	Enable/Disable GVRP
Defaults	The feature is enabled by default.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# gvrp	

2.2.51 redundancy

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

Commands

redundancy

Syntax Description	redundancy	Enter redundancy configuration mode
Defaults	The feature is enabled by default.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# redundancy	

2.2.52 redundancy mode

Use the **redundancy mode** global configuration command on the device server 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.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# redundancy mode turbo-ring-v2	

2.2.53 auth mode

Use the **auth mode** global configuration command on the device server to change the authentication login option.

Commands

auth mode { tacas+ | radius }

no auth mode

Syntax	auth	Configure authentication mechanism
Description	mode	Authentication login option
	tacas+	TACACS+ authentication
	radius	RADIUS authentication
Defaults	N/A.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# auth mode radius	

2.2.54 auth tacacs+

Use the **auth tacacs+** global configuration command on the device server 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.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# auth tacacs+	

2.2.55 auth tacacs+ server-ip

Use the **auth tacacs+ server-ip** global configuration command on the device server to set the TACACS+ authentication server address. Use the **no** form of this command to set to default.

Commands

auth tacacs+ server-ip server-address

no auth tacacs+ server-ip

Syntax	auth	Configure authentication mechanism
Description	tacacs+	TACACS+ authentication
	server-ip	TACACS+ authentication server
	server-address	IP or DNS name, Ex:1.2.3.4
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# auth tacacs+ server-ip 192.168.1.1	

2.2.56 auth tacacs+ server-port

Use the **auth tacacs+ server-port** global configuration command on the device server to set the TACACS+ authentication server port. Use the **no** form of this command to set to default.

Commands

auth tacacs+ server-port *server-port*

no auth tacacs+ server-port

Syntax Description	auth	Configure authentication mechanism
	tacacs+	TACACS+ authentication
	server-port	TACACS+ authentication server
	<i>server-port</i>	1 - 65535
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# auth tacacs+ server-port 1234	

2.2.57 auth tacacs+ shared-key

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

Commands

auth tacacs+ shared-key **key**

no auth tacacs+ shared-key

Syntax Description	auth	Configure authentication mechanism
	tacacs+	TACACS+ authentication
	shared-key	Configure the shared key
	<i>key</i>	Key string, max 15 characters
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# auth tacacs+ shared-key 1234	

2.2.58 auth tacacs+ auth-type

Use the **auth tacacs+ auth-type** global configuration command on the device server 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 Description	auth	Configure authentication mechanism
	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.	
Permission	Admin group	
Usage Guidelines	To enable the TACACS+ authentication, the command "auth tacacs+" must be executed first.	
Examples	NPort S9650I-16-2HV(config)# auth tacacs+ auth-type pap	

2.2.59 auth tacacs+ timeout

Use the **auth tacacs+ timeout** global configuration command on the device server to set the TACACS+ authentication server timeout. Use the **no** form of this command to set the setting back to default value.

Commands

auth tacacs+ timeout seconds

no auth tacacs+ timeout

Syntax Description	auth	Configure authentication mechanism
	timeout	Configure server timeout
	<i>seconds</i>	1 to 255 sec.
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# auth tacacs+ timeout 30	

2.2.60 lldp enable

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

Commands

lldp enable

no lldp enable

Syntax	lldp	Configure LLDP parameters
Description	enable	Start up
Defaults	LLDP is enable in factory default	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# lldp enable	

2.2.61 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
	transFreq	5 to 32768 seconds
Defaults	Transmission frequency of LLDP updates is 30 seconds	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# lldp timer 50	

2.2.62 dot1x auth

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

Commands

dot1x auth { local | radius | radius-local }

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
Defaults	802.1x local authentication	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# dot1x auth local	

2.2.63 dot1x reauth

Use the **dot1x reauth** global configuration command on the device server 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 Description	dot1x	802.1x setting
	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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# dot1x reauth period 3600	

2.2.64 dot1x radius

Use the **dot1x radius** global configuration command on the device server to globally configure 802.1x radius setting. Use the **no** form of this command to return to the default setting.

Commands

dot1x radius server [same]

dot1x radius 1stServer server-ip *server_ip*

dot1x radius 1stServer server-port *server_port*

dot1x radius 1stServer shared-key *server_key*

dot1x radius 2ndServer server-ip *server_ip*

dot1x radius 2ndServer server-port *server_port*

dot1x radius 2ndServer shared-key *server_key*

no dot1x radius {1stServer | 2ndServer | both}

Syntax Description	dot1x	802.1x setting
	radius	802.1x radius setting
	server	802.1x radius setting
	same	The same configuration as radius auth server setting
	1stServer	802.1x 1st radius setting
	2ndServer	802.1x 2nd radius setting
	server-ip	Configure server IP or DNS name
	<i>server_ip</i>	IP or DNS name, Ex:1.2.3.4
	server-port	Configure the server port
	<i>server_port</i>	1 ~ 65535
	shared-key	Configure the shared key
	<i>server_key</i>	Key string, max 15 characters
	both	Set default radius setting
Defaults	802.1x reauth default enable and period 3600 seconds	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# dot1x reauth period 3600 NPort S9650I-16-2HV(config)# no dot1x radius both	

2.2.65 monitor

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

Commands

monitor source interface *mod_port* [**direction**]

no monitor source interface

monitor destination interface *mod_port*

no monitor destination interface

Syntax Description	monitor	Configure Port mirror
	source	Monitored port
	interface	Port
	destination	Mirror port
	<i>modPort</i>	Port ID. E.g., 1/3, Trk2,...
	direction	both tx rx
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	Traffic send/receive by a source port (Monitored port) will be mirrored to the destination port(Mirror port)	
Examples	NPort S9650I-16-2HV(config)# monitor source interface 3/1 both NPort S9650I-16-2HV(config)# no dot1x radius both	

2.2.66 email-warning server

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

Commands

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

no email-warning server

Syntax Description	email-warning	Email warning setting
	server	Email Server
	<i>smtpServerIp</i>	Email Server name/address
	<i>smtpPort</i>	SMTP Port, 1 to 65535
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# email-warning server mail.hinet.net 25 NPort S9650I-16-2HV(config)# email-warning server ms1.hinet.net	

2.2.67 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# email-warning mail-address 1 test2@moxa.com	

2.2.68 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# email-warning account test1 1234 NPort S9650I-16-2HV(config)# no email-warning account test1	

2.2.69 email-warning send test email

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

Commands

email-warning send test email

Syntax Description	email-warning	Email warning setting
	send	Send test email
	test	Test email
	email	Test email address
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	The test email will be sent to the mail address that "email-warning mail-address" command configured.	
Examples	NPort S9650I-16-2HV(config)# email-warning send test email Sending test email ... You may check if your dedicated email addresses have received this email!	

2.2.70 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	Device server cold start
	warn-start	Device server 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.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# email-warning event cold-start NPort S9650I-16-2HV(config)# email-warning event topology-change NPort S9650I-16-2HV(config)# email-warning event auth-fail	

2.2.71 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	
Permission	Admin group	
Usage Guidelines	relayId will only be used on the product that have multiple relays.	
Examples	NPort S9650I-16-2HV (config)# relay-warning override relay	

2.2.72 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	relay-warning	Configure relay warning
Description	config	Choose which relay to configure
	relay	Relay
	relayId	Relay's ID = 1 or 2
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	These commands only existed in device with multiple relays.	
Examples	NPort S9650I-16-2HV (config)# relay-warning config relay 1	

2.2.73 relay-warning event

Use **relay-warning event** global configuration commands to enable the warning events to trigger 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-input2-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.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# relay-warning event turbo-ring-break	

2.2.74 garp

Use **garp** global configuration commands to configure GARP parameters.

Commands

garp join-time time

garp leave-time time

garp leaveall-time time

Syntax Description	garp	Configure GARP parameters
	join-time	Configure GARP join timer parameters
	leave-time	Configure GARP leave timer parameters
	leaveall-time	Configure GARP leaveall timer parameters
	time	timer parameters
Defaults	N/A	
Permission	Admin Group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# garp join-time 33	

2.2.75 ptp enable

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

Commands

ptp enable

no ptp

Syntax	ptp	Configure PTP
Description	enable	Enable the ptp operation
Defaults	ptp is default disable	
Permission	Admin group	
Usage Guidelines	Ethernet port interface can only be set when system PTP configure is enabled.	
Examples	<pre>NPORT S9650I-16-2HV(config)# ptp enable NPORT S9650I-16-2HV(config)# no ptp NPORT S9650I-16-2HV(config-if)# ptp enable NPORT S9650I-16-2HV(config-if)# no ptp</pre>	

2.2.76 ptp mode

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

Commands

ptp mode e2e-bc

ptp mode p2p-bc

ptp mode e2e-oc

ptp mode p2p-oc

Syntax	ptp	Configure PTP
Description	mode	Set the ptp operation mode
	e2e-bc	ptp v2 end-to-end boundary clock mode, this mode can only be set when time source is set to PTP.
	p2p-bc	ptp v2 peer-to-peer boundary clock mode, this mode can only be set when Time source is PTP.
	e2e-oc	ptp v2 end-to-end ordinary clock mode, this mode can only be set when time source not PTP.
	p2p-oc	ptp v2 peer-to-peer ordinary clock mode, this mode can only be set when time source not PTP.
Defaults	Default setting of ptp is mode	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	<pre>NPORT S9650I-16-2HV(config)# ptp mode v2-e2e-bc</pre>	

2.2.77 ptp log-sync-interval

Use the **ptp log-sync-interval** global configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# ptp log-sync-interval	

2.2.78 ptp log-announce-interval

Use the **ptp log-announce-interval** global configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# ptp log-announce-interval	

2.2.79 ptp announce-receipt-timeout

Use the **ptp announce-receipt-timeout** configuration command on the device server 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
	<i>interval</i>	2 to 10
Defaults	default is 3	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# ptp announce-receipt-timeout	

2.2.80 ptp log-min-delay-req-interval

Use the **ptp log-min-delay-req-interval** global configuration command on the device server 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	
Permission	Admin group	
Usage	Only E2E mode can set this value.	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# ptp log-min-delay-req-interval	

2.2.81 ptp log-min-pdelay-req-interval

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

Commands

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

Syntax	ptp	Configure PTP
Description	log-min-pdelay-req-interval	Set the logarithm to the base 2 of the mean minPDelayReqInterval
	<i>interval</i>	-1 to 5
Defaults	default is 0	
Permission	Admin group	
Usage	Only P2P mode can set this value.	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# ptp log-min-pdelay-req-interval 3	

2.2.82 ptp domain-number

Use the **ptp domain-number** configuration command on the device server 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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# ptp domain-number	

2.2.83 ptp transport

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

Commands

ptp transport [802_3|ipv4]

Syntax	ptp	Configure PTP
Description	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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# ptp transport 802_3 NPORT S9650I-16-2HV(config)# ptp transport ipv4	

2.2.84 ptp priority1

Use the **ptp priority1** configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# ptp priority1 128	

2.2.85 ptp priority2

Use the **ptp priority2** configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# ptp priority2 128	

2.2.86 ptp utc-offset

Use the **ptp utc-offset** configuration command on the device server 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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# ptp utc-offset 0	

2.2.87 loopprotection

Use the **loopprotection** configuration command on the device server to enable loop protection.

Commands

loopprotection

no loopprotection

Syntax	loopprotection	Enable loop protection
Description		
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# loopprotection	

2.2.88 qos mode

Use the **qos mode** global configuration command on the device server 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
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# qos mode strict	

2.2.89 qos mapping

Use the **qos mapping** global configuration command on the device server 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)	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# qos mapping cos-to-queue 7 3 NPORT S9650I-16-2HV(config)# qos mapping dscp-to-cos 23 7	

2.2.90 account add

To configure the user account name and its group to log in to this device.

Commands

account add name *name* **new_password** *new_password* **group** {**admins** | **users** | **guests**} [**note** *note*]

Syntax Description	account	To manage the user account database
	add	To add a new user account to a given group
	name	Account name
	new_password	The password for the new created account or for an existing account whose password need to be changed.
	old_password	The password of an existing account.
	group	The device provides 3 levels of access privileges: admins, users, and guests.
	note	The user could note anything in this field.
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	The minimum length of account name is 1 character and the maximum length is 16 characters. The default minimum length of password is 1 character, and the maximum length is fixed to 16 characters. The maximum length of note field is 40 characters.	
Examples	Model(config)# account add name Tom new_password 12345 group users note "for maintenance engineer"	

2.2.91 account edit

To configure the user account name and its group to log in to this device.

Commands

account edit name *name* **old_password** *old_password* **new_password** *new_password*

account edit name *name* [**group** { **admins** | **users** | **guest** }] [**note** *note*]

Syntax Description	account	To manage the user account database
	edit	To edit the attributes of an existing user
	name	Account name
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	<p>The minimum length of account name is 1 character and the maximum length is 16 characters.</p> <p>The default minimum length of password is 1 character, and the maximum length is fixed to 16 characters.</p> <p>The maximum length of note field is 40 characters.</p>	
Examples	<pre>Model(config)# account edit name Tom group guests Model(config)# account edit name Tom old_password 12345 new_password 13579</pre>	

2.2.92 system-log system

To configure which events will be logged locally and/or remotely by the device server.

Commands

system-log system local

no system-log system local

system-log system remote

no system-log system remote

Syntax Description	system-log	To enable the system log according to different event group.
	system	This event group includes: System Cold Start, System Warm Start, Power Transition, DI On/Off.
	local	The events will be logged in device server's local database.
	remote	The events will be logged to remote sys-log server.
Defaults	The default settings are all disabled	
Permission	Admin group	
Usage Guidelines	To enable remote log function, the user also has to configure SysLog Server Settings.	
Examples	<pre>Model(config)# system-log system local</pre>	

2.2.93 system-log network

To configure which events will be logged locally and/or remotely by the device server.

Commands

system-log network local

no system-log network local

system-log network remote

no system-log network remote

Syntax Description	system-log	To enable the system log according to different event group.
	network	This event group includes: DHCP/BOOTP/PPPoE Get IP/Renew, NTP, Mail Fail, NTP Connect Fail, DHCP Fail, IP Conflict, Ethernet Link Down.
	local	The events will be logged in device server's local database.
	remote	The events will be logged to remote sys-log server.
Defaults	The default settings are all disabled	
Permission	Admin group	
Usage Guidelines	To enable remote log function, the user also has to configure SysLog Server Settings.	
Examples	Model(config)# system-log network local Model(config)# no system-log network remote	

2.2.94 system-log config

To configure which events will be logged locally and/or remotely by the device server.

Commands

system-log config local

no system-log config local

system-log config remote

no system-log config remote

Syntax Description	system-log	To enable the system log according to different event group.
	config	This event group includes: Login Fail, IP Changed, Password Changed, Config Changed, Firmware Upgrade, SSL Key Import, Config Import, Config Export.
	local	The events will be logged in device server's local database.
	remote	The events will be logged to remote sys-log server.
Defaults	The default settings are all disabled	
Permission	Admin group	
Usage Guidelines	To enable remote log function, the user also has to configure SysLog Server Settings.	
Examples	Model(config)# system-log config local Model(config)# no system-log config remote	

2.2.95 system-log opmode

To configure which events will be logged locally and/or remotely by the device server.

Commands

system-log opmode local
no system-log opmode local
system-log opmode remote
no system-log opmode remote

Syntax	system-log	To enable the system log according to different event group.
Description	opmode	This event group includes: Connect, Disconnect, Authentication Fail, Restart.
	local	The events will be logged in device server's local database.
	remote	The events will be logged to remote sys-log server.
Defaults	The default settings are all disabled	
Permission	Admin group	
Usage Guidelines	To enable remote log function, the user also has to configure SysLog Server Settings.	
Examples	Model(config)# system-log opmode local Model(config)# no system-log opmode remote	

2.2.96 reset-button

To configure the reset button auto disable after device bootup.

Commands

reset-button
no reset-button

Syntax	reset-button	To enable the reset button auto disable after 60 sec when bootup done.
Description		
Defaults	The default settings are no	
Permission	Admin group	
Usage Guidelines	To disable the reset button after 60 seconds of device boot up.	
Examples	Model(config)#reset-button-disable Model(config)#no reset-button-disable	

2.2.97 console auth

To configure the authentication type of the web/telnet/ssh/cli console.

Commands

console auth {local | radius | radius-local | tacasplus | tacasplus-local}

Syntax	console	Set the parameters of the console.
Description	auth	Set the login authentication type
Defaults	The default settings are local	
Permission	Admin group	
Usage Guidelines	N/A.	
Examples	Model(config)# console auth radius Model(config)#no reset-button-disable	

2.2.98 console try-next-auth

To enable or disable try next authentication type when console auth is radius-local and tacas+-local mode.

Commands

console try-next-auth

no console try-next-auth

Syntax	console	Set the parameters of the console.
Description	try-next-auth	Try next authentication type when the first authentication type fail
Defaults	The default settings are disabled.	
Permission	Admin group	
Usage Guidelines	This command only work only when console login mode is radius-local or tacas+-local.	
Examples	<pre>Model(config)# console try-next-auth Model(config)# no console try-next-auth</pre>	

2.3 Commands for Configuring Interface

These commands can only be executed under each interface folder of the CLI console, such as Ethernet interface, serial interface etc. They are used to set all the related settings of the interface of the device server.

2.3.1 Ethernet Interface Commands

From the CLI root, use "configure" command to enter configure mode, then input "interface Ethernet" command to enter the Ethernet interface folder.

2.3.1.1 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.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	<pre>NPort S9650I-16-2HV(config)# interface ethernet 3/1 NPort S9650I-16-2HV(config-if)# email-warning event link-on NPort S9650I-16-2HV(config-if)# email-warning event traffic-overload 80 20</pre>	

2.3.1.2 relay-warning event

Use **relay-warning event** interface configuration commands to enable the warning events to trigger 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.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface ethernet 3/1 NPort S9650I-16-2HV(config-if)# relay-warning event traffic-overload	

2.3.1.3 trunk-group

Use the **trunk-group** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config-if)# trunk-group 1	

2.3.1.4 trunk-mode

Use the **trunk-mode** interface configuration command on the device server 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.	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config-if)# trunk-mode static	

2.3.1.5 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	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config-if)# shutdown NPORT S9650I-16-2HV(config-if)# no shutdown	

2.3.1.6 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	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# interface ethernet 1/1 NPORT S9650I-16-2HV(config-if)# name interfacel_port1 NPORT S9650I-16-2HV(config-if)# no name	

2.3.1.7 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# interface ethernet 1/1 NPORT S9650I-16-2HV(config-if)# speed-duplex 100M-Full	

2.3.1.8 flowcontrol

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

Commands

flowcontrol
no flowcontrol

Syntax Description	flowcontrol	Configure flowcontrol
Defaults	The default is disable	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# interface ethernet 1/1 NPORT S9650I-16-2HV(config-if)# flowcontrol NPORT S9650I-16-2HV(config-if)# no flowcontrol	

2.3.1.9 media cable-mode

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

Commands

media cable-mode [mdi | mdix | auto]

no media cable-mode

Syntax Description	media	Select a media
	cable-mode	Select cable mode
	mdi	MDI
	mdix	MDIX
	auto	Auto select MDI/MDIX
Defaults	The default is auto	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config-if)# media cable-mode auto NPort S9650I-16-2HV(config-if)# no media cable-mode	

2.3.1.10 switchport access vlan

Use the **switchport access vlan** interface configuration command on the device server 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 device server.

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	vlan-id = 1	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport access vlan 2	

2.3.1.11 switchport trunk fixed vlan add

Use the **switchport trunk fixed vlan add** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport trunk fixed vlan add 1,3-5,7	

2.3.1.12 switchport trunk fixed vlan remove

Use the **switchport trunk fixed vlan remove** configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport trunk fixed vlan remove 1,3-5,7	

2.3.1.13 switchport trunk forbidden vlan add

Use the **switchport trunk forbidden vlan add** configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport trunk forbidden vlan add 1,3-5,7	

2.3.1.14 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport trunk forbidden vlan remove 1,3-5,7	

2.3.1.15 switchport trunk native vlan

Use the **switchport trunk native vlan** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport trunk native vlan 2	

2.3.1.16 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	
Permission	Admin group	
Usage Guidelines	N/A.	
Examples	NPort S9650I-16-2HV(config-if)# switchport pvlan 2,3,4	

2.3.1.17 switchport hybrid fixed vlan add

Use the **switchport hybrid fixed vlan add** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport hybrid forbidden vlan add 1,3-5,7 tag	

2.3.1.18 switchport hybrid forbidden vlan add

Use the **switchport hybrid forbidden vlan add** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport hybrid forbidden vlan add 1,3-5,7	

2.3.1.19 switchport hybrid forbidden vlan remove

Use the **switchport hybrid forbidden vlan remove** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport hybrid forbidden vlan remove 1,3-5,7	

2.3.1.20 switchport hybrid native vlan

Use the **switchport hybrid native vlan** interface configuration command on the device server to configure the 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	
Permission	Admin group	
Usage Guidelines	You can only use this command mode for configuring normal-range VLANs, that is, VLAN IDs 1 to 4094.	
Examples	NPort S9650I-16-2HV(config-if)# switchport hybrid native vlan 2	

2.3.1.21 port-security

Use the **port-security** interface configuration command on the device server 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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config-if)# port-security 00:00:00:00:00:01	

2.3.1.22 dot1x auth

Use the **dot1x auth** interface configuration command on the device server 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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config-if)# dot1x auth	

2.3.1.23 gmrp

Use the **gmrp** interface configuration command on the device server 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	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config-if)# gmrp	

2.3.1.24 ip auto-assign

Use the **ip auto-assign** interface configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	This specified IP address must be in the same subnet of the system IP address.	
Examples	NPort S9650I-16-2HV(config-if)# ip auto-assign 192.168.1.1	

2.3.2 VLAN Interface Commands

From the CLI root directory, use the "configure" command to enter configure mode, and use the "interface mgmt " command to enter the VLAN configure folder. In this folder, user could set all LAN management settings.

2.3.2.1 ip address

Use the **ip address** VLAN configuration command on the device server to configure the IP retrieve mechanism of the device server. 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# interface mgmt NPORT S9650I-16-2HV(config-vlan)# ip address static 192.168.1.1 255.255.255.0	

2.3.2.2 ip default-gateway

Use the **ip default-gateway** VLAN configuration command on the device server 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 parameters
Description	default-gateway	Configure default gateway address
	<i>ip-address</i>	IP address
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# interface mgmt NPORT S9650I-16-2HV(config-vlan)# ip default-gateway 192.168.1.1	

2.3.2.3 ip name-server

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

Commands

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

no ip name-server

Syntax	ip	Configure IP parameters
Description	name-server	Configure DNS server address
	<i>dns-ip-address1</i>	IP address
	<i>dns-ip-address2</i>	IP address
Defaults	N/A	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPORT S9650I-16-2HV(config)# interface mgmt NPORT S9650I-16-2HV(config-vlan)# ip name-server 192.168.1.1 255.255.255.0	

2.3.2.4 bind vlan

Use the **bind vlan** configuration command on the device server 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	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPORT S9650I-16-2HV(config)# interface mgmt NPORT S9650I-16-2HV(config-vlan)# bind vlan 1	

2.3.2.5 access-ip

Use **access-ip** in the configuration command as to restrict access to the serial 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.	
Permission	Admin group	
Usage Guidelines	This feature will take effect when the access-ip command is executed.	
Examples	NPORT S9650I-16-2HV(config)# interface mgmt NPORT S9650I-16-2HV (config-vlan)# access-ip 10.10.10.10 255.255.255.0 NPORT S9650I-16-2HV (config-vlan)# no access-ip	

2.3.3 Serial Interface Commands

From the CLI root directory, use the “configure” command to enter configure mode, and use the “interface serial ” command to enter the serial interface folder. In the folder, users can set all serial-related settings.

2.3.3.1 email-warning event

Use the **email-warning event** serial 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 {dcd-changed | dsr-changed}

no email-warning event {dcd-changed | dsr-changed}

Syntax Description	email-warning	Configure email warning.
	event	Port events.
	dcd-changed	DCD changed
	dsr-changed	DSR changed
Defaults	All serial port events are disabled by default.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# email-warning event dcd-changed NPort S9650I-16-2HV(config)# no email-warning event dsr-changed	

2.3.3.2 port-alias

To configure the alias name for specified serial port.

Commands

port-alias *alias-string*

no port-alias

Syntax Description	port-alias	Configure alias name for serial port
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	Alias: 1 – 16 characters	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# port-alias dev_serial_port1 NPort S9650I-16-2HV(config-serif)# no port-alias	

2.3.3.3 baud-rate

To configure the baudrate for specified serial port.

Commands

baud-rate *rate*

Syntax Description	baud-rate	Configure baud rate for serial port
Defaults	The default is 115200	
Permission	Admin group	
Usage Guidelines	Baud-rate: 50, 75, 110, 134, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600, or user specific baud-rate value	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# baud-rate 9600	

2.3.3.4 parity

To configure the serial parity for specified serial port.

Commands

parity {none | odd | even | mark | space}

Syntax Description	parity	Configure parity for serial port
Defaults	The default is none	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# parity odd	

2.3.3.5 data-bit

To configure the data-bit for specified serial port.

Commands

data-bit {5 | 6 | 7 | 8}

Syntax Description	data-bit	Configure data-bit for serial port
Defaults	The default is 8	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# data-bit 6	

2.3.3.6 stop-bit

To configure the stop-bit for specified serial port.

Commands

stop-bit {1 | 1.5 | 2}

Syntax Description	stop-bit	Configure stop-bit for serial port
Defaults	The default is 1	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# stop-bit 2	

2.3.3.7 flowctrl

To configure the flow control for specified serial port.

Commands

flowcontrol {none | rtscts | xonxoff }

Syntax Description	flowctrl	Configure flow control for serial port
Defaults	The default is rtscts	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# flowctrl xonxoff	

2.3.3.8 fifo

To configure the flow control for specified serial port.

Commands

fifo

no fifo

Syntax Description	fifo	Enable fifo for serial port
Defaults	The default is enable	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# fifo NPort S9650I-16-2HV(config-serif)# no fifo	

2.3.3.9 port-type

To configure the flow control for specified serial port.

Commands

port-type {232 | 422 | 485-2w | 485-4w }

Syntax	port-type	Configure interface for serial port
Description		
Defaults	The default is 232	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# port-type 485-2w	

2.3.3.10 opmode

To configure the operation mode for specified serial port.

Commands

opmode {disable | realcom | rfc2217 | tcpserver | tcpclient | udp | modbus | dnp3 | dnp3-raw-socket}

Syntax	opmode	Configure operation mode for serial port
Description		
Defaults	The default is realcom	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# opmode modbus	

2.3.3.11 realcom

To configure the parameters of RealCOM mode for specified serial port.

Commands

realcom alive-check *minute*

realcom [**max-conn** *maxconn*] [**ignore-jammed-ip** {**enable** | **disable**}] [**allow-driver-ctrl** {**enable** | **disable**}]

realcom conn-down-rtts {**low** | **high**}

realcom conn-down-dtr {**low** | **high**}

Syntax Description	realcom	To configure the parameters of RealCOM mode.
	alive-check	TCP alive check time specifies how long the device server will wait for a response to "keep alive" packets before closing the TCP connection.
	max-conn	Max connection is used if you need to receive data from different hosts simultaneously.
	ignore-jammed-ip	When in multiple connection, if there are any remote sides happen connection problem, the device should ignore these sides and keep send serial-to-Ethernet data or stop send, this setting only work when max connection is not 1.
	allow-driver-ctrl	Allow driver control determines how the port will proceed if driver control commands are received from multiple hosts that are connected to the port, this setting only work when max connection is not 1.
	conn-down-rtts	Set the RTS signal to high/low when the connection is down.
	conn-down-dtr	Set the DTR signal to high/low when the connection is down.
Defaults	The default settings for each parameter are: TCP alive check time: 7 min Max connection: 1 Ignore jammed IP: disable Allow driver control: disable Connection goes down - RTS: always high Connection goes down - DTR: always high	
Permission	Admin group	
Usage	alive-check: 0 – 99 min	
Guidelines	max-conn: 1 – 8	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# realcom alive-check 5 NPort S9650I-16-2HV(config-serif)# realcom max-conn 8 ignore-jammed-ip enable allow-driver-ctrl disable NPort S9650I-16-2HV(config-serif)# realcom conn-down-rtts low</pre>	

2.3.3.12 rfc2217

To configure the parameters of RFC 2217 mode for specified serial port.

Commands

rfc2217 alive-check *minute*

rfc2217 tcp-port *tcp-port*

Syntax Description	rfc2217	To configure the parameters of RFC 2217 mode.
	alive-check	TCP alive check time specifies how long the device server will wait for a response to "keep alive" packets before closing the TCP connection.
	tcp-port	This is the TCP port number assignment for the serial port on the device server.
Defaults	The default settings for each parameter are: TCP alive check time: 7 min TCP port: 4001	
Permission	Admin group	
Usage Guidelines	Alive-check: 0 – 99 min Tcp-port: 1 – 65535	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# rfc2217 alive-check 5 NPort S9650I-16-2HV(config-serif)# rfc2217 tcp-port 3456</pre>	

2.3.3.13 tcpserver

To configure the parameters of TCP Server mode for specified serial port.

Commands

tcpserver alive-check *minute*

tcpserver inactivity *milli-second*

tcpserver [**max-conn** *maxconn*] [**ignore-jammed-ip** {**enable** | **disable**}] [**allow-driver-ctrl** {**enable** | **disable**}]

tcpserver conn-down-rts {**low** | **high**}

tcpserver conn-down-dtr {**low** | **high**}

tcpserver local-tcp-port *tcp-port*

tcpserver local-cmd-port *tcp-port*

Syntax Description	tcpserver	To configure the parameters of TCP Server mode.
	alive-check	TCP alive check time specifies how long the device server will wait for a response to "keep alive" packets before closing the TCP connection.
	inactivity	Inactivity time specifies how long the device server will wait for incoming and outgoing data through the serial port before closing the TCP connection.
	max-conn	Max connection is used if you need to receive data from different hosts simultaneously.
	ignore-jammed-ip	When in multiple connection, if there are any remote sides happen connection problem, the device should ignore these sides and keep send serial-to-Ethernet data or stop send, this setting only work when max connection is not 1.
	allow-driver-ctrl	Allow driver control determines how the port will proceed if driver control commands are received from multiple hosts that are connected to the port, this setting only work when max connection is not 1.
	conn-down-rts	Set the RTS signal to high/low when the connection is down.
	conn-down-dtr	Set the DTR signal to high/low when the connection is down.
	local-tcp-port	Specific the local TCP port for TCP server use.
	local-cmd-port	Specific the local CMD port for TCP server use.
	no	Clear the setting to empty
Defaults	The default settings for each parameter are: TCP alive check time: 7 min Inactivity time: 0 ms (disable) Max connection: 1 Ignore jammed IP: disable Allow driver control: disable Connection goes down - RTS: always high Connection goes down - DTR: always high Local TCP port: 4001 Local CMD port: 966	
Permission	Admin group	
Usage Guidelines	Alive-check: 0 – 99 min Inactivity time: 0 – 65535 ms Max connection: 1 - 8 Tcp-port: 1 – 65535	
Examples	<pre> NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV (config-serif)# tcpclient alive-check 5 NPort S9650I-16-2HV (config-serif)# tcpserver alive-check 5 NPort S9650I-16-2HV (config-serif)# tcpserver inactivity 5000 NPort S9650I-16-2HV(config-serif) # tcpserver max-conn 8 ignore-jammed-ip enable allow-driver-ctrl disable </pre>	

```
NPort S9650I-16-2HV(config-serif) # tcpserver local-tcp-port 4005
```

2.3.3.14 tcpclient

To configure the parameters of TCP Client mode for specified serial port.

Commands

tcpclient alive-check *minute*

tcpclient inactivity *milli-second*

tcpclient ignore-jammed-ip {enable|disable}

tcpclient [dest-ip1 *ip-address* **][dest-port1** *tcp-port* **]**

tcpclient [dest-ip2 *ip-address* **][dest-port2** *tcp-port* **]**

tcpclient [dest-ip3 *ip-address* **][dest-port3** *tcp-port* **]**

tcpclient [dest-ip4 *ip-address* **][dest-port4** *tcp-port* **]**

tcpclient local-port1 *tcp-port*

tcpclient local-port2 *tcp-port*

tcpclient local-port3 *tcp-port*

tcpclient local-port4 *tcp-port*

no tcpclient dest-ip1

no tcpclient dest-ip2

no tcpclient dest-ip3

no tcpclient dest-ip4

tcpclient conn-ctrl {startup-none | anychar-none | anychar-inactivity | dsron-off | dsron-none | dcdon-off | dcdon-none}

Syntax Description	tcpclient	To configure the parameters of TCP Client mode.
	alive-check	TCP alive check time specifies how long the device server will wait for a response to "keep alive" packets before closing the TCP connection.
	inactivity	Inactivity time specifies how long the device server will wait for incoming and outgoing data through the serial port before closing the TCP connection.
	ignore-jammed-ip	When in multiple connection, if there are any remote sides happen connection problem, the device should ignore these sides and keep send serial-to-Ethernet data or stop send.
	dest-ip1	1st destination IP address specifies an IP address allows the device server to connect actively to the remote host.
	dest-ip2	2nd destination IP address specifies an IP address allows the device server to connect actively to the remote host.
	dest-ip3	3rd destination IP address specifies an IP address allows the device server to connect actively to the remote host.
	dest-ip4	4th destination IP address specifies an IP address allows the device server to connect actively to the remote host.
	dest-port1	1st destination port specifies the TCP port number allows the device server to connect actively to the remote host.
	dest-port2	2nd destination port specifies the TCP port number allows the device server to connect actively to the remote host.
	dest-port3	3rd destination port specifies the TCP port number allows the device server to connect actively to the remote host.
	dest-port4	4th destination port specifies the TCP port number allows the device server to connect actively to the remote host.
	local-port1	1st designated local port specifies the desired local port number of the device server for this TCP connection.
	local-port2	2nd designated local port specifies the desired local port number of the device server for this TCP connection.
	local-port3	3rd designated local port specifies the desired local port number of the

		device server for this TCP connection.
	local-port4	4th designated local port specifies the desired local port number of the device server for this TCP connection.
	conn-ctrl	Connection control determines the parameters under which a TCP connection is established or disconnected
	no	Clear the setting to empty
Defaults	<p>The default settings for each parameter are:</p> <p>TCP alive check time: 7 min</p> <p>Inactivity time: 0 ms (disable)</p> <p>Max connection: 1</p> <p>Ignore jammed IP: disable</p> <p>Destination IP address 1: blank</p> <p>Destination port 1: 4001</p> <p>Destination IP address 2: blank</p> <p>Destination port 2: 4001</p> <p>Destination IP address 3: blank</p> <p>Destination port 3: 4001</p> <p>Destination IP address 4: blank</p> <p>Destination port 4: 4001</p> <p>Designated local port 1: 5011</p> <p>Designated local port 2: 5012</p> <p>Designated local port 3: 5013</p> <p>Designated local port 4: 5014</p> <p>Connection control: Startup/None</p>	
Permission	Admin group	
Usage	Alive-check: 0 – 99 min	
Guidelines	<p>Inactivity time: 0 – 65535 ms</p> <p>IP address : IPv4 address or DNS name</p> <p>Tcp-port: 1 – 65535</p>	
Examples	<pre> NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV (config-serif)# tcpclient alive-check 5 NPort S9650I-16-2HV (config-serif)# tcpclient ignore-jammed-ip enable NPort S9650I-16-2HV (config-serif)# tcpclient dest-ip1 192.168.1.100 dest-port1 4001 NPort S9650I-16-2HV (config-serif)# tcpclient dest-ip2 192.168.1.101 NPort S9650I-16-2HV (config-serif)# dest-port2 4002 NPort S9650I-16-2HV (config-serif)# no tcpclient dest-ip3 NPort S9650I-16-2HV (config-serif)# tcpclient local-port1 5011 NPort S9650I-16-2HV (config-serif)# tcpclient conn-ctrl anychar-none </pre>	

2.3.3.15 udp

To configure the parameters of UDP mode for specified serial port.

Commands

```

udp [dest-ip1-begin ip-address] [dest-ip1-end ip-address] [dest-port1 port]
udp [dest-ip2-begin ip-address] [dest-ip2-end ip-address] [dest-port2 port]
udp [dest-ip3-begin ip-address] [dest-ip3-end ip-address] [dest-port3 port]
udp [dest-ip4-begin ip-address] [dest-ip4-end ip-address] [dest-port4 port]
udp local-port udp-port
no udp dest-ip1-begin
no udp dest-ip1-end
no udp dest-ip2-begin
no udp dest-ip2-end
no udp dest-ip3-begin
no udp dest-ip3-end
no udp dest-ip4-begin
no udp dest-ip4-end

```

Syntax Description	udp	To configure the parameters of dnp3 mode.
	dest-ip1-begin	1st start ranges of IP addresses for the serial port to connect to.
	dest-ip1-end	1st end ranges of IP addresses for the serial port to connect to.
	dest-ip2-begin	2nd start ranges of IP addresses for the serial port to connect to.
	dest-ip2-end	2nd end ranges of IP addresses for the serial port to connect to.
	dest-ip3-begin	3rd start ranges of IP addresses for the serial port to connect to.
	dest-ip3-end	3rd end ranges of IP addresses for the serial port to connect to.
	dest-ip4-begin	4th start ranges of IP addresses for the serial port to connect to.
	dest-ip4-end	4th end ranges of IP addresses for the serial port to connect to.
	dest-port1	1st destination port specifies the UDP port number allows the device server to connect actively to the remote host
	dest-port2	2nd destination port specifies the UDP port number allows the device server to connect actively to the remote host
	dest-port3	3rd destination port specifies the UDP port number allows the device server to connect actively to the remote host
	dest-port4	4th destination port specifies the UDP port number allows the device server to connect actively to the remote host
	local-port	This is the UDP port that the device server listens to and that other devices must use to contact the device server.
	no	Clear the setting to empty
Defaults	The default settings for each parameter are: Destination IP address 1 begin: blank Destination IP address 1 end: blank Destination port 1: 4001 Destination IP address 2 begin: blank Destination IP address 2 end: blank Destination port 2: 4001 Destination IP address 3 begin: blank Destination IP address 3 end: blank Destination port 3: 4001 Destination IP address 4 begin: blank Destination IP address 4 end: blank Destination port 4: 4001 Local listen port: 4001	
Permission	Admin group	

Usage	IP address: IPv4 address
Guidelines	Tcp-port: 1 – 65535
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# udp dest-ip1-begin 192.168.1.100 dest-ip1-end 192.168.1.105 dest-port1 4001 NPort S9650I-16-2HV(config-serif)# udp dest-ip2-begin 192.168.1.200 dest-ip2-end 192.168.1.205 NPort S9650I-16-2HV(config-serif)# udp local-port 4001 NPort S9650I-16-2HV(config-serif)# udp dest-port3 4003</pre>

2.3.3.16 dnp3

To configure the parameters of Modbus mode for specified serial port.

Commands

dnp3 mode {outstation|master}

Syntax	dnp3	To configure the parameters of dnp3 mode.
Description	mode	Set the mode of the device which the serial port acted.
	outstation	Outstation mode
	master	Master mode
Defaults	The default settings for dnp3 mode is outstation	
Permission	Admin group	
Usage	N/A	
Guidelines		
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# dnp3 mode master</pre>	

2.3.3.17 dnp3-raw-socket

To configure the parameters of Modbus mode for specified serial port.

Commands

dnp3-raw-socket local-tcp-port tcp-port

dnp3-raw-socket [remote-ip ip-address] [remote-tcp-port tcp-port]

Syntax	dnp3-raw-socket	To configure the parameters of dnp3-raw-socket mode.
Description	local-tcp-port	Set the local tcp port which device used for the serial.
	remote-ip	Set the remote IP address
	remote-tcp-port	Set the remote TCP port
Defaults	The default settings for each parameter are: local-tcp-port: 4001 remote-ip: empty remote-tcp-port: 20000	
Permission	Admin group	
Usage	Ip-address: IPv4 address	
Guidelines	TCP port: 1 – 65535	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# dnp3-raw-socket remote-ip 1.2.3.4 remote-tcp-port 20001 NPort S9650I-16-2HV(config-serif)# dnp3-raw-socket local-tcp-port 1234</pre>	

2.3.3.18 modbus

To configure the parameters of Modbus mode for specified serial port.

Commands

modbus [**connected-dev** { **rtu-master** | **rtu-slave** | **ascii-master** | **ascii-slave** }] [**resp-timeout** *milli-second*] [**inter-char-timeout** *milli-second*] [**inter-frame-delay** *milli-second*] [**designated-tcp-port** *tcp-port*]

Syntax Description	modbus	To configure the parameters of Modbus mode.
	connected-dev	Set the type of the device type and role which the serial port connected.
	response-timeout	Set the Modbus response time out of the serial port. Only valid when connected-dev is RTU-slave or ascii-slave
	Inter-char-timeout	Set the inter-character timeout of the serial port. Only valid when connected-dev is RTU-slave .
	Inter-frame-delay	Set the inter-frame delay of the serial port. Only valid when connected-dev is RTU-slave .
	Designated-tcp-port	Set the designated TCP port of the serial port. Only valid when connected-dev is RTU-slave or ascii-slave
Defaults	The default settings for each parameter are: Connected device type: RTU Slave Response timeout: 1000 Inter-character timeout: 0 Inter-frame delay: 0 Designated TCP port: 0	
Permission	Admin group	
Usage Guidelines	Response timeout: 10 – 120000 ms Inter-character timeout: 10 - 500 ms, 0 for disable Inter-frame delay: 10 - 500 ms, 0 for disable Designated TCP port: 1024 - 65535, 0 for disable	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# modbus connected-device-type RTU-slave NPort S9650I-16-2HV(config-serif)# modbus response-timeout 2000 inter-char-timeout 10 inter-frame-delay 10 NPort S9650I-16-2HV(config-serif)# modbus designated-tcp-port 4001</pre>	

2.3.3.19 data-packing

To configure the data packing settings in different operation mode for specified serial port.

Commands

data-packing length *packet-length*

data-packing deli1-char *delimiter1-character* [**deli2-char** *delimiter2-character*]

data-packing deli1 {enable|disable} [**deli2** {enable|disable}]

data-packing process {nothing | plus1 | plus2 | strip}

data-packing force-transmit *millisecond*

Syntax Description	data-packing	To configure the data packing behavior.
	length	It refers to the maximum amount of data that is allowed to accumulate in the serial port buffer before sending.
	deli1	Enable or disable the delimiter 1 functionality.
	deli1-char	To configure the delimiter 1 character.
	deli2	Enable or disable the delimiter 2 functionality, this function could be set only when deli1 was set; If the deli1 is disable, this value must be disable.
	deli2-char	To configure the delimiter 2 character, this function could be set only when deli1-char was set.
	process	The delimiter proces determines how the data is handled when a delimiter is received.
	force-transmit	This parameter defines how large a gap in serial communication the device server will allow before packing the serial data in its internal buffer for network transmission.
Defaults	The default settings for each parameter are: packet length: 0 delimiter 1: disable delimiter 1 character: 0x00 delimiter 2: disable delimiter 2 character: 0x00 delimiter process: nothing force transmit: 0 ms	
Permission	Admin group	
Usage Guidelines	Data-packing length: 0 - 1024 deli1-char: HEX value(length: 1 - 2) deli2-char: HEX value(length: 1- 2) force-transmit: 0 - 65535 ms	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# data-packing length 100 NPort S9650I-16-2HV(config-serif)# data-packing deli-char 0x55 deli2-char 0xff NPort S9650I-16-2HV(config-serif)# data-packing force-transmit 1000</pre>	

2.3.3.20 email-warning event

Use the **email-warning event** serial 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 {dcd-changed | dsr-changed}

no email-warning event {dcd-changed | dsr-changed}

Syntax Description	email-warning	Configure email warning.
	event	Port events.
	dcd-changed	DCD changed
	dsr-changed	DSR changed
Defaults	All serial port events are disabled by default.	
Permission	Admin group	
Usage Guidelines	N/A	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# email-warning event dcd-changed	

2.3.3.21 irig-b

To configure the *irig-b* setting for specified serial port.

Commands

irig-b output { off|pwm|pps }

Syntax Description	init-delay	Configure initial delay for the modbus protocol
Defaults	The default is off	
Permission	Admin group	
Usage Guidelines	listen-tcp-port: 0 - 30000	
Examples	NPort S9650I-16-2HV(config)# interface serial 1 NPort S9650I-16-2HV(config-serif)# irig-b pwm	

2.3.4 Protocol Modbus Interface Commands

From the CLI root directory, use the "configure" command to enter configure mode, and use the "interface serial protocol modbus" command to enter the Modbus protocol folder. In this folder, user can set all Modbus protocol settings.

2.3.4.1 init-delay

To configure the initial delay of the Modbus.

Commands

init-delay *mili-seconds*

Syntax Description	init-delay	Configure initial delay for the Modbus protocol
Defaults	The default is 0	
Permission	Admin group	
Usage Guidelines	listen-tcp-port: 0 - 30000	
Examples	NPort S9650I-16-2HV(config)# interface serial protocol modbus NPort S9650I-16-2HV(config-modbus)# init-delay 1000	

2.3.4.2 send-tcp-exception

To configure the send TCP exception of the Modbus.

Commands

send-tcp-exception

no send-tcp-exception

Syntax Description	send-tcp-exception	Configure enable or disable send TCP exception for the Modbus protocol
Defaults	The default is disable	
Permission	Admin group	
Usage Guidelines	listen-tcp-port: 1 - 65535	
Examples	NPort S9650I-16-2HV(config)# interface serial protocol modbus NPort S9650I-16-2HV(config-modbus)# send-tcp-exception NPort S9650I-16-2HV(config-modbus)# no send-tcp-exception	

2.3.4.3 tcp-listen-port

To configure the listen TCP port of the Modbus protocol.

Commands

tcp-listen-port *listen-tcp-port*

Syntax Description	tcp-listen-port	Configure the listen TCP port for the Modbus protocol
Defaults	The default is 502	
Permission	Admin group	
Usage Guidelines	listen-tcp-port: 1 - 65535	
Examples	NPort S9650I-16-2HV(config)# interface serial protocol modbus NPort S9650I-16-2HV(config-modbus)# tcp-listen-port 1234	

2.3.4.4 tcp-response-timeout

To configure the listen TCP response timeout of the Modbus protocol.

Commands

tcp-response-timeout *milli-seconds*

Syntax Description	tcp-response-timeout	Configure the TCP client response time out for the Modbus protocol
Defaults	The default is 1000	
Permission	Admin group	
Usage Guidelines	milli-seconds: 10 – 120000 ms	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial protocol modbus NPort S9650I-16-2HV(config-modbus)# tcp-response-timeout 3000</pre>	

2.3.4.5 sid-map

To display the slave id mapping table of the Modbus protocol.

Commands

sid-map

Syntax Description	sid-map	To configure the slave-id mapping of Modbus mode.		
Defaults	N/A			
Permission	Admin group			
Usage Guidelines	N/A			
Examples	NPort S9650I-16-2HV(config)# interface serial protocol modbus			
	NPort S9650I-16-2HV(config-modbus)# sid-map			
	Slave ID Map :			
	Channel no.	Type	Definition	Modbus Address
	Range			
	-----	-----	-----	

	1	Modbus Serial	Port 1	00001 - 00005
	2	Modbus Serial	Port 2	00006 - 00010
3	Modbus Serial	Port 3	00011 - 00015	
4	Modbus Serial	Port 4	00016 - 00020	
5	Modbus TCP	192.168.1.1: 502	00100 - 00150	

2.3.4.6 sid-map add remote-ip

To configure the slave id mapping table of the Modbus protocol.

Commands

sid-map add remote-ip *ip-address* **remote-tcp-port** *tcp-port* **sid-start** *slave-id* **sid-end** *slave-id*

Syntax	sid-map	To configure the slave-id mapping of Modbus mode.
Description	remote-ip	The destination is Modbus tcp IP address.
	remote-tcp-port	The remote TCP port
	sid-start	Set the mapping start slave id.
	sid-end	Set the mapping end slave id.
Defaults	N/A	
Permission	Admin group	
Usage	Ip-address: IPv4 address	
Guidelines	Tcp-port: 1 - 65535	
	Slave-id: 1 - 255	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial protocol modbus NPort S9650I-16-2HV(config-modbus)# sid-map add remote-ip 1.2.3.4 remote-tcp-port 502 sid-start 1 sid-end 5</pre>	

2.3.4.7 sid-map edit

To configure the slave id mapping table of the Modbus protocol.

Commands

sid-map edit channel id [remote-ip remote-ip] [remote-tcp-port remote-port] [sid-start slave-id-start][sid-end slave-id-end]

Syntax Description	sid-map	To configure the slave-id mapping of Modbus mode.		
	channel	The channel ID of the slave ID map		
	remote-ip	The desination is Modbus tcp IP address, this parameter is work only when channel is Modbus TCP.		
	remote-tcp-port	The remote TCP port, this parameter is work only when channel is Modbus TCP.		
	sid-start	Set the mapping start slave id.		
	sid-end	Set the mapping end slave id.		
Defaults	N/A			
Permission	Admin group			
Usage Guidelines	Ip-address: IPv4 address Tcp-port: 1 – 65535 slave-id-start/slave-id-end: 1 – 255 Channel index: 1 - n			
Examples	NPort S9650I-16-2HV(config)# interface serial protocol modbus			
	NPort S9650I-16-2HV(config-modbus)# sid-map			
	Slave ID Map :			
	Channel number	Type	Definition	Modbus
	Address Range			
	-----	-----	-----	

	1	Modbus Serial	Port 1	00001 -
	00005			
	2	Modbus Serial	Port 2	00006 -
	00010			
	3	Modbus Serial	Port 3	00011 -
	00015			
4	Modbus Serial	Port 4	00016 -	
00020				
5	Modbus TCP	192.168.1.1: 502	00100 - 00150	
NPort S9650I-16-2HV (config-modbus)#sid-map edit channel 1 sid-start 3 sid-end 5				
NPort S9650I-16-2HV (config-modbus)#sid-map edit channel 5 remote-tcp-port 505				
NPort S9650I-16-2HV (config-modbus)#sid-map edit channel 5 remote-ip 1.2.3.4 remote-tcp-port 1234				
NPort S9650I-16-2HV (config-modbus)#sid-map edit channel 5 remote-ip 1.2.3.4 remote-tcp-port 1234 sid-start 101 sid-end 110				

2.3.4.8 no sid-map

To remove an entry of the slave id mapping table of the Modbus protocol.

Commands

no sid-map channel *id*

Syntax	sid-map	To configure the slave-id mapping of Modbus mode.
Description	channel	The channel ID of the slave ID map
	<i>id</i>	The channel id
Defaults	N/A	
Permission	Admin group	
Usage	id: 1 - n	
Guidelines		
Examples	<pre> NPort S9650I-16-2HV(config)# interface serial protocol modbus NPort S9650I-16-2HV (config-modbus)# sid-map Slave ID Map : Channel number Type Definition Modbus Address Range ----- 1 Modbus Serial Port 1 00001 - 00005 2 Modbus Serial Port 2 00006 - 00010 3 Modbus Serial Port 3 00011 - 00015 4 Modbus Serial Port 4 00016 - 00020 5 Modbus TCP 192.168.1.1: 502 00100 - 00150 NPort S9650I-16-2HV (config-modbus)# no sid-map channel 5 NPort S9650I-16-2HV (config-modbus)# sid-map Slave ID Map : Channel number Type Definition Modbus Address Range ----- 1 Modbus Serial Port 1 00001 - 00005 2 Modbus Serial Port 2 00006 - 00010 3 Modbus Serial Port 3 00011 - 00015 4 Modbus Serial Port 4 00016 - 00020 </pre>	

2.3.5 Protocol DNP3 Interface Commands

From the CLI root directory, use the "configure" command to enter the configure mode, and use the "interface serial protocol dnp3" command to enter the DNP3 protocol folder. In this folder, user could set all DNP3 protocol settings.

2.3.5.1 listen-port

To configure the initial delay of the modbus.

Commands

listen-port *tcp-port*

Syntax Description	listen-port	Configure listen TCP port for the DNP3 protocol
Defaults	The default is 20000	
Permission	Admin group	
Usage Guidelines	tcp-port: 1 - 65535	
Examples	NPort S9650I-16-2HV(config)# interface serial protocol dnp3 NPort S9650I-16-2HV (config-dnp3)# listen-port 20001	

2.3.5.2 address-table

To configure the address table of the DNP3 protocol.

Commands

address-table

Syntax Description	address-table	To configure the address table of DNP3 mode.																																										
Defaults	N/A																																											
Permission	Admin group																																											
Usage Guidelines	N/A																																											
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial protocol dnp3 NPort S9650I-16-2HV (config-dnp3)# address-table Address table :</pre> <table><thead><tr><th>Channel number</th><th>Type</th><th>Definition</th><th>DNP3 Address</th></tr></thead><tbody><tr><td>1</td><td>DNP3 Serial</td><td>Port 1</td><td>00001 -</td></tr><tr><td>00005</td><td></td><td></td><td></td></tr><tr><td>2</td><td>DNP3 Serial</td><td>Port 2</td><td>00006 -</td></tr><tr><td>00010</td><td></td><td></td><td></td></tr><tr><td>3</td><td>DNP3 Serial</td><td>Port 3</td><td>00011 -</td></tr><tr><td>00015</td><td></td><td></td><td></td></tr><tr><td>4</td><td>DNP3 Serial</td><td>Port 4</td><td>00016 -</td></tr><tr><td>00020</td><td></td><td></td><td></td></tr><tr><td>5</td><td>DNP3 TCP</td><td>192.168.1.1 : 502</td><td>10000 - 11000</td></tr></tbody></table>				Channel number	Type	Definition	DNP3 Address	1	DNP3 Serial	Port 1	00001 -	00005				2	DNP3 Serial	Port 2	00006 -	00010				3	DNP3 Serial	Port 3	00011 -	00015				4	DNP3 Serial	Port 4	00016 -	00020				5	DNP3 TCP	192.168.1.1 : 502	10000 - 11000
Channel number	Type	Definition	DNP3 Address																																									
1	DNP3 Serial	Port 1	00001 -																																									
00005																																												
2	DNP3 Serial	Port 2	00006 -																																									
00010																																												
3	DNP3 Serial	Port 3	00011 -																																									
00015																																												
4	DNP3 Serial	Port 4	00016 -																																									
00020																																												
5	DNP3 TCP	192.168.1.1 : 502	10000 - 11000																																									

2.3.5.3 address-table add

To configure the address table of the DNP3 protocol.

Commands

address-table add remote-ip *ip-address* **remote-tcp-port** *tcp-port* **addr-start** *addr-start* **addr-end** *addr-end*

Syntax Description	address-table	To configure the address table of DNP3 mode.
	remote-ip	The destination is tcp.
	remote-tcp-port	Remote side TCP port
	addr-start	Set the start address.
	addr-end	Set the end address.
Defaults	N/A	
Permission	Admin group	
Usage Guidelines	Ip-address: IPv4 address tcp-port: 1 - 65535 address: 1 to 65519	
Examples	<pre>NPort S9650I-16-2HV(config)# interface serial protocol dnp3 NPort S9650I-16-2HV (config-dnp3)# address-table remote-ip 192.168.1.1 remote-tcp-port 20000 addr-start 1 addr-end 5</pre>	

2.3.5.4 address-table edit

To configure the address table of the DNP3 protocol.

Commands

address-table edit channel id [remote-ip ip-address][remote-tcp-port tcp-port][addr-start addr-start][addr-end addr-end]

Syntax Description	address-table	To configure the address table of DNP3 mode.		
	channel	The channel ID of DNP3 address table		
	remote-ip	The destination IP address, this setting only works when the channel type is DNP3 TCP.		
	remote-tcp-port	Remote side TCP port, this setting only works when the channel type is DNP3 TCP.		
	addr-start	Set the start address.		
	addr-end	Set the end address.		
Defaults	N/A			
Permission	Admin group			
Usage Guidelines	Ip-address: IPv4 address tcp-port: 1 - 65535 address: 1 to 65519			
Examples	NPort S9650I-16-2HV(config)# interface serial protocol dnp3			
	NPort S9650I-16-2HV (config-dnp3)# address-table			
	Address table :			
	Channel number	Type	Definition	DNP3 Address
	Range			
	-----	-----	-----	

	1	DNP3 Serial	Port 1	00001 -
	00005			
	2	DNP3 Serial	Port 2	00006 -
	00010			
	3	DNP3 Serial	Port 3	00011 -
00015				
4	DNP3 Serial	Port 4	00016 -	
00020				
5	DNP3 TCP	192.168.1.1 : 502	10000 - 11000	
NPort S9650I-16-2HV (config-dnp3)# address-table edit channel 1 sid-start 3 sid-end 5				
NPort S9650I-16-2HV (config- dnp3)# address-table edit channel 5 remote-tcp-port 505				
NPort S9650I-16-2HV (config- dnp3)# address-table edit channel 5 remote-ip 1.2.3.4 remote-tcp-port 1234				
NPort S9650I-16-2HV (config- dnp3)# address-table edit channel 5 remote-ip 1.2.3.4 remote-tcp-port 1234 sid-start 101 sid-end 110				

2.3.5.5 no address-table

To remove an entry of the address table of the DNP3 protocol.

Commands

no address-table channel *id*

Syntax	address-table	To configure the address table of DNP3 mode.		
Description	channel	The channel ID of DNP3 address table		
	<i>id</i>	DNP3 channel id		
Defaults	N/A			
Permission	Admin group			
Usage Guidelines	N/A			
Examples	NPort S9650I-16-2HV(config)# interface serial protocol dnp3			
	NPort S9650I-16-2HV (config-dnp3)# address-table			
	Address table :			
	Channel number	Type	Definition	DNP3 Address
	Range			
	-----	-----	-----	

	1	DNP3 Serial	Port 1	00001 -
	00005			
	2	DNP3 Serial	Port 2	00006 -
	00010			
	3	DNP3 Serial	Port 3	00011 -
	00015			
4	DNP3 Serial	Port 4	00016 -	
00020				
5	DNP3 TCP	192.168.1.1 : 502	10000 - 11000	
NPort S9650I-16-2HV (config-dnp3)# no address-table edit channel 5				