NETWORK PACKET BROKERS

COMMEND LINE REFERENCE

Models: T5850-32S2Q, T5850-48S6Q, T5850-48S2Q4C, T8050-20Q4C, T5800-8TF12S

COMMAND LINE REFERENCE

Contents

Revision History

Date	Version	Description
2019-09-24	R1.0	Initial Release for T5850, T8050 Series (Separate from T5800)
2019-11-06	R1.1	Update document for product upgrade
2020-03-09	R1.2	Update document for product upgrade
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2021-02-19	R1.7	Update document for product upgrade

1.Preface

1.1 Preface

1.2 Declaration

This document updates at irregular intervals because of product upgrade or other reason.
This document is for your reference only.

1.3 Suggestion feedback

If you have any questions when using our product and reading this document, please contact us: sales@fs.com

1.4 Audience

This document is for the following audiences:
System maintenance engineers
Debugging and testing engineers
Network monitoring engineers
Field maintenance engineers

1.5 Conventions

Table 1-1 Command syntax convention table

Syntax	Description
Italic type with capital letters	Use italic type with capital letters for the parameters of the commands. Parameters are the parts which need to replace with the actual value.
(x|y|...)	Select one among the choices.
(x|y|...|)	Select one or none among the choices.
[x|y|...]	Select one or more among the choices. The choices can be selected repeatedly.
[x|y|...|]	Select one or more or none among the choices. The choices can be selected repeatedly.
{x|y|...}	Select one or more among the choices. The choices can be selected only once.
{x|y|...|}	Select one or more or none among the choices. The choices can be selected only once.
<x-y>	Select a number between x and y.

2 INTERFACE Commands

2.1 interface range

Command Purpose

Use this command to enter interface range mode, include physical port, linkagg interface.

Command Syntax

interface range KLINE

Parameter	Parameter Description	Parameter Value
KLINE	Interface range, with "," or "-" to distinguish the interface range set.	-

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example shows how to enter interface range eth-0-1 to eth-0-24 and shutdown these 24 interfaces:

```
NPB(config)# interface range eth-0-1 - 24
NPB(config-if-range)# shutdown
```

The following example shows how to enter interface eth-0-8 and eth-0-10, and shutdown these 2 interfaces:

```
NPB(config)# interface range eth-0-8,eth-0-10
NPB(config-if-range)# shutdown
```

Related Commands

interface

2.2 interface

Command Purpose

Use this command to enter interface mode.

Command Syntax

interface IF_NAME

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to enter the mode. e.g.eth-0-1, agg1.	-

Command Mode

Global Configuration

Default

None

Usage

The interface name can be either a physical port name (i.e. eth-0-1) or link-agg name (i.e. agg1).

Examples

This example shows how to enter physical port eth-0-1:

```
NPB(config)# interface eth-0-1
```

This example shows how to enter aggregation interface agg10:

```
NPB(config)# interface agg10
```

Related Commands

interface range

2.3 shutdown

Command Purpose

Use this command to disable the interface manually. Use the no form of this command to enable the interface.

Command Syntax

shutdown

no shutdown

Command Mode

Interface Configuration

Default

No shutdown

Usage

None

Examples

The following example shows how to enter physical port eth-0-1 and disable the interface:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# shutdown
```

The following example shows how to enter physical port eth-0-1 and enable the interface:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# no shutdown
```

Related Commands

show interface status

2.4 description

Command Purpose

Use this command to set the description on the interface.
And use the no form of this command to delete the description.

Command Syntax

description LINE
no description

Parameter	Parameter Description	Parameter Value
LINE	Interface description	-

Command Mode

Interface Configuration

Default

None

Usage

None

Examples

The following example shows how to set the description on the interface eth-0-1:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# description TenGigabitEthernet
```

The following example shows how to remove the description on the interface eth-0-1:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# no description
```

Related Commands

show interface description

2.5 speed

Command Purpose

Use this command to set the interface speed. And use the no form of this command to restore the interface to its default speed value.

Command Syntax

speed (auto | 10 | 100 | 1000 | *2.5G* | *5G* | *10G* | *40G* | *100G*)
no speed

Parameter	Parameter Description	Parameter Value
auto	Auto negotiation the speed of a port	-
10	Force the port speed to be 10Mb/s	-
100	Force the port speed to be 100Mb/s	-
1000	Force the port speed to be 1000Mb/s	-
2.5G	Force the port speed to be 2.5Gb/s	-
5G	Force the port speed to be 5Gb/s	-
10G	Force the port speed to be 10Gb/s	-
40G	Force the port speed to be 40Gb/s	-
100G	Force the port speed to be 100Gb/s	-

Command Mode

Interface Configuration

Default

Auto

Usage

For different interface, some speed value can't be set.

Examples

The following example shows how to set the port speed to 1000Mb/s:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# speed 1000
```

The following example shows how to restore the port speed to default value:

```
NPB(config-if-eth-0-1)# no speed
```

Related Commands

show interface status

show interface

2.6 duplex

Command Purpose

Use this command to set the mode of operation for a port. And use the no form of this command set the mode of operation to default value.

Command Syntax

duplex (auto | full | half)

no duplex

Parameter	Parameter Description	Parameter Value
auto	Auto negotiation mode, the port should be automatically detected in full duplex or half duplex state according to the device it is connected to	
full	Full duplex mode	-
half	Half duplex mode, can only be configured on ports of 10M or 100M	-

Command Mode
Interface Configuration

Default
Auto

Usage
Half mode is only supported on 10M/100M link.

Examples
The following example shows how to set interface eth-0-1 duplex mode to auto:

```
NPB(config)#                          interface                          eth-0-1
NPB(config-if-eth-0-1)# duplex auto
```

The following example shows how to set interface eth-0-1 duplex mode to full:

```
NPB(config-if-eth-0-1)# duplex full
```

The following example shows how to set interface eth-0-1 duplex mode to default:

```
NPB(config-if-eth-0-1)# no duplex
```

Related Commands
show interface status
show interface

2.7 unidirectional

Command Purpose
Use this command to set unidirectional function for a port.

Command Syntax
unidirectional (enable | disable | rx-only)

Parameter	Parameter Description	Parameter Value
enable	Enable unidirectional	-
disable	Disable unidirectional	-
rx-only	Receive only	-

Command Mode
Interface Configuration

Default
Disable

Usage
None

Examples
The following example shows how enable unidirectional on interface eth-0-1:

```
NPB(config)#                          interface                          eth-0-1
NPB(config-if-eth-0-1)# unidirectional enable
```

The following example shows how disable unidirectional on interface eth-0-1:

```
NPB(config-if-eth-0-1)# unidirectional disable
```

Related Commands
show interface status
show interface

2.8 fec

Command Purpose
Use the command to set fec function for a port. And use the no form of this command set fec function to default value.

Command Syntax
fec (enable | disable)
no fec

Parameter	Parameter Description	Parameter Value
enable	Enable fec	-
disable	Disable fec	-

Command Mode
Interface Configuration

Default
Disable

Usage
FEC is only support on 100G physical interface

Examples
The following example shows how to enable fec function for a port:

```
NPB(config)#                          interface                    eth-0-1
NPB(config-if-eth-0-1)# fec enable
```

The following example shows how to disable fec function for a port:

```
NPB(config)#                          interface                    eth-0-1
NPB(config-if-eth-0-1)# no fec
```

Related Commands
show interface status
show interface

2.9 static-channel-group

Command Purpose
Use this command to add a port to a static channel group. And use the no form of this command to remove this port from this static channel group.

Command Syntax
static-channel-group *AGG_GID*
no static-channel-group

Parameter	Parameter Description	Parameter Value
AGG_GID	Channel group ID	range is <1-55>

Command Mode
Interface Configuration

Default
None

Usage
The valid range of channel group id is limited by hardware and is different for each model.

Examples
The following example shows how to add interface eth-0-1 to static channel group 2:

```
NPB(config)#                          interface                    eth-0-1
NPB(config-if-eth-0-1)# static-channel-group 2
```

The following example shows how to remove interface eth-0-1 from static channel group 2:

```
NPB(config)#                          interface                    eth-0-1
NPB(config-if-eth-0-1)# no static-channel-group
```

Related Commands
show interface

2.10 media-type

Command Purpose
Use this command to set media type of combo port. And use the no form of this command to set media type to default.

Command Syntax
media-type (auto | rj45 | sfp)
no media-type

Parameter	Parameter Description	Parameter Value
auto	Automatically select media type of combo port	-
rj45	Set media type as rj45	-
sfp	Set media type as sfp	-

Command Mode
Interface Configuration

Default
Auto

Usage
Different media type of the combo port cannot be active at the same time.

Examples
The following example shows how to set media type of combo port:
```
NPB(config-if-eth-0-1) media-type auto
```
The following example shows how to set media type of combo port to default:
```
NPB(config-if-eth-0-1)# no media-type
```

Related Commands
show interface

2.11 show management interface

Command Purpose
Use this command to display the status and configurations of management interface.

Command Syntax
show management interface

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to displays the states, configurations and statistics on management interface:
```
NPB# show management interface

Management Interface current state: UP
Description:
Link encap: Ethernet HWaddr: 00:1E:08:0B:E6:C1
net addr: 10.10.39.104 Mask: 255.255.254.0
Bcast: 10.10.39.255 MTU: 1500
Speed: 1000Mb/s Duplex: Full
Auto-negotiation: Enable
Received: 1030834 Packets, 79596824 Bytes (75.9 MiB)
Transmitted: 110758 Packets, 16209745 Bytes (15.4 MiB)
```

Related Commands
show interface status

2.12 show interface

Command Purpose
Use this command to display the configurations and statistics on all interfaces or one interface.

Command Syntax
show interface (*IF_NAME* |)

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to show	-

Command Mode
Privileged EXEC

Default
None

Usage

If the parameter "IF_NAME" is not specified, the command indicates that all interfaces on this device should be displayed; otherwise only the specified interface should be displayed.

Examples

The following example shows how to display the configurations and statistics of interface eth-0-1:

```
NPB# show interface eth-0-1

Interface eth-0-1
 Interface current state: DOWN
 Hardware is Port, address is 001e.080b.e6c2
 Bandwidth 1000000 kbits
 Index 1 , Metric 1
 Speed - auto , Duplex - auto , Metadata - Disable , Media type is UNKNOWN
 Link type is autonegotiation
 Admin input flow-control is off, output flow-control is off
 Oper input flow-control is off, output flow-control is off
 The Maximum Frame Size is 12800 bytes
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes
  Received 0 unicast, 0 broadcast, 0 multicast
  0 runts, 0 giants, 0 input errors, 0 CRC
  0 frame, 0 overrun, 0 pause input
  0 packets output, 0 bytes
  Transmitted 0 unicast, 0 broadcast, 0 multicast
  0 underruns, 0 output errors, 0 pause output
```

Related Commands

show interface status

2.13 show interface summary

Command Purpose

Use this command to display the statistics on all interfaces or one interface.

Command Syntax

show interface summary (*IF_NAME* |)

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to show	-

Command Mode

Privileged EXEC

Default

none

Usage

If the parameter "IF_NAME" is not specified, the command indicates that all interfaces on this device should be displayed; otherwise only the specified interface should be displayed.

Examples

The following example shows how to display the statistic of interface eth-0-1:

```
NPB# show interface summary eth-0-1

RXBS: rx rate (bits/sec)                    RXPS: rx rate (pkts/sec)
TXBS: tx rate (bits/sec)                    TXPS: tx rate (pkts/sec)
Interface  Link  RXBS  RXPS  TXBS  TXPS
----------+------+-------------+-------------+-------------+-------------
eth-0-1    DOWN  0     0     0     0
```

Related Commands

show interface

2.14 show interface status

Command Purpose

Use this command to display the brief information on all physical and link aggregation interfaces.

Command Syntax

show interface status

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the brief information on all physical and link aggregation interfaces:

```
NPB#                    show                    interface                    status

Name          Status          Duplex     Speed        Mode        Type              Description
----------+-----------+--------+--------+-------+------------+----------------
eth-0-1          down                    auto         auto              trunk        UNKNOWN
eth-0-2          down                    auto         auto              trunk        UNKNOWN
eth-0-3          down                    auto         auto              trunk        UNKNOWN
eth-0-4          down                    auto         auto              trunk        UNKNOWN
eth-0-5          down                    auto         auto              trunk        UNKNOWN
eth-0-6          down                    auto         auto              trunk        UNKNOWN
eth-0-7          down                    auto         auto              trunk        UNKNOWN
eth-0-8          down                    auto         auto              trunk        UNKNOWN
eth-0-9          down                    auto         auto              trunk        UNKNOWN
eth-0-10        down                    auto         auto              trunk        UNKNOWN
eth-0-11        down                    auto         auto              trunk        UNKNOWN
eth-0-12        down                    auto         auto              trunk        UNKNOWN
eth-0-13        down                    auto         auto              trunk        UNKNOWN
eth-0-14        down                    auto         auto              trunk        UNKNOWN
eth-0-15        down                    auto         auto              trunk        UNKNOWN
eth-0-16        down                    auto         auto              trunk        UNKNOWN
eth-0-17        down                    auto         auto              trunk        UNKNOWN
eth-0-18        down                    auto         auto              trunk        UNKNOWN
eth-0-19        down                    auto         auto              trunk        UNKNOWN
eth-0-20        down                    auto         auto              trunk        UNKNOWN
eth-0-21        down                    auto         auto              trunk        UNKNOWN
eth-0-22        down                    auto         auto              trunk        UNKNOWN
eth-0-23        down                    auto         auto              trunk        UNKNOWN
eth-0-24        down                    auto         auto              trunk        UNKNOWN
eth-0-25        down                    auto         auto              trunk        UNKNOWN
eth-0-26        down                    auto         auto              trunk        UNKNOWN
eth-0-27        down                    auto         auto              trunk        UNKNOWN
eth-0-28        down                    auto         auto              trunk        UNKNOWN
eth-0-29        down                    auto         auto              trunk        UNKNOWN
eth-0-30        down                    auto         auto              trunk        UNKNOWN
eth-0-31        down                    auto         auto              trunk        UNKNOWN
eth-0-32        down                    auto         auto              trunk        UNKNOWN
FGE0/33         down                    full         40000             trunk        UNKNOWN
FGE0/34         down                    full         40000             trunk        UNKNOWN
agg5     down     auto    auto    trunk   LAG
```

Related Commands

show interface

2.15 show interface description

Command Purpose

Use this command to display the description information on all interfaces.

Command Syntax

show interface description

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the description on all physical and link aggregation interfaces:

```
NPB# show interface description

Name Status Description
----------+-----------+------------------------------------------------------
eth-0-1 down TenGigabitEthernet
eth-0-2 down
eth-0-3 down
eth-0-4 down
eth-0-5 down
eth-0-6 down
eth-0-7 down
eth-0-8 down
eth-0-9 down
eth-0-10 down
eth-0-11 down
eth-0-12 down
eth-0-13 down
eth-0-14 down
eth-0-15 down
eth-0-16 down
eth-0-17 down
eth-0-18 down
eth-0-19 down
eth-0-20 down
eth-0-21 down
eth-0-22 down
eth-0-23 down
eth-0-24 down
eth-0-25 down
eth-0-26 down
eth-0-27 down
eth-0-28 down
eth-0-29 down
eth-0-30 down
eth-0-31 down
eth-0-32 down
FGE0/33 down
FGE0/34 down
agg5 down LinkAgg5
```

Related Commands

show interface

2.16 clear counters

Command Purpose

Use this command to clear the statistics information on the interfaces.

Command Syntax

clear counters (*IF_NAME* |)

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to clear the statistics counters.	-

Command Mode
Privileged EXEC

Default
None

Usage
If the parameter "IF_NAME" is not specified, the command indicates that all interfaces' statistics counters information on this device should be cleared; otherwise only the specified interface should be cleared.

Examples
The following example shows how to clear the statistics information on all interfaces:
```
NPB# clear counters
```
The following example shows how to clear the statistics information on the interface eth-0-1:
```
NPB# clear counters eth-0-1
```

Related Commands
show interface

2.17 crc-check

Command Purpose
Use this command to set CRC check function for a port.

Command Syntax
crc-check enable
no crc-check enable

Parameter	Parameter Description	Parameter Value
enable	crc check function enable	-

Command Mode
Interface Configuration

Default
Disable

Usage
None

Examples
The following example shows how to enable CRC check function for a port:
```
NPB#                                configure                terminal
NPB(config)#                            interface                eth-0-1
NPB(config-if-eth-0-1)# crc-check enable
```
The following example shows how to disable CRC check function for a port:
```
NPB#                                configure                terminal
NPB(config)#                            interface                eth-0-1
NPB(config-if-eth-0-1)# no crc-check enable
```

Related Commands
None

2.18 crc-recalculation

Command Purpose
Use this command to set CRC recalculation function for a port.

Command Syntax
crc-recalculation enable
no crc-recalculation enable

Parameter	Parameter Description	Parameter Value
enable	crc recalculation function enable	-

Command Mode
Interface Configuration

Default
enable

Usage
None

Examples
The following example shows how to enable CRC recalculation function for a port:

```
NPB#                                    configure                   terminal
NPB(config)#                                interface                   eth-0-1
NPB(config-if-eth-0-1)# crc-recalculation enable
```

The following example shows how to disable CRC recalculation function for a port:

```
NPB#                                    configure                   terminal
NPB(config)#                                interface                   eth-0-1
NPB(config-if-eth-0-1)# no crc-recalculation enable
```

Related Commands
None

2.19 show this

Command Purpose
Use this command to show the interface information

Command Syntax
show this

Command Mode
Interface Configuration

Default
None

Usage
None

Examples
The following example shows how to show interface information:

```
NPB(config-if-eth-0-1)#                 show                        this

interface                                                           eth-0-1
!
```

Related Commands
None

3 ErrDisable Commands

3.1 errdisable detect

Command Purpose

Use this command to enable link error status detection function for ports. And use the no form of this command to restore to default value.

Command Syntax

errdisable detect reason link-flap

no errdisable detect reason link-flap

Parameter	Parameter Description	Parameter Value
link-flap	Link oscillation detection	-

Command Mode

Global Configuration

Default

Default link-flap is enable

Usage

None

Examples

The following example shows how to enable link error status detection function for port:

```
NPB#                                    configure                    terminal
NPB(config)# errdisable detect reason link-flap
```

The following example shows how to disable link error status detection function for port:

```
NPB#                                    configure                    terminal
NPB(config)# no errdisable detect reason link-flap
```

Related Commands

show errdisable detect

3.2 errdisable recovery interval

Command Purpose

Use this command to set the recovery time of the link from the error state. And use the no form of this command to restore recovery time to default value.

Command Syntax

errdisable recovery interval *ERRDIS_RECOVER_TIMER_PARAM*

no errdisable recovery interval

Parameter	Parameter Description	Parameter Value
ERRDIS_RECOVER_TIMER_PARA	Time interval to recover from error state	range is 30-86400, unit is second

Command Mode

Global Configuration

Default

300

Usage

None

Examples

The following example shows how to set the interval for error status recovery to 100 seconds:

```
NPB#                                    configure                    terminal
NPB(config)# errdisable recover interval 100
```

The following example shows how to restore the interval to default value:

```
NPB#                                    configure                    terminal
NPB(config)# no errdisable recover interval
```

Related Commands
show errdisable recovery

3.3 errdisable recovery reason

Command Purpose
Use this command to enable the error recovery function for the specified reason. And use the no form of this command to disable this function.

Command Syntax
errdisable recovery reason link-flapno errdisable recovery reason link-flap

Parameter	Parameter Description	Parameter Value
link-flap	Enable or disable the error recovery function for link oscillation	-

Command Mode
Global Configuration

Default
Disable

Usage
Use this command to enable or disable the error recovery function for the specified reason。

Examples
The following example shows how to enable the error recovery function for port:

```
NPB#                                    configure                    terminal
NPB(config)# errdisable recover reason link-flap
```

The following example shows how to disable the error recovery function for port:

```
NPB#                                    configure                    terminal
NPB(config)# no errdisable recover reason link-flap
```

Related Commands
show errdisable recovery

3.4 errdisable flap

Command Purpose
Use this command set link oscillation parameters. And use the no form of this command to restore to default setting.

Command Syntax
errdisable flap reason link-flap *ERRDIS_FLAP_COUNT ERRDIS_FLAP_TIME*
no errdisable flap reason link-flap

Parameter	Parameter Description	Parameter Value
ERRDIS_FLAP_COUNT	The maximum number of possible oscillations before setting the port to errdisable	range is 1-100
ERRDIS_FLAP_TIME	The time of possible oscillations before setting the port to errdisable	range is 1-120

Command Mode
Global Configuration

Default
10

Usage
There are two parameters in link flap error detection, one is flap count, the other is flap time, if the count of flap reach the max flap count in time of flap time specified, the port will enter errdisable state.

Examples
The following example shows how to set link oscillation parameters:

```
NPB#                                    configure                    terminal
NPB(config)# errdisable flap reason link-flap 30 40
```

The following example shows how to restore link oscillation parameters to default value:

```
NPB#                                configure                                terminal
NPB(config)# no errdisable flap reason link-flap
```

Related Commands

show errdisable flap

3.5 show errdisable detect

Command Purpose

Use this command to display whether error detection is enabled.

Command Syntax

show errdisable detect

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display whether error detection is enabled:

```
NPB#                          show                          errdisable                          detect

ErrDisable          Reason                                                    Detection          status
------------------------+--------------------
link-flap           Enabled
```

Related Commands

errdisable detect reason

3.6 show errdisable recovery

Command Purpose

Use this command to display whether error recovery is enabled.

Command Syntax

show errdisable recovery

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to get the recovery status of all error reason. If link error is happened, it can get the recovery information.

Examples

The following example shows how to display whether error recovery is enabled:

```
NPB#                          show                          errdisable                          recovery

ErrDisable          Reason                                                    Timer          status
------------------------+--------------------
link-flap                                                                                    Enabled
Timer interval: 300 seconds
```

Related Commands

errdisable recovery interval
errdisable recovery reason

3.7 show errdisable flap

Command Purpose

This command is used to display parameters for link oscillation error detection.

Command Syntax

show errdisable flap

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to display the link oscillation error detection time, unit is second.

Examples

The following example shows how to display the link oscillation error detection time:

```
NPB#                                show                                errdisable                                flap

ErrDisable              Reason              Flaps                                                Time              (sec)
-----------------+----------+----------
link-flap       10       10
```

Related Commands

errdisable flap

4 FLOW Commands

4.1 show interface flow statistics

Command Purpose

Use this command to show statistics information which matched the flow on the interface.

Command Syntax

show interface flow statistics *IF_NAME* (*FLOW_SEQ_NUM* |)

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify an interface name to show flow statistics. This command supports physical or link aggregation interfaces.	-
FLOW_SEQ_NUM	Specify sequence-number to show flow statistics. If the sequence-number is not specified, this command indicates that all rules on this interface should be shown.	-

Command Mode

Privileged EXEC

Default

None

Usage

Interface name must be specified.

Examples

The following example shows how to display the flow statistic on interface eth-0-1:

```
NPB# show interface flow statistics eth-0-1

TAP groups name: g1
flow name: f1
sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any ( bytes 100 packets 1 )
sequence-num 20 deny any src-ip any dst-ip any ( bytes 86 packets 1 )
(total bytes 186 total packets 2 )
```

Related Commands

show flow

clear interface flow statistics

4.2 clear interface flow statistics

Command Purpose

Use this command to clear statistics information which matched the flow on the interface.

Command Syntax

clear interface flow statistics *IF_NAME*

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify an interface name to clear flow statistics. This command supports physical or link aggregation interfaces.	-

Command Mode

Privileged EXEC

Default
None

Usage
Interface name must be specified.

Examples
The following example shows how to clear statistics information which matched the flow on the interface:

```
NPB# clear interface flow statistics eth-0-1
```

The following example shows the result after using the command in the example above:

```
NPB# show interface flow statistics eth-0-1

TAP groups name: g1
flow name: f1
sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any ( bytes 0 packets 0 )
sequence-num 20 deny any src-ip any dst-ip any ( bytes 0 packets 0 )
(total bytes 0 total packets 0 )
```

Related Commands
show interface flow statistics

4.3 show flow

Command Purpose
Use this command to show the configuration of flow.

Command Syntax
show flow (*NAME_STRING* |)

Parameter	Parameter Description	Parameter Value
NAME_STRING	Flow name, up to 20 characters. If the flow name is not specified, this command indicates that all flows should be shown.	-

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
This example shows the configuration of flow:

```
NPB# show flow

flow f1
remark flow1ipdeny
sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any
sequence-num 20 deny any src-ip any dst-ip any
flow f2
sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any
```

Related Commands
flow

4.4 flow

Command Purpose
Use this command to create Flow and then enter Flow configuration mode.Use the no form of this command to delete the flow.

Command Syntax
flow *NAME_STRING* (type decap |)
no flow *NAME_STRING*

Parameter	Parameter Description	Parameter Value
NAME_STRING	Flow name	up to 20 characters
type decap	Set the flow type as tunnel decap. Flow with "type decap" parameter can use "inner-match" fields.	-

Command Mode
Global Configuration

Default
None

Usage
If the system already has a flow with the same name, this command will enter the flow configuration mode.
When the name is not used by any flow, this command is to create the flow and then enter the flow configuration mode. When configured with parameter "type decap" means this flow match tunnel decap, which flow entries can configure "inner-match" fields.

Examples
This example shows how to create a flow named f1 and then enter the flow configuration mode:

```
NPB(config)# flow f1
NPB(config-flow-f1)#
```

The following example shows how to delete the flow:

```
NPB(config)# no flow f1
```

Related Commands
show flow

4.5 remark

Command Purpose
Use this command to add remarks for the flow.
Use the no form of this command to delete the remarks.

Command Syntax
remark *NAME_STRING*
no remark

Parameter	Parameter Description	Parameter Value
NAME_STRING	Remark string for the flow	Remark string for the flow, which should begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, and maximum length is 100 characters.

Command Mode
Flow Configuration

Default
None

Usage
None

Examples
This example shows how to add a remark to describe the flow :

```
NPB(config-flow-f1)# remark flow1ipdeny
```

This example shows how to delete the remark of the flow:

```
NPB(config-flow-f1)# no remark
```

Related Commands
show flow

4.6 no sequence-num

Command Purpose
Use this command to delete a filter from flow.

Command Syntax

no sequence-num *FLOW_SEQ_NUM*

Parameter	Parameter Description	Parameter Value
FLOW_SEQ_NUM	Sequence-number	1 – 65535

Command Mode

Flow Configuration

Default

None

Usage

None

Examples

This example shows how to delete a flow filter with sequence number 10 from flow f1:

```
NPB(config-acl-acl1)# no sequence-num 10
```

Related Commands

show flow

sequence-num

4.7 sequence-num

Command Purpose

Use this command to add a rule in a flow filter.

Command Syntax

(sequence-num FLOW_SEQ_NUM |) (permit | deny) (PROTOCOL_NUM | any | mpls (any | label-num (any | MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any | FLOW_LABEL_VALUE) |) (mpls-label2 (any | FLOW_LABEL_VALUE) |) (mpls-label3 (any | FLOW_LABEL_VALUE) |)) | pppoe ppp-type (ipv4 | ipv6) | tcp (src-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | dst-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | tcp-code (match-all | match-any) (ack | fin | psh | rst | syn | urg) |) | udp (src-port (range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | dst-port (range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | vxlan-vni (VNI_VALUE VNI_VALUE_WILD | any) |) | icmp | igmp | ipip | gre (gre-key (GRE_KEY_VALUE GRE_KEY_WILD | any) |) | (erspan (ERSPAN_KEY_VALUE ERSPAN_KEY_WILD | any) |) | nvgre (nvgre-vsid (*NVGRE_VSID_VALUE NVGRE_ VSID _WILD* | any) |)) (src-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR) | src-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)) (dst-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR) | dst-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)) (flow-label (*FLOW_LABEL LABEL _WILD* | any) |) (dscp DSCP_VALUE | ip-precedence PRECEDENCE_VALUE |) (first-fragment | non-first-fragment | non-fragment | non-or-first-fragment | small-fragment | any-fragment |) (options |) (truncation |) (vlan (VLAN_ID VLAN_WILD | any) |) (inner-vlan (VLAN_ID VLAN_WILD | any) |) (cos COS_ID |) (inner-cos COS_ID |) (ether-type (ETHER_TYPE_VALUE ETHER_TYPE_WILD_VALUE | any) |) (src-mac (FLOW_MAC_ADDR FLOW_MAC_ADDR_WILD | any | host FLOW_MAC_ADDR) |) (dest-mac (FLOW_MAC_ADDR FLOW_MAC_ADDR_WILD | any | host FLOW_MAC_ADDR) |) (edit-macda MAC_ADDRESS |) (edit-macsa MAC_ADDRESS |) (edit-ipsa IP_ADDRESS |) (edit-ipda IP_ADDRESS |) (edit-ipv6sa IPv6_ADDRESS |) (edit-ipv6da IPv6_ADDRESS |) (edit-vlan VLAN_ID |) (un-tag | un-tag-outer-vlan | un-tag-inner-vlan |) (mark-source VLAN_ID |) (strip-header (strip-position (l2 | l3 | l4) |) (strip-offset OFFSET_VALUE |) |) ((ipv4-head | l4-head) UDF_VALUE UDF_VALUE_WILD UDF_OFFSET | udf udf-id UDF_ID (udf0 L2_UDF_VALUE L2_UDF_VALUE_WILD | udf1 L2_UDF_VALUE L2_UDF_VALUE_WILD | udf2 L2_UDF_VALUE L2_UDF_VALUE_WILD | udf3 L2_UDF_VALUE L2_UDF_VALUE_WILD |) |) (strip-inner-vxlan-header |) (inner-match MATCH_NAME |) (add-l2gre l2gre-sip L2GRE_SRC_IP l2gre-dip L2GRE_DEST_IP l2gre-dmac L2GRE_DEST_MAC l2gre-key L2GRE_KEY_NUM l2gre-key-length (16 | 20 | 24 | 32) |) (add-l3gre l3gre-sip L3GRE_SRC_IP l3gre-dip L3GRE_DEST_IP l3gre-dmac L3GRE_DEST_MAC |)

Parameter	Parameter Description	Parameter Value
FLOW_SEQ_NUM	Specify a sequence number to create the flow rule. The valid range for sequence number is 1- 65535. If the sequence number is not specified, system should automatically assign one number according to the base number and the step length. The base number is the maximum number	1-65535

	in the flow (0 for empty flow), the step length is 10.	
permit	Specify the action of the flow rule. Use the parameter "permit" to indicate packets match this rule is allowed to forward.	-
deny	Specify the action of the flow rule. Use the parameter "deny" to indicate packets match this rule is not allowed to forward.	-
PROTOCOL_NUM | any | tcp | udp | icmp | igmp | gre | nvgre	Specify the IP protocol number of the flow rule.	The valid range for IP protocol number is 0-255. Well known IP protocols can also be specified by name. e.g. IP protocol 1 = icmp, 2 = igmp, 6 = tcp, 17 = udp, 47 = gre/nvgre (gre protocol 0x0800 = gre, 0x6558 = nvgre). Specify the IP protocol number of the flow rule.
mpls (any | label-num (any | MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any|FLOW_LABEL_VALUE) |) (mpls-label2 (any|FLOW_LABEL_VALUE) |) (mpls-label3 (any|FLOW_LABEL_VALUE) |))	Specify the mpls label of the flow rule.	The mpls label number is 0-9.It can match 3 layers of MPLS label values at most.
pppoe ppp-type (ipv4 | ipv6)	Specify the pppoe ppp-type of the flow rule.	The ppp-type is ipv4 or ipv6.
src-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any)	Specify the layer 4 source port of the inner-match rule.	The valid range for L4 source port number is 0 – 65535. This filed is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Specify the layer 4 source port of the inner-match rule.
dst-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any)	Specify the layer 4 destination port of the inner-match rule.	The valid range for L4 destination port number is 0 – 65535. This filed is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Parameter "any" indicates packets with any L4 port can match this rule.
vxlan-vni (VNI_VALUE VNI_VALUE_WILD | any)	Specify the vxlan vni number of the flow rule.	The valid range for VNI value is 0-16777215.

	This filed is valid only if the IP protocol is UDP and L4 destination port 4789. VNI (VXLAN Network Identifier) is the identifier on the VXLAN network, which is similar to the traditional VLAN. Terminals in different VXLANs cannot connect with each other based on L2 network. One tenant uses one VNI (even if several terminals are in same VNI, they are regarding as one tenant).	The valid range for VNI wildcard bits is range 0x0-0xFFFFFF. VNI value and VNI wildcard bits both have 24bits. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates packets with any VNI value can match this rule.
gre-key (GRE_KEY_VALUE GRE_KEY_WILD | any)	Specify the gre key of the flow rule. This filed is valid only if the IP protocol is gre (Generic Routing Encapsulation).	The valid range for gre key value is 0-4294967295. The valid range for gre key wildcard bits is range 0x0-0xFFFFFFFF. Gre key value and wildcard bits both have 32bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates packets with any gre key value can match this rule.
erspan (ERSPAN_KEY_VALUE ERSPAN _KEY_WILD | any)	Specify the erspan key value of the flow rule. ERSPAN = Enhanced Remote SPAN.	Valid range for ERSPAM key value is 0-1023 Valid range for ERSPAM key wildcard bits is 0x0-0x3FF ERSPAN key value and wildcard bits both have 10bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit.
nvgre-vsid (NVGRE_VSID_VALUE NVGRE_VSID_WILD | any)	Specify the nvgre vsid value of the flow rule. Nvgre = Network Virtualization using Generic Routing Encapsulation.	Valid range for NVGRE VSID value is 0-16777215. Valid range for NVGRE VSID wildcard bits is 0x0-0xFFFFFF VSID is located in the low 24 bit of GRE head. VSID value and wildcard bits both have 24 bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates packets with any nvgre vsid value can match this rule.
src ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)	Specify the source IPv4 address of the flow rule. Use an IPv4 address and an IPv4 address wildcard to specify a network.	Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter "host" and an IPv4 address to specify an exactly address. Use the parameter "any" to indicate packets with any source

		IPv4 address value can match this rule.
dst ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)	Specify the destination IPv4 address of the flow rule. Use an IPv4 address and an IPv4 address wildcard to specify a network.	Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter "host" and an IPv4 address to specify an exactly address. Use the parameter "any" to indicate packets with any destination IPv4 address value can match this rule.
src ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)	Specify the source IPv6 address of the flow rule. Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.	Use the parameter "host" and an IPv6 address to specify an exactly address. Use the parameter "any" to indicate packets with any destination IPv6 address value can match this rule.
dst ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)	Specify the destination IPv6 address of the flow rule. Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.	Use the parameter "host" and an IPv6 address to specify an exactly address. Use the parameter "any" to indicate packets with any destination IPv6 address value can match this rule.
flow-label (FLOW_LABEL LABEL_WILD | any)	Specify the IPv6 Flow label of the flow rule.	Valid range for flow label is 0-1048575. Valid range for flow-label wildcard bits is 0x0-0xFFFFF Flow label value and wildcard bits both have 20bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates ipv6 packets with any flow label value can match this rule.
dscp DSCP_VALUE	Specify the DSCP in IPv4 packets value of the inner-match rule. DSCP = Differentiated Services Code Point. Specify the DSCP in IPv4 packets value of the inner-match rule. DSCP = Differentiated Services Code Point. Valid range of DSCP value is 0 – 63.	0-63
ip-precedence PRECEDENCE_VALUE	Specify the IP precedence in IPv4 packets of the inner-match rule. Valid range of IP precedence value is 0 – 7. Specify the IP precedence in IPv4 packets of the inner-match rule.	0-7

	Valid range of IP precedence value is 0 – 7. DSCP & ip precedence configurations are exclusive	
first-fragment	Match packets with first fragment	-
non-first-fragment	Match packets with non first fragment	-
non-fragment	Match packets with non fragment	-
non-or-first-fragment	Match packets with non first fragment	-
small-fragment	Match packets with small fragment	-
any-fragment	Match packets with any fragment	-
options	Match packets with IP options	-
truncation	Use this parameter to truncate the packets matched this rule. Use this parameter to truncate the packets matched this rule. The length of truncation is configured by the "truncation" command in global configuration mode.	-
vlan (VLAN_ID VLAN_WILD | any)	Specify the outer vlan id of the flow rule.	The valid range for vlan id is 0-4095. The valid range for vlan id wildcard bits is 0x0-0xFFF. Vlan id and wildcard bits both have 12bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates packets with any outer vlan id can match this rule.
inner-vlan (VLAN_ID VLAN_WILD | any)	Specify the inner vlan id of the flow rule.	The valid range for vlan id is 0-4095. The valid range for vlan id wildcard bits is 0x0-0xFFF. Vlan id and wildcard bits both have 12bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates packets with any outer vlan id can match this rule.
cos COS_ID	Specify the outer CoS value of the inner-match rule. CoS = Class of Service. Specify the outer CoS value of the inner-match rule. CoS = Class of Service.	0-7
inner-cos COS_ID	Specify the inner CoS value of the inner-match rule. CoS = Class of Service.	0-7

	Specify the inner CoS value of the inner-match rule. CoS = Class of Service.	
ether-type (ETHER_TYPE_VALUE ETHER_TYPE_WILD_VALUE | any)	Specify the ether-type of the flow rule.	The valid range for ether-type is 0x600-0xFFFF. The valid range for wildcard bits is 0x600-0xFFFF. Ether-type value and wildcard bits both have 16bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any ethertype value can match this rule.
src-mac (FLOW_MAC_ADDR FLOW_MAC_ADDR_WILD | any | host FLOW_MAC_ADDR)	Specify the source mac address	Specify the source mac address in HHHH.HHHH.HHHH format. Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any source mac address value can match this rule.
dest-mac (FLOW_MAC_ADDR FLOW_MAC_ADDR_WILD | any| host FLOW_MAC_ADDR)	Specify the destination mac address	Specify the destination mac address in HHHH.HHHH.HHHH format. Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any destination mac address value can match this rule.
edit-macda MAC_ADDRESS	Specify the destination mac address of the outgoing packets	Specify the destination mac address of the outgoing packets in HHHH.HHHH.HHHH format.
edit-macsa MAC_ADDRESS	Specify the source mac address of the outgoing packets	Specify the source mac address of the outgoing packets in HHHH.HHHH.HHHH format.。
edit-ipsa IP_ADDRESS	Specify the source IP address of the outgoing packets	Specify the source IP address of the outgoing packets in A.B.C.D format.。
edit-ipda IP_ADDRESS	Specify the destination IP address of the outgoing packets	Specify the destination IP address of the outgoing packets in

		A.B.C.D format.。
edit-ipv6sa IPv6_ADDRESS	Specify the source IPv6 address of the outgoing packets.	Specify the source IPv6 address of the outgoing packets.
edit-ipv6da IPv6_ADDRESS	Specify the destination IPv6 address of the outgoing packets.	Specify the destination IPv6 address of the outgoing packets.
edit-vlan VLAN_ID	Specify the vlan id of the outgoing packets.	The valid range for vlan id is 1 – 4094.
un-tag	Remove vlan tags of the packets.	-
un-tag-outer-vlan	Remove outer vlan tag of the packets.	-
un-tag-inner-vlan	Remove inner vlan tag of the packets.	-
mark-source VLAN_ID	Specify the vlan id of the outgoing packets.	The valid range for vlan id is 1 – 4094.
strip-header (strip-position (l2 | l3 | l4) |) (strip-offset OFFSET_VALUE |)	Remove the outer header of the tunnel packets. The strip-positon and strip-offset can not set and when the packet is gre/nvgre/vxlan/ipip/mpls/ppoe.	The parameter “strip-position” specifies the begging of the outer header. “l2” means begin with the layer 2 tunnel header. “l3” means begin with the layer 3 tunnel header. “l4” means begin with the layer 4 tunnel header. The parameter “strip-offset” specifies the user- defined offset to strip the tunnel outer header. The valid range for strip-offset is 0-30.
strip-inner-vxlan-header	Remove the inner vxlan header in the erspan packets. Remove the inner vxlan header in the erspan packets. This parameter is only valid when the packet is ERSPAN + VXLAN.	-
(ipv4-head | l4-head) UDF_VALUE UDF_VALUE_WILD UDF_OFFSET	UDF = User Define Format. The parameter “ipv4-head” indicates the packet is parsed at the beginning with the IPv4 header. The parameter “l4-head” indicates the packet is parsed at the beginning with the layer4 header.	Udf value and wildcard bits both have 32 bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. The parameter “UDF_OFFSET” specifies the offset bits from the beginning. The valid range of the offset is 0 -60.
inner-match MATCH_NAME	Specify the inner match profile of the flow rule. Specify the inner match profile of the flow rule. The inner-match profile is created by “inner-match” command in global configuration mode.	-
add-l2gre l2gre-sip L2GRE_SRC_IP l2gre-dip L2GRE_DEST_IP l2gre-dmac L2GRE_DEST_MAC l2gre-key L2GRE_KEY_NUM l2gre-key-length (16 | 20 | 24 | 32)	Use this action to add l2gre header. L2GRE_SRC_IP: L2GRE Source IP L2GRE_DEST_IP: L2GRE Destination IP L2GRE_DEST_MAC: L2GRE	-

	Destination MAC L2GRE_KEY_NUM: L2GRE Key Number	
add-l3gre l3gre-sip L3GRE_SRC_IP l3gre-dip L3GRE_DEST_IP l3gre-dmac L3GRE_DEST_MAC	Use this action to add l3gre header. L3GRE_SRC_IP: L3GRE Source IP L3GRE_DEST_IP: L3GRE Destination IP L3GRE_DEST_MAC: L3GRE Destination MAC	-
udf udf-id UDF_ID (udf0 L2_UDF_VALUE L2_UDF_VALUE_WILD | udf1 L2_UDF_VALUE L2_UDF_VALUE_WILD | udf2 L2_UDF_VALUE L2_UDF_VALUE_WILD | udf3 L2_UDF_VALUE L2_UDF_VALUE_WILD|)	UDF = User Define Format. The parameter "udf-id" indicates the packet is parsed at the beginning with the L2 header.	Udf value and wildcard bits both have 8 bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

Command Mode

Flow Configuration

Default

None

Usage

Wildcard bits in this command are used as reversed. That means value and wildcard bits have same length, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.E.g. IP address 10.10.10.0 wildcard 0.0.0.255 means 256 ip addresses from 10.10.10.0 to 10.10.10.255.Layer 4 information （e.g. tcp/udp port）and fragment information are exclusive.

Examples

This example shows how to add a flow filter with sequence number 10 to flow f1:

```
NPB(config)#                                                    flow                                                    f1
NPB(config-flow-f1)# sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any
```

Related Commands

no sequence-num

5 UDF Commands

5.1 show udf

Command Purpose

Use this command to show the configuration of UDF entries.

Command Syntax

show udf (*UDF_ID* |)

Parameter	Parameter Description	Parameter Value
UDF_ID	Specify a index to show the configuration of a specific UDF entry.	The range is 0-3

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows the configuration of UDF entries:

```
NPB# show udf

Udf Global Information:
 Offset Unit : 1 Bytes
Udf Index 0
 Udf Type : l2 header
 Udf Match-Field:
  ether-type 0x8100 0x0
 Offset : n/a|8|n/a|n/a
```

Related Commands

udf

5.2 udf

Command Purpose

Use this command to create a UDF entry or enter the configuration mode of a specific DUF entry.

Command Syntax

udf *UDF_ID* (offset-type *OFFSET_TYPE* |)

Parameter	Parameter Description	Parameter Value
UDF_ID	Specify a index of a UDF entry.	The range is 0-3
OFFSET_TYPE	The offset type should be configured when a UDF entry was first created.	The offset type can be l2-header

Command Mode

Global Configuration

Default

None

Usage

The UDF-ID also means the priority of UDF entries, smaller id is a higher priority.

Examples

This example shows how to create a UDF entry and enter it's configuration mode:

```
NPB(config)#                udf                1                offset-type                l2-header
NPB(config-udf-1)#
```

Related Commands

show udf

5.3 match

Command Purpose

Use this command to configure the match field for an UDF entry.

Command Syntax

match (ether-type *ETHER_TYPE_VALUE*)

Parameter	Parameter Description	Parameter Value
ether-type (ETHER_TYPE_VALUE)	Specify the ether-type of the flow rule.	The valid range for ether-type is 0x600-0xFFFF.

Command Mode

UDF Configuration

Default

None

Usage

None

Examples

This example shows how to configure the match field for an UDF entry:

```
NPB(config-udf-1)# match ether-type 0x8100
```

Related Commands

show udf

5.4 offset

Command Purpose

Use this command to configure the detailed offset value for an UDF entry.

Command Syntax

match (offset0 UDF_OFFSET | offset1 UDF_OFFSET | offset2 UDF_OFFSET | offset3 UDF_OFFSET |)

Parameter	Parameter Description	Parameter Value
UDF_OFFSET	Specifies the offset in bytes from the beginning.	The valid range of the offset is 0-63 bytes.

Command Mode

UDF Configuration

Default

None

Usage

None

Examples

This example shows how to configure the detailed offset value for an UDF entry:

```
NPB(config-udf-1)# offset offset0 1 offset1 20 offset3 63
```

Related Commands

show udf

6 PORT-GROUP Commands

6.1 port-group

Command Purpose

Use this command to create a port-group and enter the port-group configuration mode.
Use the no form of this command to delete the port-group.

Command Syntax

port-group *NAME_STRING* (*PORT_GROUP_ID* |)no port-group *NAME_STRING*

Parameter	Parameter Description	Parameter Value
NAME_STRING	Port-group Name string	The first character should be a-z or A-Z, character only can be 0-9A-Za-z.-_ and the max len is 31.
PORT_GROUP_ID	Port Group ID, range 1-48	1-48

Command Mode

Global Configuration

Default

None

Usage

This device supports at most 48 port-groups.

Examples

The following example shows how to add a port-group:

```
NPB(config)#                                port-group                                portgroup1
NPB(config-port-portgroup1)#
```

The following example shows how to delete a port-group:

```
NPB(config)# no port-group portgroup1
```

Related Commands

show port-group

6.2 member interface

Command Purpose

Use this command to add a member interface in port-group.
Use the no form of this command to delete the member interface.

Command Syntax

member interface *IF_NAME_EA*
no member interface *IF_NAME_EA*

Parameter	Parameter Description	Parameter Value
IF_NAME_EA	member interface Name string	Specify the interface name to enter the mode. e.g.eth-0-1, agg1.

Command Mode

Port-group Configuration

Default

None

Usage

This device supports at most 16 member interface.

Examples

The following example shows how to add a member interface in port-group:

```
NPB(config-port-portgroup1)# member interface eth-0-1
```

The following example shows how to delete a member interface in port-group:

```
NPB(config-port-portgroup1)# no member interface eth-0-1
```

Related Commands
show port-group

6.3 show port-group

Command Purpose
Use this command to display the configurations of port-group.

Command Syntax
show port-group (*NAME_STRING* |)

Parameter	Parameter Description	Parameter Value
NAME_STRING	Specify the port-group name to show	-

Command Mode
Privileged EXEC

Default
None

Usage
If the parameter "NAME_STRING" is not specified, the command indicates that all port-groups on this device should be displayed; otherwise only the specified port-group should be displayed.

Examples
The following example shows how to display the configurations port-group portgroup1:

```
NPB#                                    show                                    port-group

port-group                              portgroup1                              1
 member                                 interface                               eth-0-1
 member interface eth-0-2
```

Related Commands
show port-group flow statistics

6.4 show port-group flow statistics

Command Purpose
Use this command to display the statistics of port-group.

Command Syntax
show port-group flow statistics *NAME_STRING* （ *FLOW_SEQ_NUM* | ）

Parameter	Parameter Description	Parameter Value
NAME_STRING	Specify the port-group name to show	-
FLOW_SEQ_NUM	Specify sequence-number to show flow statistics. If the sequence-number is not specified, this command indicates that all rules on this interface should be shown.	-

Command Mode
Privileged EXEC

Default
None

Usage
The specified port-group statistics should be displayed.

Examples
The following example shows how to display the statistics port-group portgroup1:

```
NPB#                    show                    port-group              flow                    statistics

portgroup1
```

```
TAP group name: tapgroup1
 flow name: flow1
 sequence-num 10 permit gre src-ip any dst-ip any ( bytes 0 packets 0 )
 sequence-num 20 permit mpls any ( bytes 0 packets 0 )
(total bytes 0 total packets 0 )
```

Related Commands

show port-group

7 INNER-MATCH Commands

7.1 show inner-match

Command Purpose

Use this command to show the configuration of inner-match.

Command Syntax

show inner-match (*INNER_MATCH_NAME* |)

Parameter	Parameter Description	Parameter Value
INNER_MATCH_NAME	Specify an inner-match name to display.	The inner match name should begin with [a-z/A-Z/0-9], valid characters are [0-9A-Za-z.-], and maximum length is 20 characters. If the parameter " INNER_MATCH_NAME" is not specified, the command indicates that all inner-matches on this device should be displayed; otherwise only the specified one should be displayed

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows the configuration of all inner-match:

```
NPB#                                    show                                    inner-match

inner-match                                                                                 im1
 sequence-num      1      match      icmp      src-ip      any      dst-ip      any      vlan      any
inner-match                                                                                 im2
 sequence-num 1 match udp dst-port eq 4758 src-ip any dst-ip host 2.2.2.2
```

Related Commands

inner-match

7.2 inner-match

Command Purpose

Use this command to create inner-match and then enter Inner-match configuration mode.
Use the no form of this command to delete the inner-match.

Command Syntax

inner-match *INNER_MATCH_NAME*
no inner-match *INNER_MATCH_NAME*

Parameter	Parameter Description	Parameter Value
INNER_MATCH_NAME	Specify an inner-match name to create and enter the mode.	The inner match name should begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, and maximum length is 20 characters.

Command Mode

Global Configuration

Default
None

Usage
If the system already has an inner-match with the same name, this command will enter the inner-match configuration mode.
When the name is not used by any inner-match, this command is to create the inner-match firstly and then enter the inner-match configuration mode.

Examples
This example shows how to create a inner-match named im1 and then enter the inner-match configuration mode:

```
NPB(config)# inner-match im1
NPB(config-inner-match-im1)#
```

This example shows how to delete a inner-match named im1:

```
NPB(config)# no inner-match im1
```

Related Commands
show inner-match

7.3 remark

Command Purpose
Use this command to add remarks for the inner-match.

Command Syntax
remark *NAME_STRING*no remark

Parameter	Parameter Description	Parameter Value
NAME_STRING	Remark string for the inner-match	Begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, maximum length is 100 characters.

Command Mode
Inner-match Configuration

Default
None

Usage
None

Examples
This example shows how to add a remark to describe the inner-match:

```
NPB(config-inner-match-im1)# remark inner-match-1
```

This example shows how to delete the remark of the inner-match:

```
NPB(config-inner-match-im1)# no remark
```

Related Commands
show inner-match

7.4 no sequence-num

Command Purpose
Use this command to delete a filter from inner-match.

Command Syntax
no sequence-num *MATCH_SEQ_NUM*

Parameter	Parameter Description	Parameter Value
MATCH_SEQ_NUM	Sequence-number with the valid range 1 – 65535.	1-65535

Command Mode
Inner-match Configuration

Default
None

Usage
None

Examples

This example shows how to delete an inner-match filter with sequence number 10 from im1:

```
NPB(config-inner-match-im1)# no sequence-num 10
```

Related Commands

show inner-match
match

7.5 sequence-num

Command Purpose

Use this command to set matching rules for the inner-match filter.

Command Syntax

(sequence-num MATCH_SEQ_NUM |) match (PROTOCOL_NUM | any | mpls (any | label-num (any | MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any | FLOW_LABEL_VALUE) |) (mpls-label2 (any | FLOW_LABEL_VALUE) |) (mpls-label3 (any | FLOW_LABEL_VALUE) |)) | pppoe ppp-type (ipv4 | ipv6) | tcp (src-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | dst-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | tcp-code (match-all | match-any) (ack | fin | psh | rst | syn | urg) |) | udp (src-port (range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | dst-port (range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) |) | icmp | igmp) (src-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR) | src-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)) (dst-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR) | dst-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)) (flow-label (*FLOW_LABEL LABEL _WILD* | any) |) (dscp DSCP_VALUE | ip-precedence PRECEDENCE_VALUE |) (first-fragment | non-first-fragment | non-fragment | non-or-first-fragment | small-fragment | any-fragment |) (options |) (vlan (VLAN_ID VLAN_WILD | any) |) (inner-vlan (VLAN_ID VLAN_WILD | any) |) (cos COS_ID |) (inner-cos COS_ID |) (ether-type (ETHER_TYPE_VALUE ETHER_TYPE_WILD_VALUE | any) |) (src-mac (MATCH_MAC_ADDR MATCH_MAC_ADDR_WILD | any | host *MATCH _MAC_ADDR*) |) (dest-mac (MATCH_MAC_ADDR MATCH_MAC_ADDR_WILD | any | host MATCH_MAC_ADDR) |)

Parameter	Parameter Description	Parameter Value
sequence-num MATCH_SEQ_NUM	Specify a sequence number to create the inner-match rule.	The valid range for sequence number is 1- 65535. If the sequence number is not specified, system should automatically assign one number according to the base number and the step length. The base number is the maximum number in the inner-match (0 for empty inner-match), the step length is 10.
match	Match the packets according to the rule	-
PROTOCOL_NUM | any | tcp | udp | icmp | igmp	Specify the IP protocol number of the inner-match rule.	The valid range for IP protocol number is 0-255. Well known IP protocols can also be specified by name. e.g. IP protocol 1 = icmp, 2 = igmp, 6 = tcp, 17 = udp. Parameter "any" indicates packets with any IP protocol can match this rule.
mpls (any | label-num (any | MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any|FLOW_LABEL_VALUE) |) (mpls-label2 (any|FLOW_LABEL_VALUE) |) (mpls-label3 (any|FLOW_LABEL_VALUE) |))	Specify the mpls label of the flow rule.	The mpls label number is 0-9.It can match 3 layers of MPLS label values at most.

pppoe ppp-type (ipv4 | ipv6)	Specify the pppoe ppp-type of the flow rule.	The ppp-type is ipv4 or ipv6.
src-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any)	Specify the layer 4 source port of the inner-match rule.	The valid range for L4 source port number is 0 – 65535. This filed is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Parameter "any" indicates packets with any L4 port can match this rule.
dst-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any)	Specify the layer 4 destination port of the inner-match rule.	The valid range for L4 destination port number is 0 – 65535. This filed is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Parameter "any" indicates packets with any L4 port can match this rule.
src-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)	Specify the source IPv4 address of the inner-match rule.	Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter "host" and an IPv4 address to specify an exactly address. Use the parameter "any" to indicate packets with any source IPv4 address value can match this rule.
dst-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)	Specify the destination IPv4 address of the inner-match rule.	Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter "host" and an IPv4 address to specify an exactly address. Use the parameter "any" to indicate packets with any destination IPv4 address value can match this rule.
src-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)	Specify the source IPv6 address of the inner-match rule.	Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0

		means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with any source IPv6 address value can match this rule.
dst-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)	Specify the destination IPv6 address of the inner-match rule.	Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with any destination IPv6 address value can match this rule.
flow-label (FLOW_LABEL LABEL_WILD | any)	Specify the IPv6 Flow label of the inner-match rule.	Valid range for flow label is 0-1048575. Valid range for flow-label wildcard bits is 0x0-0xFFFFF Flow label value and wildcard bits both have 20bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates ipv6 packets with any flow label value can match this rule.
dscp DSCP_VALUE	Specify the DSCP in IPv4 packets value of the inner-match rule. DSCP = Differentiated Services Code Point. Specify the DSCP in IPv4 packets value of the inner-match rule. DSCP = Differentiated Services Code Point.	0-63
ip-precedence PRECEDENCE_VALUE	Specify the IP precedence in IPv4 packets of the inner-match rule. DSCP & ip precedence configurations are exclusive.	0-7
first-fragment	Match packets with first fragment	-
non-first-fragment	Match packets with non first fragment	-
non-fragment	Match packets with non fragment	-
non-or-first-fragment	Match packets with non first fragment	-
small-fragment	Match packets with small fragment	-
any-fragment	Match packets with any fragment	-

options	Match packets with IP options	-
vlan (VLAN_ID VLAN_WILD | any)	Specify the outer vlan id of the inner-match rule.	The valid range for vlan id is 0-4095. The valid range for vlan id wildcard bits is 0x0-0xFFF. Vlan id and wildcard bits both have 12bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any outer vlan id can match this rule.
inner-vlan (VLAN_ID VLAN_WILD | any)	Specify the inner vlan id of the inner-match rule.	The valid range for vlan id is 0-4095. The valid range for vlan id wildcard bits is 0x0-0xFFF. Vlan id and wildcard bits both have 12bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any inner vlan id can match this rule.
cos COS_ID	Specify the outer CoS value of the inner-match rule. CoS = Class of Service. Specify the outer CoS value of the inner-match rule. CoS = Class of Service.	0-7
inner-cos COS_ID	Specify the inner CoS value of the inner-match rule. CoS = Class of Service. Specify the inner CoS value of the inner-match rule. CoS = Class of Service.	0-7
ether-type (ETHER_TYPE_VALUE ETHER_TYPE_WILD_VALUE | any)	Specify the ether-type of the inner-match rule.	The valid range for ether-type is 0x600-0xFFFF. The valid range for wildcard bits is 0x600-0xFFFF. Ether-type value and wildcard bits both have 16bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any ethertype value can match this rule.
src-mac (MATCH_MAC_ADDR MATCH_MAC_ADDR_WILD | any | host MATCH_MAC_ADDR)	Specify the source mac address in HHHH.HHHH.HHHH format.	Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address.

		Use the parameter “any” to indicate packets with any source mac address value can match this rule.
dest-mac (MATCH_MAC_ADDR MATCH_MAC_ADDR_WILD | any| host MATCH_MAC_ADDR)	Specify the destination mac address in HHHH.HHHH.HHHH format.	Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any destination mac address value can match this rule.

Command Mode

Inner-match Configuration

Default

None

Usage

Wildcard bits in this command are used as reversed. That means value and wildcard bits have same length, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

E.g.: ip address 10.10.10.0 wildcard 0.0.0.255 means 256 ip addresses from 10.10.10.0 to 10.10.10.255.

Layer 4 information （e.g. tcp/udp port）and fragment information are exclusive.

Examples

This example shows how to add an inner-match filter with sequence number 10 to im1:

```
NPB(config)#                                    inner-match                                    im1
NPB(config-inner-match-im1)# sequence-num 10 match any src-ip 10.10.10.0 0.0.0.255 dst-ip any
```

Related Commands

no sequence-num

8 ACL Commands

8.1 show interface egress ip access-list

Command Purpose

Use this command to show egress statistics of ip access-list on an interface.

Command Syntax

show interface egress ip access-list statistics *IF_NAME*

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to show IP ACL statistics. This command supports physical or link aggregation interfaces.	-

Command Mode

Privileged EXEC

Default

None

Usage

The interface name must be specified.

Examples

This example shows the egress ip access-list statistic of interface eth-0-1:

```
NPB# show interface egress ip access-list statistics eth-0-1

egress flow f2
sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any ( bytes 124 packets 1 )
(total bytes 124 total packets 1 )
```

Related Commands

clear interface egress ip access-list

8.2 clear interface egress ip access-list

Command Purpose

Use this command to clear egress statistics of ip access-list on an interface.

Command Syntax

clear interface egress ip access-list statistics *IF_NAME*

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to clear IP ACL statistics. This command supports physical or link aggregation interfaces.	➢ -

Command Mode

Privileged EXEC

Default

None

Usage

The interface name must be specified.

Examples

This example shows how to clear the egress ip access-list statistic of interface eth-0-1:

```
NPB# clear interface egress ip access-list statistics eth-0-1
```

This example shows the egress ip access-list statistic of interface eth-0-1:

```
NPB# show interface egress ip access-list statistics eth-0-1

egress flow f2
```

```
sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any ( bytes 0 packets 0 )
(total bytes 0 total packets 0 )
```

Related Commands

show interface egress ip access-list

8.3 show ip access-list

Command Purpose

Use this command to show the configuration of ip access-list.

Command Syntax

show ip access-list (*NAME_STRING* |)

Parameter	Parameter Description	Parameter Value
NAME_STRING	Ip access-list name	up to 20 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows the configuration of ip access-list:

```
NPB# show ip access-list

ip access-list f2
 sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any
```

Related Commands

ip access-list

8.4 ip access-list

Command Purpose

Use this command to create IP ACL and then enter IP ACL configuration mode.
Use the no form of this command to delete the IP ACL.

Command Syntax

ip access-list *NAME_STRING*no ip access-list *NAME_STRING*

Parameter	Parameter Description	Parameter Value
NAME_STRING	IP access-list name string	Begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, and maximum length is 20 characters.

Command Mode

Global Configuration

Default

None

Usage

If the system already has an IP ACL with the same name, this command will enter the IP ACL configuration mode
When the name is not used by any ACL, this command is to create the IP ACL firstly and then enter the IP ACL configuration mode.

Examples

This example shows how to create an IP ACL named f1 and then enter the IP ACL configuration mode:

```
NPB(config)# ip access-list f1
NPB(config-acl-f1)#
```

Related Commands

show ip access-list

8.5 remark

Command Purpose

Use this command to add remarks for the flow or ip access-list.

Command Syntax

remark *NAME_STRING*

no remark

Parameter	Parameter Description	Parameter Value
NAME_STRING	Remark string for the IP ACL	Begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, maximum length is 100 characters.

Command Mode

ACL Configuration

Default

None

Usage

None

Examples

This example shows how to add a remark to describe the IP ACL:

```
NPB(config-acl-acl1)# remark acl1ipdeny
```

This example shows how to remove the remark:

```
NPB(config-acl-acl1)# no remark
```

Related Commands

show ip access-list

8.6 no sequence-num

Command Purpose

Use this command to delete a filter from ip access-list.

Command Syntax

no sequence-num *ACL_SEQ_NUM*

Parameter	Parameter Description	Parameter Value
ACL_SEQ_NUM	Sequence-number with the valid range 1–65535.	1-65535

Command Mode

ACL Configuration

Default

None

Usage

None

Examples

This example shows how to delete a flow filter with sequence number 10 from ip acl acl1:

```
NPB(config-acl-acl1)# no sequence-num 10
```

Related Commands

show ip access-list

sequence-num

8.7 sequence-num

Command Purpose

Use this command to permit or deny packets matching the ip access-list filter.

Command Syntax

(sequence-num ACL_SEQ_NUM |) (permit | deny) (PROTOCOL_NUM | any | mpls (any | label-num (any | MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any | FLOW_LABEL_VALUE) |) (mpls-label2 (any | FLOW_LABEL_VALUE) |) (mpls-label3 (any | FLOW_LABEL_VALUE) |)) | pppoe ppp-type (ipv4 | ipv6) | tcp (src-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | dst-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | tcp-code (match-all | match-any) (ack | fin | psh | rst | syn | urg)

|) | udp (src-port (range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) | dst-port (range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any) |) | icmp | igmp) (src-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR) | src-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)) (dst-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR) | dst-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)) (flow-label (*FLOW_LABEL LABEL _WILD* | any) |) (dscp DSCP_VALUE | ip-precedence PRECEDENCE_VALUE |) (first-fragment | non-first-fragment | non-fragment | non-or-first-fragment | small-fragment | any-fragment |) (options |) (vlan (VLAN_ID VLAN_WILD | any) |) (inner-vlan (VLAN_ID VLAN_WILD | any) |) (cos COS_ID |) (inner-cos COS_ID |) (ether-type (ETHER_TYPE_VALUE ETHER_TYPE_WILD_VALUE | any) |) (src-mac (ACL_MAC_ADDR ACL_MAC_ADDR_WILD | any | host ACL_MAC_ADDR) |) (dest-mac (ACL_MAC_ADDR ACL_MAC_ADDR_WILD | any | host ACL_MAC_ADDR) |) ((ipv4-head | l4-head) UDF_VALUE UDF_VALUE_WILD UDF_OFFSET |)

Parameter	Parameter Description	Parameter Value
sequence-num ACL_SEQ_NUM	Specify a sequence number to create the acl rule.	The valid range for sequence number is 1- 65535. If the sequence number is not specified, system should automatically assign one number according to the base number and the step length. The base number is the maximum number in the flow (0 for empty flow), the step length is 10.
permit	Specify the action of the acl rule. Use the parameter “permit” to indicate packets match this rule is allowed to forward.	-
deny	Specify the action of the acl rule. Use the parameter “deny” to indicate packets match this rule is not allowed to forward.	-
PROTOCOL_NUM | any | tcp | udp | icmp | igmp | gre | nvgre	Specify the IP protocol number of the acl rule.	The valid range for IP protocol number is 0-255. Well known IP protocols can also be specified by name. e.g. IP protocol 1 = icmp, 2 = igmp, 6 = tcp, 17 = udp, 47 = gre/nvgre (gre protocol 0x0800 = gre, 0x6558 = nvgre). Parameter “any” indicates packets with any IP protocol can match this rule.
mpls (any | label-num (any | MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any|FLOW_LABEL_VALUE) |) (mpls-label2 (any|FLOW_LABEL_VALUE) |) (mpls-label3 (any|FLOW_LABEL_VALUE) |))	Specify the mpls label of the flow rule.	The mpls label number is 0-9.It can match 3 layers of MPLS label values at most.
pppoe ppp-type (ipv4 | ipv6)	Specify the pppoe ppp-type of the flow rule.	The ppp-type is ipv4 or ipv6.
src-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any)	Specify the layer 4 source port of the acl rule.	The valid range for L4 source port number is 0 – 65535. This filed is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than)

		3, gt (greater than) 4, range Parameter “any” indicates packets with any L4 port can match this rule.
dst-port (range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any)	Specify the layer 4 destination port of the acl rule.	The valid range for L4 destination port number is 0 – 65535. This filed is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Parameter “any” indicates packets with any L4 port can match this rule.
src-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)	Specify the source IPv4 address of the acl rule.	Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv4 address to specify an exactly address. Use the parameter “any” to indicate packets with any source IPv4 address value can match this rule.
dst-ip (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)	Specify the destination IPv4 address of the acl rule.	Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv4 address to specify an exactly address. Use the parameter “any” to indicate packets with any destination IPv4 address value can match this rule.
src-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)	Specify the source IPv6 address of the acl rule.	Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with any source IPv6 address value can match this rule.

dst-ipv6 (IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR)	Specify the destination IPv6 address of the acl rule.	Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter "host" and an IPv6 address to specify an exactly address. Use the parameter "any" to indicate packets with any destination IPv6 address value can match this rule.
flow-label (FLOW_LABEL LABEL_WILD | any)	Specify the IPv6 Flow label of the acl rule.	Valid range for flow label is 0-1048575. Valid range for flow-label wildcard bits is 0x0-0xFFFFF Flow label value and wildcard bits both have 20bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates ipv6 packets with any flow label value can match this rule.
dscp DSCP_VALUE	Specify the DSCP in IPv4 packets value of the acl rule. DSCP = Differentiated Services Code Point. Specify the DSCP in IPv4 packets value of the acl rule. DSCP = Differentiated Services Code Point.	Valid range of DSCP value is 0 – 63.
ip-precedence PRECEDENCE_VALUE	Specify the IP precedence in IPv4 packets of the acl rule. DSCP & ip precedence configurations are exclusive	Valid range of IP precedence value is 0 – 7.
first-fragment	Match packets with first fragment	-
non-first-fragment	Match packets with non first fragment	-
non-fragment	Match packets with non fragment	-
non-or-first-fragment	Match packets with non first fragment	-
small-fragment	Match packets with small fragment	-
any-fragment	Match packets with any fragment	-
options	Match packets with IP options	-
vlan (VLAN_ID VLAN_WILD | any)	Specify the outer vlan id of the acl rule.	The valid range for vlan id wildcard bits is 0x0-0xFFF. Vlan id and wildcard bits both have 12bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter "any" indicates packets

		with any outer vlan id can match this rule.
inner-vlan (VLAN_ID VLAN_WILD | any)	Specify the inner vlan id of the acl rule.	The valid range for vlan id is 0-4095. The valid range for vlan id wildcard bits is 0x0-0xFFF. Vlan id and wildcard bits both have 12bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any inner vlan id can match this rule.
cos COS_ID	Specify the outer CoS value of the acl rule. CoS = Class of Service. Specify the outer CoS value of the acl rule. CoS = Class of Service.	The valid range of Cos is 0 to 7.
inner-cos COS_ID	Specify the inner CoS value of the acl rule. CoS = Class of Service. Specify the inner CoS value of the acl rule. CoS = Class of Service.	The valid range of Cos is 0 to 7.
ether-type (ETHER_TYPE_VALUE ETHER_TYPE_WILD_VALUE | any)	Specify the ether-type of the acl rule.	The valid range for wildcard bits is 0x600-0xFFFF. Ether-type value and wildcard bits both have 16bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any ethertype value can match this rule.
src-mac (ACL_MAC_ADDR ACL_MAC_ADDR_WILD | any | host ACL_MAC_ADDR)	Specify the source mac address in HHHH.HHHH.HHHH format.	Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any source mac address value can match this rule.
dest-mac (ACL_MAC_ADDR ACL_MAC_ADDR_WILD | any| host ACL_MAC_ADDR)	Specify the destination mac address in HHHH.HHHH.HHHH format.	Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly

		mac address. Use the parameter “any” to indicate packets with any destination mac address value can match this rule.
(ipv4-head | l4-head) UDF_VALUE UDF_VALUE_WILD UDF_OFFSET	UDF = User Define Format. The parameter “ipv4-head” indicates the packet is parsed at the beginning with the IPv4 header. The parameter “l4-head” indicates the packet is parsed at the beginning with the layer4 header.	Udf value and wildcard bits both have 32 bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. The parameter “UDF_OFFSET” specifies the offset bits from the beginning. The valid range of the offset is 0 -60.

Command Mode

ACL Configuration

Default

None

Usage

Wildcard bits in this command are used as reversed. That means value and wildcard bits have same length, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

E.g.: ip address 10.10.10.0 wildcard 0.0.0.255 means 256 ip addresses from 10.10.10.0 to 10.10.10.255.

Layer 4 information （e.g. tcp/udp port）and fragment information are exclusive.

Examples

Create a rule with sequence number 10:

```
NPB(config)# ip access-list acl1
NPB(config-acl-acl1)# sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any
```

Related Commands

no sequence-num

show ip access-list

9 TAP Commands

9.1 tap-group

Command Purpose

Use this command to create a TAP group and enter the tap configuration mode.
Use the no form of this command to delete the TAP group.

Command Syntax

tap-group *TAPNAME* (*NUM* |)
no tap-group *TAPNAME*

Parameter	Parameter Description	Parameter Value
TAPNAME	Tap Group Name string	Begin with a-z/A-Z, valid characters are 0-9A-Za-z.-, maximum length is 20 characters.
NUM	Tap Group ID, range 1-10000	1-10000

Command Mode

Global Configuration

Default

None

Usage

This device supports at most 512 TAP groups.

Examples

The following example shows how to add an egress-interface agg1:

```
NPB(config)#                                    tap-group                                    tap1
NPB(config-tap-tap1)#
```

The following example shows how to delete a tap-group:

```
NPB(config)# no tap-group tap1
```

Related Commands

show tap-group

9.2 description

Command Purpose

Use this command to set the description of the TAP group.
Use the no form of this command to delete the description.

Command Syntax

description *LINE*
no description

Parameter	Parameter Description	Parameter Value
LINE	TAP group description string	Begin with a-z/A-Z, valid characters are 0-9A-Za-z.-, maximum length is 80 characters

Command Mode

tap-group Configuration

Default

None

Usage

None

Examples

The following example shows how to config description:

```
NPB(config)#                    tap-group                    test001
NPB(config-tap-test001)#        description                  test
NPB(config-tap-test001)#
```

Related Commands

tap-group

show tap-group

9.3 ingress

Command Purpose

Use this command to add a physical,link aggregation interface or port-groupto the ingress direction of the TAP group.
This command can specify Vlan id and edit actions to the packets.
Use the no form of this command to remove the interface.

Command Syntax

ingress *IF_NAME* (un-tag | un-tag-outer-vlan | un-tag-inner-vlan | mark-source *VLAN_ID* |) (truncation |) (edit-macda *MAC_ADDRESS* |) (edit-macsa *MAC_ADDRESS* |) (edit-ipsa *IP_ADDRESS* |) (edit-ipda *IP_ADDRESS* |) (edit-ipv6sa *IPv6_ADDRESS* |) (edit-ipv6da *IPv6_ADDRESS* |) (edit-vlan *VLAN_ID* |)
no ingress *IF_NAME*
ingress (*IF_NAME* | *PORTGROUP_NAME*) flow *FLOW_NAME* (un-tag | un-tag-outer-vlan | un-tag-inner-vlan | mark-source *VLAN_ID* |)
no ingress *IF_NAME* flow *FLOW_NAME*

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name. This command supports physical or link aggregation interfaces.	-
un-tag	Remove vlan tags of the packets.	-
un-tag-outer-vlan	Remove outer vlan tag of the packets.	-
un-tag-inner-vlan	Remove inner vlan tag of the packets.	-
mark-source VLAN_ID	Specify additional outer vlan id of the outgoing packets.	Specify additional outer vlan id of the outgoing packets. The valid range for vlan id is 1 – 4094.
truncation	To truncate the packet.	-
edit-macda MAC_ADDRESS	Specify the destination mac address of the outgoing packets.	Specify the destination mac address of the outgoing packets in HHHH.HHHH.HHHH format.
edit-macsa MAC_ADDRESS	Specify the source mac address of the outgoing packets.	Specify the source mac address of the outgoing packets in HHHH.HHHH.HHHH format.。
edit-ipsa IP_ADDRESS	Specify the source IP address of the outgoing packets.	Specify the source IP address of the outgoing packets in A.B.C.D format.。
edit-ipda IP_ADDRESS	Specify the destination IP address of the outgoing packets.	Specify the destination IP address of the outgoing packets in A.B.C.D format.。
edit-vlan VLAN_ID	Specify the vlan id of the outgoing packets.	The valid range for vlan id is 1 – 4094.
edit-ipv6sa IPv6_ADDRESS	Specify the source IPv6 address of the outgoing packets.	::- ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff。
edit-ipv6da IPv6_ADDRESS	Specify the destination IPv6 address of the outgoing packets.	::- ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff。

PORTGROUP_NAME	Specify the name of port-group.	The first character should be a-z or A-Z, character only can be 0-9A-Za-z.-_ and the max len is 31.
flow FLOW_NAME	Specify the name of flow to apply to tap group's ingress direction.	-

Command Mode

tap-group Configuration

Default

None

Usage

One interface without configuring a flow can only add to one TAP group.
Same interface with and without configuring a flow cannot exist in one TAP group.

Examples

The following example shows how to add an ingress-interface with mark-source 100:

```
NPB(config)#                                    tap-group                                   test001
NPB(config-tap-test001)#          ingress          eth-0-1          mark-source          100
NPB(config-tap-test001)#
```

The following example shows how to add an ingress-interface with un-tag:

```
NPB(config)#                                    tap-group                                   test001
NPB(config-tap-test001)#          ingress          eth-0-1                               un-tag
NPB(config-tap-test001)#
```

The following example shows how to add an ingress-interface with flow flow001:

```
NPB(config)#                                    tap-group                                   test001
NPB(config-tap-test001)#          ingress          eth-0-1          flow                 flow001
NPB(config-tap-test001)#
```

The following example shows how to add an ingress interface eth-0-1:

```
NPB(config)#                                    tap-group                                   tap1
NPB(config-tap-tap1)# ingress eth-0-1
```

The following example shows how to add an ingress interface agg1:

```
NPB(config)#                                    interface                                   eth-0-2
NPB(config-if-eth-0-2)#                           static-channel-group                      1
NPB(config-if-eth-0-2)#                                                                     exit
NPB(config)#                                    tap-group                                   tap1
NPB(config-tap-tap1)# ingress agg1
```

The following example shows how to add an ingress interface eth-0-1 and remark source vlan id as 300:

```
NPB(config)#                                    tap-group                                   tap1
NPB(config-tap-tap1)# ingress eth-0-1 mark-source 300
```

Related Commands

tap-groupegress

9.4 egress

Command Purpose

Command Syntax

egress *IF_NAME* (timestamp |)
no egress *IF_NAME*

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name. This command supports physical or link aggregation interfaces.	-
timestamp	Add timestamp for packets on egress interfaces.	-

Command Mode

tap-group Configuration

Default

None

Usage

None

Examples

The following example shows how to add an egress-interface eth-0-9:

```
NPB(config)# tap-group tap1
NPB(config-tap-tap1)# egress eth-0-9
```

The following example shows how to add an egress-interface agg1:

```
NPB(config)# interface eth-0-10
NPB(config-if-eth-0-10)# static-channel-group 1
NPB(config)# interface eth-0-11
NPB(config-if-eth-0-11)# static-channel-group 1
NPB(config)# tap-group tap1
NPB(config-tap-tap1)# egress agg1
```

Related Commands

tap-group

9.5 show tap-group

Command Purpose

This command displays the TAP group configurations.

Command Syntax

show tap-group (*TAPNAME* |)

Parameter	Parameter Description	Parameter Value
TAPNAME	Specify a TAP group name to display. If the parameter "TAPNAME" is not specified, the command indicates that all TAP groups on this device should be displayed.	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows the configuration of tap-group:

```
NPB# show tap-group

truncation : 144
timestamp-over-ether : 0000.0000.0000 0000.0000.0000 0x0000
TAP-group tap1
 ID: 1
 Ingress:
    eth-0-1 flow f1
 Egress:
    eth-0-9
TAP-group tap2
 ID: 2
 Ingress:
    eth-0-21
 Egress:
    eth-0-22
```

Related Commands

tap-groupingress

10 TIMESTAMP Commands

10.1 timestamp-over-ether

Command Purpose

Use this command to configure the NPB timestamp outer header information.
Use the no form of this command to remove the NPB timestamp configuration.

Command Syntax

timestamp-over-ether *MAC_ADDR_DA MAC_ADDR_SA ETHTYPE_ID*
no timestamp-over-ether

Parameter	Parameter Description	Parameter Value
MAC_ADDR_DA	Ethernet destination MAC address	MAC address in HHHH.HHHH.HHHH format, valid range is 0.0.0-FFFF.FFFF.FFFF
MAC_ADDR_SA	Ethernet source MAC address	MAC address in HHHH.HHHH.HHHH format, valid range is 0.0.0-FFFF.FFFF.FFFF
ETHTYPE_ID	Ethertype in hexadecimal	range is [0x0-0xffff]

Command Mode

Global Configuration

Default

None

Usage

NPB timestamp is global configuration. NPB timestamp MUST be configured before using the TAP groups.

Examples

The following example shows how to configure timestamp-over-ether:

```
NPB#                                    configure                                   terminal
NPB(config)# timestamp-over-ether 1.1.1 2.2.2 0xff12
```

The following example shows how add timestamp for packets going out from tap1/interface eth-0-10:

```
NPB(config)#                            tap-group                                   tap1
NPB(config-tap-tap1)#                   ingress                                     eth-0-1
NPB(config-tap-tap1)#           egress                  eth-0-10                    timestamp
NPB(config-tap-tap1)# exit
```

Related Commands

tap-group
egress

10.2 show timestamp sync

Command Purpose

Use this command configure to display timestamp sync information.

Command Syntax

show timestamp sync

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display timestamp information:

```
NPB#                            show                        timestamp               sync
```

```
Sync Type                    : Disabled
Sync Count                   : 0
Last Sync Time  : Tue Sep 12 07:57:08 2017
```

Related Commands

timestamp sync

10.3 timestamp sync

Command Purpose

Use this command configure to timestamp sync.

Use the no form of this command to restore the default value.

Command Syntax

timestamp sync (systime | none)

no timestamp sync

Parameter	Parameter Description	Parameter Value
systime	Use the system time as time source.	-
none	Use the chip time as time source.	-

Command Mode

Global Configuration

Default

The default value is “none”

Usage

None

Examples

The following example shows how to config timestamp sync:

```
NPB(config)# timestamp sync systime
```

Related Commands

show timestamp sync

11 TRUNCATION Commands

11.1 truncation

Command Purpose

Use this command to configure the truncation length information.
Use the no form of this command to restore the default value.

Command Syntax

truncation *TRUNCATION_LEN*
no truncation

Parameter	Parameter Description	Parameter Value
TRUNCATION_LEN	Truncation length in bytes.	Valid range is 64-144.

Command Mode

Global Configuration

Default

144

Usage

CRC should be re-calculating after packet is truncated. The truncation length include CRC field.

Examples

The following example shows how to set truncation length as 64:

```
NPB(config)# truncation 64
```

The following example shows how to use truncation in TAP group:

```
NPB(config)# tap-group tap1
NPB(config-tap-tap1)# ingress eth-0-1 truncation
NPB(config-tap-tap1)# egress eth-0-10
```

Related Commands

tap-groupingress

12 SSH Commands

12.1 ssh

Command Purpose

In privileged mode, use this command to log in remote ssh server.

Command Syntax

ssh -l NAME_STRING (-i RSAKEYNAME |) (-p L4_PORT_NUM |) (-v (1 | 2) |) (-c (3des | des | 3des-cbc | aes128-cbc | aes192-cbc | aes256-cbc) |) (-m (hmac-md5-128 | hmac-md5-96 | hmac-sha1-160 | hmac-sha1-96) |) (-o number-of-password-prompts SSHPINPROMPTS |) (mgmt-if |) (IP_ADDR | STRING)

Parameter	Parameter Description	Parameter Value
NAME_STRING	Login name	-
RSAKEYNAME	Specify key name	-
L4_PORT_NUM	Remote ssh server port	range is <0-65535>
SSHPINPROMPTS	Number of password prompts	range is <1-7>
IP_ADDR | STRING	Specify IP address of remote system /Specify hostname of remote system	-

Command Mode

Privileged EXEC

Default

Version default is 2

Usage

None

Examples

The following example shows how to establish connection by ssh:

```
NPB#                ssh                -l                aaa                1.1.1.1
aaa@1.1.1.1's                                                                  password:

NPB#
```

Related Commands

ip ssh server enable

12.2 ip ssh server enable

Command Purpose

In global mode, use this command to start ssh server.

Command Syntax

ip ssh server enable

Command Mode

Global Configuration

Default

Enabled

Usage

None

Examples

The following example enables the SSH server:

```
NPB(config)# ip ssh server enable
```

Related Commands

ip ssh server disable

12.3 ip ssh server disable

Command Purpose

In global mode, use this command to disable ssh server.

Command Syntax

ip ssh server disable

Command Mode

Global Configuration

Default

Enabled

Usage

None

Examples

The following example disable the SSH server:

```
NPB(config)# ip ssh server disable
```

Related Commands

ip ssh server enable

12.4 ip ssh server version

Command Purpose

In global configuration mode, use this command to configure Secure Shell (SSH) version on your NPB. And use the no form of this command to restore the default value.

Command Syntax

ip ssh server version (v1 | v2 | all)

no ip ssh server version

Parameter	Parameter Description	Parameter Value
v1	Support SSH version 1	-
v2	Support SSH version 2	-
all	Support SSH version 1 and 2	-

Command Mode

Global Configuration

Default

V2

Usage

SSH server and client will negotiate about the version when connecting. Server and client should select a higher version both supported.

Examples

The following example shows how to configure support SSH Version 1:

```
NPB(config)# ip ssh server version v1
```

The following example shows how to restore the default configuration:

```
NPB(config)# no ip ssh server version
```

Related Commands

show ip ssh server status

12.5 ip ssh server authentication-retries

Command Purpose

Use this command to set retry times when log in remote ssh server failed. Use the command in no format, could rest retry times to default value.

Command Syntax

ip ssh server authentication-retries *SSHAUTHRETRIES*

no ip ssh server authentication-retries

Parameter	Parameter Description	Parameter Value
SSHAUTHRETRIES	Retry times	Range is <1-6>

Command Mode
Global Configuration

Default
6

Usage
None

Examples
The following examples configures SSH authentication retry times on your NPB:
```
NPB(config)# ip ssh server authentication-retries 3
```
The following examples restore SSH authentication retry times to the default value:
```
NPB(config)# no ip ssh server authentication-retries
```

Related Commands
show ip ssh server status

12.6 ip ssh server authentication-timeout

Command Purpose
In global configuration mode, use this command to configure Secure Shell (SSH) authentication timeout on your NPB.
Use the no form of this command to restore the default value of Secure Shell (SSH) authentication timeout on your NPB

Command Syntax
ip ssh server authentication-timeout *SSHAUTHTIMEOUT*
no ip ssh server authentication-timeout

Parameter	Parameter Description	Parameter Value
SSHAUTHTIMEOUT	Timeout seconds	Range is <1-120>, unit is seconds

Command Mode
Global Configuration

Default
120

Usage
None

Examples
The following examples configures SSH authentication timeout on your NPB:
```
NPB(config)# ip ssh server authentication-timeout 100
```
The following examples restore SSH authentication timeout to default value:
```
NPB(config)# no ip ssh server authentication-timeout
```

Related Commands
show ip ssh server status

12.7 ip ssh server authentication-type

Command Purpose
In global configuration mode, use this command to configure Secure Shell (SSH) authentication type.
Use the no form of this command to restore the default value of Secure Shell (SSH) authentication type.

Command Syntax
ip ssh server authentication-type (all | (password | public-key | rsa))
no ip ssh server authentication-type

Parameter	Parameter Description	Parameter Value
all	Enable all authentication type	-
password	Enable password	-
public-key	Enable public key	-
rsa	Enable rsa	-

Command Mode
Global Configuration

Default
Public-key and password

Usage
When logging in using SSH, the authentication mode will be negotiated at the beginning of establishing connection reply.

Examples
The following example configures SSH authentication type to password:
```
NPB(config)# ip ssh server authentication-type password
```
The following example restore SSH authentication type to default value:
```
NPB(config)# no ip ssh server authentication-type
```

Related Commands
show ip ssh server status

12.8 ip ssh server rekey-interval

Command Purpose
In global configuration mode, use this command to configure Secure Shell (SSH) rekey interval.
Use the no form of this command to restore the default value of Secure Shell (SSH) rekey interval.

Command Syntax
ip ssh server rekey-interval *SSHREKEYINTVL*no ip ssh server rekey-interval

Parameter	Parameter Description	Parameter Value
SSHREKEYINTVL	Rekey interval in minutes	Range is <1-1440>

Command Mode
Global Configuration

Default
60

Usage
None

Examples
The following example configures SSH rekey interval to 30:
```
NPB(config)# ip ssh server rekey-interval 30
```
The following example restore SSH rekey interval to default value:
```
NPB(config)# no ip ssh server rekey-interval
```

Related Commands
show ip ssh server status

12.9 ip ssh server host-key

Command Purpose
In global configuration mode, use this command to configure Secure Shell (SSH) host-key.
Use the no form of this command to restore the default value of Secure Shell (SSH) host-key.

Command Syntax
ip ssh server host-key rsa key *RSAKEYNAME*
no ip ssh server host-key

Parameter	Parameter Description	Parameter Value
RSAKEYNAME	Key Name	=Y27

Command Mode
Global Configuration

Default
None

Usage
Host-key is used to generate session when establish connection.

Examples
The following example shows how to configure SSH host key:
```
NPB(config)# ip ssh server host-key rsa key KEY1
```
The following example shows how to remove SSH host key:

```
NPB(config)# no ip ssh server host-key
```

Related Commands

show ip ssh server status

12.10 ip ssh server port

Command Purpose

Use this command to configure ssh service port.

Command Syntax

ip ssh server port *SERVICE_PORT*

no ip ssh server port

Parameter	Parameter Description	Parameter Value
SERVICE_PORT	port number	Range is 1025-65535

Command Mode

Global Configuration

Default

22

Usage

When change ssh service port, all users must be forced to disconnect.

Examples

The following example configures port number:

```
NPB# configure terminal
NPB(config)# ip ssh server port 2000
```

The following example recovers ssh port to default port:

```
NPB# configure terminal
NPB(config)# no ip ssh server port
```

Related Commands

None

12.11 show ip ssh server status

Command Purpose

In privileged mode, use this command to show information of SSH.

Command Syntax

show ip ssh server status

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows information of ssh server:

```
NPB# show ip ssh server status

SSH server enabled
Version: v2
Authentication timeout: 33 second(s)
Authentication retries: 6 time(s)
Server key lifetime: 60 minute(s)
Authentication type: password, public-key
```

Related Commands

ssh

13 LACP Commands

13.1 port-channel load-balance-mode

Command Purpose

Use this command to set port-channel load balance mode from static to round-robin. Use the no form of this command to set port-channel load balance mode to default static mode.

Command Syntax

port-channel *AGG_GID* load-balance-mode round-robin
no port-channel *AGG_GID* load-balance-mode

Parameter	Parameter Description	Parameter Value
AGG_GID	Channel group ID	Range is <1-55>

Command Mode

Global Configuration

Default

Disabled

Usage

None

Examples

The following example shows how to set port-channel load balance mode to round-robin:

```
NPB(config)# port-channel 9 load-balance-mode round-robin
```

The following example shows how to set port-channel load balance mode to the default:

```
NPB(config)# no port-channel 9 load-balance-mode
```

Related Commands

None

13.2 port-channel load-balance hash-arithmetic

Command Purpose

Use this command to configure the load balance hash algorithm for the Link Aggregation Control Protocol (LACP).
Use the no form of this command to restore the default value.

Command Syntax

port-channel load-balance hash-arithmetic (crc | xor)

Parameter	Parameter Description	Parameter Value
crc	Use algorithm of crc to compute hash value	-
xor	Use algorithm of exclusive or to compute hash value	-

Command Mode

Global Configuration

Default

XOR

Usage

None

Examples

The following example shows how to configure the load balance hash algorithm for Link Aggregation Control Protocol (LACP) to crc:

```
NPB(config)# port-channel load-balance hash-arithmetic crc
```

Related Commands

None

13.3 port-channel load-balance set

Command Purpose

Use this command to configure the load balance type for the Link Aggregation Control Protocol (LACP).
Use the no form of this command to delete a load balance type or restore to the default value.

Command Syntax

port-channel load-balance set (src-mac | dst-mac | src-ip | dst-ip | ip-protocol | src-port-l4 | dst-port-l4 | inner-dst-mac | inner-src-mac | inner-src-ip | inner-dst-ip | inner-src-port-l4 | inner-dst-port-l4 | vxlan-vni | gre-key | nvgre-vsid | nvgre-flow-id)
no port-channel load-balance set (src-mac | dst-mac | src-ip | dst-ip | ip-protocol | src-port-l4 | dst-port-l4 | inner-dst-mac | inner-src-mac | inner-src-ip | inner-dst-ip | | inner-src-port-l4 | inner-dst-port-l4 | vxlan-vni | gre-key | nvgre-vsid | nvgre-flow-id)
no port-channel load-balance

Parameter	Parameter Description	Parameter Value
src-mac	Load balance by source MAC address	-
dst-mac	Load balance by destination MAC address	-
src-ip	Load balance by source IP address	-
dst-ip	Load balance by destination IP address	-
ip-protocol	Load balance by ip-protocol	-
src-port-l4	Load balance by source port	-
dst-port-l4	Load balance by destination port	-
inner-src-mac	Inner Source MAC address based load balancing	-
inner-dst-mac	Inner Destination MAC address based load balancing	-
inner-src-ip	Inner Source IP address based load balancing	-
inner-dst-ip	Inner Destination IP address based load balancing	-
inner-src-port-l4	Inner Source Port based load balancing	-
inner-dst-port-l4	Inner Destination Port based load balancing	-
vxlan-vni	Vni of vxlan	-
gre-key	Key of GRE	-
nvgre-vsid	Vsid of nvgre	-
nvgre-flow-id	Flow ID of GRE	-

Command Mode

Global Configuration

Default

Src-ip, dst-ip, src-port-l4, dst-port-l4

Usage

The no form of this command with the hash field means delete the load balance type.
The no form of this command without the hash field means restore the default value.

Examples

The following example shows how to configure the load balance type for Link Aggregation Control Protocol (LACP):

```
NPB(config)# port-channel load-balance set src-mac
NPB(config)# port-channel load-balance set dst-mac
```

The following example shows how to remove the configuration of load balance type for Link Aggregation Control Protocol (LACP):

```
NPB(config)# no port-channel load-balance set src-mac
```

Related Commands
show port-channel load-balance

13.4 port-channel load-balance tunnel-hash-mode

Command Purpose
Use this command to configure the load balance tunnel hash algorithm for the Link Aggregation Control Protocol (LACP).

Command Syntax
port-channel load-balance tunnel-hash-mode (both | outer | inner)

Parameter	Parameter Description	Parameter Value
both	Use both field for tunnel packet load balance	-
outer	Use outer field for tunnel packet load balance	-
inner	Use inner field for tunnel packet load balance	-

Command Mode
Global Configuration

Default
Both

Usage
None

Examples
The following example shows how to set inner-filed hash load balance:
NPB(config)# port-channel load-balance tunnel-hash-mode inner

Related Commands
port-channel load-balance set

13.5 port-channel load-balance

Command Purpose
Use this command to set load balance type for the Link Aggregation Control Protocol (LACP).
Use the no form of this command to set the load balance type for the Link Aggregation Control Protocol (LACP) return to the default setting.

Command Syntax
port-channel load-balance (src-mac | dst-mac | src-ip | dst-ip | src-port | dst-port | src-dst-ip | src-dst-mac | src-dst-port | src-dst-ip- src-dst-port)

no port-channel load-balance

Parameter	Parameter Description	Parameter Value
src-mac	Load balance by source MAC address	-
dst-mac	Load balance by destination MAC address	-
src-ip	Load balance by source IP address	-
dst-ip	Load balance by destination IP address	-
src-port	Load balance by source port	-
dst-port	Load balance by destination port	-
src-dst-mac	Load balance by MAC address.	-
src-dst-ip	Load balance by IP address	-
src-dst-port	Load balance by port	-

src-dst-ip- src-dst-port	Load balance by ip and port	-

Command Mode
Global Configuration

Default
Src-ip, dst-ip, src-port, dst-port

Usage
None

Examples
The following example shows how to set port-channel load-balance to src-mac:

```
NPB(config)# port-channel load-balance src-mac
```

Related Commands
show port-channel load-balance

13.6 show channel-group

Command Purpose
Use show channel-group summary command to display a summary of all of the channel groups, or a specified channel group. Use show channel-group detail command to display detailed information of all of the channel groups, or a specified channel group. Use show channel-group port command to display port information of all of the channel groups, or a specified channel group.

Command Syntax
show channel-group (*AGG_GID* |) (summary | detail | port)

Parameter	Parameter Description	Parameter Value
AGG_GID	Channel group ID	Range is <1-55>

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to display detailed information of the channel group 10:

```
NPB# show channel-group 10 detail

Group: 10
----------------------------
 Mode : NPB
 Ports : 2 Maxports : 16
 Bundle Ports : 0
 Protocol : static

 Port : eth-0-3
 ----------------------------
  State : Down Out-Bundle
  Channel group : 10
  Protocol : static
  Port index : 3

 Port : eth-0-4
 ----------------------------
  State : Down Out-Bundle
  Channel group : 10
  Protocol : static
  Port index : 4
```

The following example shows how to display information of all channel groups:

```
NPB# show channel-group summary
```

```
port-channel load-balance hash-arithmetic: xor
port-channel load-balance tunnel-hash-mode: both
Port-channel load-balance hash-field-select:
  src-ip dst-ip src-port-l4 dst-port-l4
Flags: s - suspend T - standby
     w - wait B - in Bundle
     R - Layer3 S - Layer2
     D - down/admin down U - in use
Mode: SLB - static load balance
    DLB - dynamic load balance
    RR - round robin load balance
Aggregator Mode Protocol Ports
----------+----+--------+--------------------------------------------------
agg5(SD) SLB Static eth-0-5(D)
agg10(SD) SLB Static eth-0-3(D) eth-0-4(D)
This example shows how to display summary information of the channel group 10:
NPB# show channel-group 10 summary
port-channel load-balance hash-arithmetic: xor
port-channel load-balance tunnel-hash-mode: both
Port-channel load-balance hash-field-select:
  src-ip dst-ip src-port-l4 dst-port-l4
Flags: s - suspend T - standby
     w - wait B - in Bundle
     R - Layer3 S - Layer2
     D - down/admin down U - in use
Mode: SLB - static load balance
    DLB - dynamic load balance
    RR - round robin load balance
Aggregator Mode Protocol Ports
----------+----+--------+--------------------------------------------------
agg10(SD) SLB Static eth-0-3(D) eth-0-4(D)
The following example shows how to display information of the channel group 10:
NPB# show channel-group 10 summary

port-channel load-balance hash-arithmetic: xor
port-channel load-balance tunnel-hash-mode: both
Port-channel load-balance hash-field-select:
  src-ip dst-ip src-port-l4 dst-port-l4
Flags: s - suspend T - standby
     w - wait B - in Bundle
     R - Layer3 S - Layer2
     D - down/admin down U - in use
Mode: SLB - static load balance
    DLB - dynamic load balance
    RR - round robin load balance
Aggregator Mode Protocol Ports
----------+----+--------+--------------------------------------------------
agg10(SD) SLB Static eth-0-3(D) eth-0-4(D)
```

Related Commands

static-channel-group

13.7 show channel-group interface

Command Purpose

Use this command to display link aggregation information for the port.

Command Syntax

show channel-group interface *IF_NAME*

Parameter	Parameter Description	Parameter Value
IF_NAME	Specify the interface name to	-

	show	

Command Mode
Privileged EXEC
Default
None
Usage
None
Examples
The following example shows how to display link aggregation information for the specified port:

```
NPB# show channel-group interface eth-0-3

Port : eth-0-3
----------------------------
 State : Down Out-Bundle
 Channel group : 10
 Protocol : static
 Port index : 3
```

Related Commands
static-channel-group

13.8 show port-channel load-balance

Command Purpose
Use this command to show the load balance type for the Link Aggregation Control Protocol (LACP).
Command Syntax
show port-channel load-balance
Command Mode
Privileged EXEC
Default
None
Usage
None
Examples
The following example shows how to show the load balance type for the Link Aggregation:

```
NPB# show port-channel load-balance

Port-channel load-balance hash fields:
--------------------------------------
src-ip
dst-ip
src-port-l4
dst-port-l4
```

Related Commands
port-channel load-balance set

14 NTP Commands

14.1 ntp minimum-distance

Command Purpose

In global configuration mode, use this command to configure the minimum distance between the NPB and the NTP server.
Use the no form of this command to restore default ntp minimum distance configures.

Command Syntax

ntp minimum-distance *NTP_MIN_DISP*

no ntp minimum-distance

Parameter	Parameter Description	Parameter Value
NTP_MIN_DISP	Distance value time interval in milliseconds	Range is <1-1000>

Command Mode

Global Configuration

Default

1ms

Usage

None

Examples

The following example shows how to configure minimum distance to 1000ms:

```
NPB(config)# ntp minimum-distance 1000
```

The following example shows how to configure minimum distance to default:

```
NPB(config)# no ntp minimum-distance
```

Related Commands

show ntp status

14.2 ntp server

Command Purpose

Use this command to allow the software clock to be synchronized by a Network Time Protocol (NTP) time server.
Use the no form of this command to delete the NTP server

Command Syntax

ntp server mgmt-if *IP_ADDR* (key *NTP_KEYID* |) (version *NTP_VERSION* |) (prefer |)
no ntp server *IP_ADDR*

Parameter	Parameter Description	Parameter Value
IP_ADDR	IP address of the time server or peer	-
NTP_KEYID	Authentication key to use when sending packets to this peer	Range is <1-64000>
NTP_VERSION	Defines the Network Time Protocol (NTP) version number	Range is <1-3>
prefer	Makes this peer the preferred peer that provides synchronization	-

Command Mode

Global Configuration

Default

Not synchronized with any NTP server

Usage

None

Examples

The following example shows how to configure ntp server ip as 172.16.22.44, the version of NTP as 2:

```
NPB(config)# ntp server mgmt-if 172.16.22.44 version 2
```

The following example shows how to remove ntp server:

```
NPB(config)# no ntp server 172.16.22.44
```

Related Commands

show ntp status

14.3 ntp authentication

Command Purpose

To enable NTP authentication, use the ntp authentication enable command. To disable the NTP authentication, use the ntp authentication disable command.

Command Syntax

ntp authentication (enable | disable)

Command Mode

Global Configuration

Default

Disabled

Usage

When NTP authentication is enabled, the NPB will synchronize the time with NTP servers with trusted key only.
For more information about trusted key, please see the "ntp trustedkey" command.

Examples

The following example shows how to enables NTP authentication:

```
NPB(config)# ntp authentication enable
```

Related Commands

show ntp

14.4 ntp key

Command Purpose

In global mode, use this command to create a value for a NTP key. And remove the value of the NTP key by the no form of the command

Command Syntax

ntp key *NTP_KEYID KEY_STRING*
no ntp key *NTP_KEYID*

Parameter	Parameter Description	Parameter Value
NTP_KEYID	Authentication key ID	Range is <1-64000>
KEY_STRING	The value of the key	-

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example shows how to create a ntp key:

```
NPB(config)# ntp key 123 key123
```

The following example shows how to remove a ntp key:

```
NPB(config)# no ntp key 123
```

Related Commands

show ntp key

14.5 ntp trustedkey

Command Purpose

Use this command to authenticate the identity of a system to which Network Time Protocol (NTP) will synchronize.
Use the no form of this command to disable authentication of the identity of the system.

Command Syntax

ntp trustedkey *NTP_KEYID*
no ntp trustedkey *NTP_KEYID*

Parameter	Parameter Description	Parameter Value
NTP_KEYID	Authentication key to use when sending packets to this peer	Range is <1-64000>

Command Mode

Global Configuration

Default

None

Usage

If authentication is enabled, use this command to define one or more key numbers (corresponding to the keys defined with the ntp key command) that a peer NTP system must provide in its NTP packets, in order for this system to synchronize to it. This function provides protection against accidentally synchronizing the system to a system that is not trusted, because the other system must know the correct authentication key.

Examples

The following example shows how to configure the system to synchronize only to systems providing authentication key 123:

```
NPB(config)# ntp trustedkey 123
```

The following example shows how to disable authentication of the identity of the system:

```
NPB(config)# no ntp trustedkey 123
```

Related Commands

ntp key

14.6 show ntp

Command Purpose

In privileged mode, use this command to display NTP configuration.

Command Syntax

show ntp

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the NTP configurations :

```
NPB#                                    show                                    ntp

Unicast                         peer                            or                      server:
1.1.1.1                                                                                 server
10.1.1.23           key         43          version     2           prefer          server
10.10.25.8                                                                              server
172.16.22.44                    version                 2                           server
192.16.22.44                    version                 2                           server
Authentication:                                                                         enabled
Local reference clock:
```

Related Commands

ntp server

14.7 show ntp status

Command Purpose

In privileged mode, use this command to display current NTP status.

Command Syntax

show ntp status

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display ntp status:

```
NPB# show ntp status

system peer : 10.10.25.8
system peer mode : client
leap indicator : 00
stratum : 5
precision : -19
root distance : 0.30511 s
minimum distance : 0.00099 s
selection threshold : 1.50000 s
root dispersion : 0.28767 s
reference ID : (10.10.25.8|)
reference time : dd6e331f.6a9c7b92 Thu, Sep 21 2017 20:46:23.416
system flags : auth monitor ntp kernel stats
jitter : 0.000000 s
stability : 18.062 ppm
broadcastdelay : 3.000000 s
authdelay : 0.000000 s
```

Related Commands

ntp minimum-distance

14.8 show ntp statistics

Command Purpose

In privileged mode, use this command to display ntp statistics.

Command Syntax

show ntp statistics

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display ntp statistics:

```
NPB# show ntp statistics

time since reset :18748
receive buffers :10
free receive buffers :9
used receive buffers :0
low water refills :1
dropped packets :0
ignored packets :0
received packets :333
```

```
packets sent :545
packets not sent :0
interrupts handled :19081
received by int :333
```

Related Commands

ntp server

clear ntp statistics

14.9 show ntp associations

Command Purpose

In privileged mode, use this command to display neighbor state of NTP.

Command Syntax

show ntp associations

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows the status of NTP associations:

```
NPB# show ntp associations

* synced, + symmetric active mode, - symmetric passive mode,
= client mode, ^ broadcast mode, ~ broadcast client mode
   remote local st poll reach delay offset disp
==============================================================================
=172.16.22.44 169.254.2.1 16 1024 0 0.00000 0.000000 3.99217
=10.1.1.23 169.254.2.1 16 1024 0 0.00000 0.000000 3.99217
=192.16.22.44 169.254.2.1 16 1024 0 0.00000 0.000000 3.99217
*10.10.25.8 169.254.2.1 4 128 377 0.00031 0.067999 0.09810
=1.1.1.1 169.254.2.1 16 1024 0 0.00000 0.000000 3.99217
```

Related Commands

ntp server

14.10 show ntp key

Command Purpose

In privileged mode, use this command to display NTP key.

Command Syntax

show ntp key

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows the keys of NTP:

```
NPB# show ntp key

Current NTP key configuration:
-+-----+---------+----------------------------------------
   43 key43
   123 key123
```

Related Commands

ntp key

14.11 clear ntp statistics

Command Purpose

In privileged mode, use this command to clear NTP statistics.

Command Syntax

clear ntp statistics

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to clear ntp statistics:

```
NPB# clear ntp statistics
```

Related Commands

show ntp statistics

15 NETWORK DIAGNOSIS Commands

15.1 ping

Command Purpose

Use this command to check whether a specific IPv4 address is available through management interface.

Command Syntax

ping mgmt-if (-b |) *WORD*

Parameter	Parameter Description	Parameter Value
mgmt-if	Send packet from management interface	-
-b	To check a broadcast address	-
WORD	Ping destination address	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to check whether 10.10.38.160 is available:

```
NPB#                                ping                                mgmt-if                                10.10.38.160

PING          10.10.38.160          (10.10.38.160)          56(84)          bytes          of          data.
64          bytes          from          10.10.38.160:          icmp_seq=1          ttl=64          time=0.513          ms
64          bytes          from          10.10.38.160:          icmp_seq=2          ttl=64          time=0.229          ms
64          bytes          from          10.10.38.160:          icmp_seq=3          ttl=64          time=0.261          ms
64          bytes          from          10.10.38.160:          icmp_seq=4          ttl=64          time=0.265          ms
64          bytes          from          10.10.38.160:          icmp_seq=5          ttl=64          time=0.387          ms

---                          10.10.38.160                          ping                          statistics                          ---
5          packets          transmitted,          5          received,          0%          packet          loss,          time          3999ms
rtt min/avg/max/mdev = 0.229/0.331/0.513/0.105 ms
```

Related Commands

traceroute

15.2 traceroute

Command Purpose

Use this command to show the path from the current device to the destination device.

Command Syntax

traceroute mgmt-if *WORD*

Parameter	Parameter Description	Parameter Value
mgmt-if	Send packet from management interface	-
WORD	Traceroute destination address	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to show the path from current device to 10.108.1.29:

```
NPB# traceroute mgmt-if 10.108.1.29

traceroute to 10.108.1.29 (10.108.1.29), 30 hops max, 38 byte packets
 1  10.108.1.27 (10.108.1.27)  2998.076 ms !H  3000.361 ms !H  3007.748 ms !H
```

Related Commands

ping

16 SYSLOG Commands

16.1 logging sync

Command Purpose

In privileged mode, use this command to write the log in the memory buffer to the syslog file in flash.

Command Syntax

logging sync

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following shows how to enable logging sync function:

```
NPB# logging sync
```

Related Commands

show logging buffer

16.2 logging buffer

Command Purpose

In global configuration mode, the command is used to set the number of logs saved by the system temporary buffer, and the default value is restored in the form of no of the command.

Command Syntax

logging buffer *CFGLOGLINES*

no logging buffer

Parameter	Parameter Description	Parameter Value
CFGLOGLINES	Log quantity	Range is <10-1000>

Command Mode

Global Configuration

Default

500

Usage

None

Examples

The following shows how to set logging buffer line number to 10:

```
NPB(config)# logging buffer 10
```

The following shows how to set logging buffer line number to default value:

```
NPB(config)# no logging buffer
```

Related Commands

show logging buffer

16.3 logging file

Command Purpose

In global configuration mode, use this command to set whether to write logs into log files.

Command Syntax

logging file (enable | disable)

Parameter	Parameter Description	Parameter Value
enable	Write log information into log	-

	files	
disable	Cancel writing log information to log file	-

Command Mode
Global Configuration

Default
Enabled

Usage
Once enabled, the log writes the currently generated log to the flash:/syslogfile file every 10 minutes.

Examples
The following example shows how to enable logging file function:
```
NPB(config)# logging file enable
```

Related Commands
show logging

16.4 logging level file

Command Purpose
In global configuration mode, using this command to set the level of log information, logs above or equal to this level will be counted into log files. And
use the no form of this command to restore the default value.

Command Syntax
logging level file (*LOGSEVERITY* | emergency | alert | critical | error | warning | notice | information | debug)
no logging level file

Parameter	Parameter Description	Parameter Value
0 | emergency	System is unusable	-
1 | alert	Immediate action needed	-
2 | critical	Critical conditions	-
3 | error	Error conditions	-
4 | warning	Warning conditions	-
5 | notice	Normal but significant conditions	-
6 | information	Informational messages	-
7 | debug	Debugging messages	-
LOGSEVERITY	Severity level	Range is <0-7>

Command Mode
Global Configuration

Default
Warning

Usage
Use this command to set the level of log information. Log information above or equal to this level will be logged to the log file, while log information below this level will not be logged to the file. If debug is specified, all log messages will be logged to the log file.

Examples
The following example shows how to configure the log message level to error:
```
NPB(config)# logging level file error
```
The following example shows how to restore the default value of log message level:
```
NPB(config)# no logging level file
```

Related Commands
logging level module

16.5 logging level module

Command Purpose

In global configuration mode, use this command to set the level of log information sent to the terminal and entered into the buffer. Logs higher than or equal to this level will be displayed on the terminal. And use the no form of this command to restore the default value.

Command Syntax

logging level module (*LOGSEVERITY* | emergency | alert | critical | error | warning | notice | information | debug)
no logging level module

Parameter	Parameter Description	Parameter Value
0 | emergency	System is unusable	-
1 | alert	Immediate action needed	-
2 | critical	Critical conditions	-
3 | error	Error conditions	-
4 | warning	Warning conditions	-
5 | notice	Normal but significant conditions	-
6 | information	Informational messages	-
7 | debug	Debugging messages	-
LOGSEVERITY	Severity level.	Range is <0-7>

Command Mode

Global Configuration

Default

Debug

Usage

With this, the command sets the level of log information sent to the terminal and recorded to the buffer. Log messages above or equal to this level will be displayed to the terminal and written to the log buffer, while those below this level will not be displayed at the terminal, nor will they be written to the log buffer.

Examples

The following example shows how to set logging level module to error:

```
NPB(config)# logging level module error
```

The following example shows how to restore the default value of logging level module:

```
NPB(config)# no logging level module
```

Related Commands

logging level file

16.6 logging timestamp

Command Purpose

In global configuration mode, the command is used to set the timestamp format of log information. And use the no form of this command to restore the default value.

Command Syntax

logging timestamp (date | bsd | iso | rfc3164 | rfc3339 | none)
no logging timestamp

Parameter	Parameter Description	Parameter Value
date	The time format displayed when using the date command	-
bsd	BSD style (RFC 3164)	-
iso	ISO style (RFC 3339)	-
rfc3164	RFC 3164 style (bsd)	-
rfc3339	RFC 3339 style (iso)	-
none	No timestamp	-

Command Mode
Global Configuration

Default
BSD

Usage
None

Examples
The following example shows how to set the log message timestamp format to RFC3164:
```
NPB(config)# logging timestamp rfc3164
```
The following example shows how to recovery log message timestamp format to default:
```
NPB(config)# no logging timestamp
```

Related Commands
show logging

16.7 logging server

Command Purpose
In global configuration mode, use this command to set whether to use a remote log server.

Command Syntax
logging server (enable | disable)

Parameter	Parameter Description	Parameter Value
enable	Enable logging server	-
disable	Disable logging server	-

Command Mode
Global Configuration

Default
Disabled

Usage
None

Examples
The following example shows how to enable log server:
```
NPB(config)# logging server enable
```

Related Commands
show logging

16.8 logging server severity

Command Purpose
In global configuration mode, this command is used to set the log level sent to the remote log server. Logs above or equal to this level will be sent to the log server. And use the no form of this command to restore the default value.

Command Syntax
logging server severity (*LOGSEVERITY* | emergency | alert | critical | error | warning | notice | information | debug)
no logging server severity

Parameter	Parameter Description	Parameter Value
0 | emergency	System is unusable	-
1 | alert	Immediate action needed	-
2 | critical	Critical conditions	-
3 | error	Error conditions	-
4 | warning	Warning conditions	-
5 | notice	Normal but significant conditions	-
6 | information	Informational messages	-
7 | debug	Debugging messages	-

LOGSEVERITY	Severity level.	Range is <0-7>

Command Mode
Global Configuration

Default
Warning

Usage
This command is used to set the level of log information sent to the remote log server. Logs higher than or equal to this level will be sent to the log server. If the threshold value is debug, all log messages will be sent to the log server.

Examples
The following example shows how to set the level of log messages sent to remote log servers to be error, and information above or equal to the level of error will be sent to remote servers:
```
NPB(config)# logging server severity error
```
The following example shows how to recovery the level of log messages sent to remote log servers by default:
```
NPB(config)# no logging server severity
```

Related Commands
show logging

16.9 logging server facility

Command Purpose
In global configuration mode, use this command to configure the log daemon on the server.
And use the no form of this command to restore the default value.

Command Syntax
logging server facility (*LOGFAC* | auth | authpriv | cron | daemon | ftp | kern | local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7 | lpr | mail | news | syslog | user | uucp)
no logging server facility

Parameter	Parameter Description	Parameter Value
LOGFAC	Log facility-type	Range is <0-11> and <16-23>
4|auth	Authorization system	-
10|authpriv	Authorization private system	-
9|cron	Cron facility	-
3|daemon	System daemon	-
11|ftp	FTP system	-
0|kern	Kernel	-
local0–7	Reserved for locally defined messages	-
6|lpr	Line printer system	-
2|mail	Mail system	-
7|news	USENET news	-
5|syslog	System log	-
1|user	User	-
8|uucp	UNIX-to-UNIX	-

Command Mode
Global Configuration

Default
Local4

Usage
None

Examples
The following example shows how to set logging server facility to local3:
```
NPB(config)# logging server facility local3
```
The following example shows how to set logging server facility to default:

```
NPB(config)# no logging server facility
```

Related Commands

show logging

16.10 logging server address

Command Purpose

In the global configuration mode, use this command to set the IP address of the log server. The NPB can send the log information to this server. And use the no form of this command to delete the address.

Command Syntax

logging server address mgmt-if *IP_ADDR*

no logging server address mgmt-if *IP_ADDR*

Parameter	Parameter Description	Parameter Value
IP_ADDR	Remote server IP address	-

Command Mode

Global Configuration

Default

None

Usage

In order for the NPB to send the system log information to the log server correctly, make sure that the server is in its normal functional state.

Examples

The following example shows how to set the IP address of log server to 10.10.38.236:

```
NPB(config)# logging server address mgmt-if 10.10.38.236
```

The following example shows how to delete log server:

```
NPB(config)# no logging server address mgmt-if 10.10.38.236
```

Related Commands

logging server

16.11 logging merge

Command Purpose

When this function is enabled, the NPB merges the same logs that appear in a specified period of time into one. During this period, the NPB places the received logs in a temporary buffer of a specified size in the background. The size of this period can be specified by using the timeout parameter, and the size of the backstage temporary buffer can be specified by using fifo-size parameter.

Command Syntax

logging merge (enable | disable | timeout *MERGETIMEOUT* | fifo-size *MERGEFSIZE*)

no logging merge (timeout | fifo-size)

Parameter	Parameter Description	Parameter Value
enable	Enable logging merge	-
disable	Disable logging merge	-
MERGEFSIZE	Set the size of the background log merge buffer in terms of entries, default 1024 entries	Range is <100-10240>
MERGETIMEOUT	For a specified period of time, the same logs that appear during that period are merged into one	Range is <1-300>, uint is seconds

Command Mode

Global Configuration

Default

Logging mergence is enabled. Timeout is 10.Fifo-size is 1024.

Usage

The logging merge command merges all the same logs into one during a specified time range. During this time, the NPB buffered these same logs. You can use the timeout keyword to set the time range, and use the fifo-size to set the buffer size.

Examples

The following example shows how to enable logging merge:

```
NPB(config)# logging merge enable
```

The following example shows how to set logging merge timeout to default value:

```
NPB(config)# no logging merge timeout
```

Related Commands

show logging

16.12 show logging

Command Purpose

In privileged mode, use this command to display the configuration of logging.

Command Syntax

show logging

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the configuration of logging:

```
NPB#                                    show                                    logging

Current                                 logging                                 configuration:
============================================================
logging                                 buffer                                  500
logging                                 timestamp                               bsd
logging                                 file                                    enable
logging                         level                           file            warning
logging                         level                           module          debug
logging                                 server                                  disable
logging                         server                          severity        warning
logging                          server                          facility       local4
logging                                 merge                                   disable
logging                         merge                           fifo-size       1024
logging merge timeout 10
```

Related Commands

logging buff
logging timestamp
logging file
logging level file
logging level module
logging server
logging server severity
logging server facility
logging merge

16.13 show logging buffer

Command Purpose

In privileged mode, use this command to show logging buffer messages.

Command Syntax

show logging buffer (SYSLOGLINES |)

Parameter	Parameter Description	Parameter Value

SYSLOGLINES	Specify the number of message(s)	(-1000..+1000)

Command Mode
Privileged EXEC

Default
None

Usage
By default, syslog lines are sorted in reverse chronological order, which means the newest syslog is on top.

Examples
The following example shows how to display logging buffer :

```
NPB# show logging buffer

Sep 14 08:59:16 NPB init-6: starting pid 27391, tty \'/dev/ttyS0\': \'/usr/sbin/klish\'
Sep 14 08:59:16 NPB init-6: process \'/usr/sbin/klish\' (pid 27327) exited. Scheduling for restart.
Sep 14 08:49:40 NPB APP-1: logout, vty 1, location 169.254.1.2, by telnet
Sep 14 08:49:16 NPB init-6: starting pid 27327, tty \'/dev/ttyS0\': \'/usr/sbin/klish\'
Sep 14 08:49:16 NPB init-6: process \'/usr/sbin/klish\' (pid 27259) exited. Scheduling for restart.
Sep 14 08:39:15 NPB init-6: starting pid 27259, tty \'/dev/ttyS0\': \'/usr/sbin/klish\'
Sep 14 08:39:15 NPB init-6: process \'/usr/sbin/klish\' (pid 27167) exited. Scheduling for restart.
Sep 14 08:37:48 NPB APP-6: ready to service
```

Related Commands
clear logging buffer

16.14 show logging buffer statistics

Command Purpose
In privileged mode, use this command to display the amount of information stored in the log buffer.

Command Syntax
show logging buffer statistics

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to display the statistics of logging buffer:

```
NPB# show logging buffer statistics

Logging buffer statistics:
------------------------------------------------------------
Total processed 314 entries
Total dropped 0 entries
Current have 50 entries
```

Related Commands
clear logging buffer

16.15 show logging levels

Command Purpose
In privileged mode, use this command to show the severity level information of logging.

Command Syntax
show logging levels

Command Mode
Privileged EXEC

Default
None

Usage

None

Examples

The following example shows how to display the severity level information of logging:

```
NPB# show logging levels

Severity    Name    Note
============================================================
0    emergency    system is unusable
1    alert    action must be taken immediately
2    critical    critical conditions
3    error    error conditions
4    warning    warning conditions
5    notice    normal but significant condition
6    information    informational
7    debug    debug-level messages
```

Related Commands

logging level file

16.16 show logging facilities

Command Purpose

In privileged mode, use this command to display log daemon tool information.

Command Syntax

show logging facilities

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the facility information of logging:

```
NPB# show logging facilities

Logging facility information:
Facility    Name    Note
============================================================
0    kern    kernel messages
1    user    random user-level messages
2    mail    mail system
3    daemon    system daemons
4    auth    security/authorization messages
5    syslog    messages generated internally by syslogd
6    lpr    line printer subsystem
7    news    network news subsystem
8    uucp    UUCP subsystem
9    cron    clock daemon
10    authpriv    security/authorization messages (private)
11    ftp    ftp daemon
16    local0    reserved for local use 0
17    local1    reserved for local use 1
18    local2    reserved for local use 2
19    local3    reserved for local use 3
20    local4    reserved for local use 4
21    local5    reserved for local use 5
22    local6    reserved for local use 6
23    local7    reserved for local use 7
```

Related Commands
logging server facility

16.17 clear logging buffer

Command Purpose
In privileged mode, use this command to clear records in the log buffer.

Command Syntax
clear logging buffer

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to clear logging buffer:

```
NPB# clear logging buffer
```

Related Commands
show logging buffer

17 SNMP Commands

17.1 show snmp

Command Purpose

To display the services information of SNMP, use the show snmp command in privileged EXEC mode.

Command Syntax

show snmp

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the information of SNMP:

```
NPB#                                    show                                    snmp

NPB#                                    show                                    snmp
SNMP services: enable
```

Related Commands

snmp server enable

17.2 show snmp-server version

Command Purpose

To display the supported version of SNMP, use the show snmp-server version command in privileged EXEC mode.

Command Syntax

show snmp-server version

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the information of snmp-server version:

```
NPB#                    show                    snmp-server             version
SNMP services: SNMPv1/SNMPv2c
```

Related Commands

snmp-server version

17.3 show snmp-server community

Command Purpose

To display the SNMP community information, use the show snmp-server community command in privileged EXEC mode.

Command Syntax

show snmp-server community

Command Mode

Privileged EXEC

Default

None

Usage
None

Examples
The following example shows how to display the information of snmp-server community:

```
NPB # show snmp-server community

Community-Access Community-String Security-name
==========================================================
read-write sysname comm1
```

Related Commands
snmp-server community

17.4 show snmp-server engineID

Command Purpose
To display the identification of the local Simple Network Management Protocol (SNMP) engine and all remote engines that have been configured on the router, use the show snmp-server engineID command in EXEC mode.

Command Syntax
show snmp-server *engineID*

Command Mode
Privileged EXEC

Default
None

Usage
An SNMP engine is a copy of SNMP that can reside on a local or remote device.

Examples
The following example shows how to display the information of engineID:

```
NPB# show snmp-server engineID

Engine ID : 000000090200000000c025808
```

Related Commands
snmp-server engineID

17.5 show snmp-server sys-info

Command Purpose
To display the system information of SNMP, use the show snmp-server sys-info command in privileged EXEC mode.

Command Syntax
show snmp-server sys-info

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to display the information of snmp-server sys-info:

```
NPB# show snmp-server sys-info

Location: Sample Place
```

Related Commands
snmp-server system-contact
snmp-server system-location

17.6 show snmp-server trap-receiver

Command Purpose

To display the SNMP traps receiver, use the show snmp-server trap-receiver command in privileged EXEC mode.

Command Syntax

show snmp-server trap-receiver

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the information of snmp-server trap-receiver:

```
NPB#                              show                              snmp-server                              trap-receiver

Target-ipaddress                  mgmt-if          udpport                  version                  pdu-type                  community
============================================================
10.10.27.232                        yes                 162                   v1                       trap                    sysname
10.10.27.232     yes     162     v2c     trap     sysname
```

Related Commands

snmp-server trap target-address

17.7 show snmp-server inform-receiver

Command Purpose

To display the SNMP informs receiver, use the show snmp-server inform-receiver command in privileged EXEC mode.

Command Syntax

show snmp-server inform-receiver

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display the information of snmp-server inform-receiver:

```
NPB#                              show                              snmp-server                              inform-receiver

Target-ipaddress                  mgmt-if          udpport                  version                  pdu-type                  community
============================================================
10.10.27.233     yes     162     v2c     inform    sysname
```

Related Commands

snmp-server inform target-address

17.8 show snmp-server view

Command Purpose

To display the family name, storage types, and status of a Simple Network Management Protocol (SNMP) configuration and associated MIB, use the show snmp-server view command in privileged EXEC mode.

Command Syntax

show snmp-server view (*USERNAME* |)

Parameter	Parameter Description	Parameter Value
USERNAME	Specify a view name that want to show, WORD	-

Command Mode

Privileged EXEC

Default
None
Usage
None
Examples
The following example shows how to display the information of snmp-server view:

```
NPB#                    show                    snmp-server                    view

View-name                                                View-type                Subtree
============================================================
a                                                          excluded                 .1
a2                                                         included                 .1.2
abc                                                        excluded                 .1.3.6.2
_all_                                                      included                 .0
_all_                                                      included                 .1
_all_                                                      included                 .2
_none_                                                     excluded                 .0
_none_                                                     excluded                 .1
_none_          excluded        .2
```

Related Commands
snmp-server view

17.9 snmp-server enable

Command Purpose
To enable the SNMP function, use the snmp-server enable command in global configuration mode.
Use the no form of this command to disable the SNMP-server.
Command Syntax
snmp-server enable
no snmp-server enable
Command Mode
Global Configuration
Default
Disabled
Usage
None
Examples
The following example shows how to set the snmp-server enable:

```
NPB(config)# snmp-server enable
```

The following example shows how to set the snmp-server disable:

```
NPB(config)# no snmp-server enable
```

Related Commands
show snmp

17.10 snmp-server engineID

Command Purpose
To specify the Simple Network Management Protocol (SNMP) engine ID on the local device, use the snmp-server engineID command in global configuration mode.
Use the no form of this command to restore the default value
Command Syntax
snmp-server *engineID ENGINEID*
no snmp-server *engineID*

Parameter	Parameter Description	Parameter Value
ENGINEID	octet string of hexadecimal characters	10-64 hexadecimal characters

Command Mode
Global Configuration

Default
An SNMP engine ID is generated automatically but is not displayed or stored in the running configuration. Default engine ID is 30383038303830383038. You can display the default or configured engine ID by using the show snmp-server engineID command.

Usage
The SNMP engine ID is a unique string used to identify the device for administration purposes. You do not need to specify an engine ID for the device. For further details on the SNMP engine ID, see RFC 2571.

Examples
The following example shows how to set the snmp-server engineID:
```
NPB(config)# snmp-server engineID 1234567890
```
The following example shows how to delete the snmp-server engineID:
```
NPB(config)# no snmp-server engineID
```

Related Commands
show snmp-server engineID

17.11 snmp-server system-contact

Command Purpose
To set the system contact string, use the snmp-server system-contact command in global configuration mode.
Use the no form of this command to delete the contact string.

Command Syntax
snmp-server system-contact *KLINE*
no snmp-server system-contact

Parameter	Parameter Description	Parameter Value
KLINE	Specify SNMP system contact parameter	Up to 255 characters, valid character is among "0-9A-Za-z.-_@*"

Command Mode
Global Configuration

Default
None

Usage
None

Examples
The following example shows how to set the system contact string:
```
NPB(config)# snmp-server system-contact admin@example.com
```
The following example shows how to delete the system contact string:
```
NPB(config)# no snmp-server system-contact
```

Related Commands
show snmp-server sys-info

17.12 snmp-server system-location

Command Purpose
To set the system location string, use the snmp-server system-location command in global configuration mode.
Use the no form of this command to delete the location string.

Command Syntax
snmp-server system-location *KLINE*
no snmp-server system-location

Parameter	Parameter Description	Parameter Value
KLINE	Specify SNMP system location parameter	Up to 255 characters, valid character is among "0-9A-Za-z.-_@*"

Command Mode
Global Configuration

Default
None

Usage
This command is used to set the system location of the SNMP agent so that these descriptions can be accessed through the configuration file.

Examples
The following example shows how to set the system location string:
```
NPB(config)# snmp-server system-location Sample_Place
```
The following example shows how to remove the system location string:
```
NPB(config)# no snmp-server system-location
```

Related Commands
show snmp-server sys-info

17.13 snmp-server version

Command Purpose
To specify the support of SNMP version, use the snmp-server version command in global configuration mode.
Use the no form of this command to restore the default value.

Command Syntax
snmp-server version (all | v1 | v2c)
no snmp-server version

Parameter	Parameter Description	Parameter Value
all	Support all versions (v1, v2c, and v3)	-
v1	Support only v1 version	-
v2c	Support only v2c version	-

Command Mode
Global Configuration

Default
Support v1 and v2c SNMP versions.

Usage
None

Examples
The following example shows how to set SNMP –server to support all versions:
```
NPB(config)# snmp-server version all
```
The following example shows how to restore the SNMP –server to support default versions:
```
NPB(config)# no snmp-server version
```

Related Commands
show snmp-server version

17.14 snmp-server view

Command Purpose
To create or update a view entry, use the snmp-server view command in global configuration mode.
Use the no form of this command to delete the view.

Command Syntax
snmp-server view *SNMPNAME* (excluded | included) *SNMPSUBTREE* (mask *SNMPMASK*)
no snmp-server view *SNMPNAME* (excluded | included) *SNMPSUBTREE*

Parameter	Parameter Description	Parameter Value
SNMPNAME	Label for the view record that you are updating or creating. The name is used to reference the record	-
excluded	Configures the OID (and subtree OIDs) specified in sub-tree	-

	argument to be included in the SNMP view	
included	Configures the OID (and subtree OIDs) specified in sub-tree argument to be explicitly excluded from the SNMP view	-
SNMPSUBTREE	Object identifier of the ASN.1 subtree to be included or excluded from the view	-
SNMPMASK	Define the subtree mask	-

Command Mode
Global Configuration

Default
None

Usage
Other SNMP commands require an SNMP view as an argument. You use this command to create a view to be used as arguments for other commands.

Examples
The following example shows how to create a snmp-server view:
```
NPB(config)# snmp-server view abc excluded 1.3.6.2
```
The following example shows how to delete a snmp-server view:
```
NPB(config)# no snmp-server view abc excluded 1.3.6.2
```

Related Commands
show snmp-server view

17.15 snmp-server community

Command Purpose
To set up the community access string to permit access to the Simple Network Management Protocol (SNMP), use the snmp-server community command in global configuration mode.
Use the no form of this command to delete the community.

Command Syntax
snmp-server community *CONM_NAME* (read-only | read-write) (view *VIEW_NAME* |)
no snmp-server community *CONM_NAME*

Parameter	Parameter Description	Parameter Value
CONM_NAME	Specify a SNMP community name	A string with 1-256 characters. A blank means deny access.
read-only	Specifies read-only access. Authorized management stations can retrieve only MIB objects	-
read-write	Specifies read-write access. Authorized management stations can both retrieve and modify MIB objects	-
view VIEW_NAME	MIB view to which this community has access	-

Command Mode
Global Configuration

Default
None

Usage
None

Examples
The following example shows how to create a community named test:
```
NPB(config)# snmp-server community test read-write
```

The following example shows how to delete the community:

```
NPB(config)# no snmp-server community test
```

Related Commands

show snmp-server community

17.16 snmp-server trap enable

Command Purpose

To enable all Simple Network Management Protocol (SNMP) notification types that are available on your system, use the snmp-server trap enable command in global configuration mode.
Use the no form of this command to disable the trap.

Command Syntax

snmp-server trap enable (all | coldstart | warmstart | linkdown | linkup)
no snmp-server trap enable (all | coldstart | warmstart | linkdown | linkup)

Parameter	Parameter Description	Parameter Value
all	Enable all traps	-
coldstart	Cold start traps	-
warmstart	Warm start traps	-
linkdown	Link down traps	-
linkup	Link up traps	-

Command Mode

Global Configuration

Default

Disabled

Usage

The snmp-server trap enable command is used in conjunction with the snmp-server trap target-address command. Use the snmp-server trap target-address command to specify which host or hosts receive SNMP notifications. To send notifications, you must configure at least one snmp-server trap target-address command.

Examples

The following example shows how to set all traps enable:

```
NPB(config)# snmp-server trap enable all
```

The following example shows how to set all traps disable:

```
NPB(config)# no snmp-server trap enable all
```

Related Commands

snmp-server trap target-address

17.17 snmp-server trap target-address

Command Purpose

To configure a remote trap management IP address, use the snmp-server target-address command in global configuration mode.
Use the no form of this command to delete the target address.

Command Syntax

snmp-server trap target-address mgmt-if *IP_ADDR* community *COMNAME* (udpport *UDP_PROT*)
no snmp-server trap target-address *IP_ADDR* community *COMNAME* (udpport *UDP_PROT*)

Parameter	Parameter Description	Parameter Value
IP_ADDR	Specify a SNMP IPV4 address	-
COMNAME	Specify a SNMP community name	-
UDP_PORT	The port number which area is 0 to 65535, the default is 162	-

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example shows how to set the trap target address to 169.254.2.2 and set the udp port to 13:

```
NPB(config)# snmp-server trap target-address mgmt-if 169.254.2.2 community test udpport 13
```

The following example shows how to delete the trap target address:

```
NPB(config)# no snmp-server trap target-address mgmt-if 169.254.2.2 community test udp 13
```

Related Commands

show snmp-server trap-receiver

17.18 snmp-server trap delay linkup

Command Purpose

To configure the trap delay linkup time, use the snmp-server trap delay linkup command in global configuration mode. Use the no form of this command to restore the default value.

Command Syntax

snmp-server trap delay linkup *TRAP_DELAY_TIME*

no snmp-server trap delay linkup

Parameter	Parameter Description	Parameter Value
TRAP_DELAY_TIME	Linkup trap delay time	1-10 seconds

Command Mode

Global Configuration

Default

0

Usage

None

Examples

The following example shows how to set the delay time to 10 seconds:

```
NPB(config)# snmp-server trap delay linkup 10
```

The following example shows how to restore the delay time to default value:

```
NPB(config)# no snmp-server trap delay linkup
```

Related Commands

snmp-server trap enable

17.19 snmp-server trap delay linkdown

Command Purpose

To configure the trap delay linkdown time, use the snmp-server trap delay linkdown command in global configuration mode. Use the no form of this command to restore the default value.

Command Syntax

snmp-server trap delay linkdown *TRAP_DELAY_TIME*

no snmp-server trap delay linkdown

Parameter	Parameter Description	Parameter Value
TRAP_DELAY_TIME	Linkdown trap delay time	1-10 seconds

Command Mode

Global Configuration

Default

0

Usage

None

Examples

The following example shows how to set the delay time to 10 seconds:

```
NPB(config)# snmp-server trap delay linkdown 10
```

The following example shows how to restore the delay time to default value:

```
NPB(config)# no snmp-server trap delay linkdown
```

Related Commands
snmp-server trap enable

17.20 snmp-server inform target-address

Command Purpose
To specify the recipient of a Simple Network Management Protocol (SNMP) inform message, use the snmp-server inform target-address command in global configuration mode.
Use the no form of this command to delete the configuration.

Command Syntax
snmp-server inform target-address mgmt-if *IP_ADDR* community *COMNAME* (udpport *UDP_PROT* |)
no snmp-server inform target-address *IP_ADDR* community *COMNAME* (udpport *UDP_PROT* |)

Parameter	Parameter Description	Parameter Value
IP_ADDR	Specify a SNMP IPV4 address	-
COMNAME	Specify a SNMP community name	-
UDP_PROT	The port number	The port number which area is 0 to 65535, the default is 162

Command Mode
Global Configuration

Default
None

Usage
None

Examples
The following example shows how to set the target address for inform messages:
```
NPB(config)# snmp-server inform target-address 169.254.2.2 community test udpport 100
```
The following example shows how to delete the target address for inform messages:
```
NPB(config)# no snmp-server inform target-address 169.254.2.2 community test udpport 100
```

Related Commands
show snmp-server inform-receiver

17.21 snmp-server access-group

Command Purpose
Use this command to apply access list on Simple Network Management Protocol(SNMP).Use the no form of this command to remove access list applied to SNMP.

Command Syntax
snmp-server access-group *NAME_STRING* in
no snmp-server access-group

Parameter	Parameter Description	Parameter Value
NAME_STRING	IP ACL NAME	The initial character name should be a-z, A-Z, 0-9 or ._-, character only can be 0-9A-Za-z.-_ and the max length is 20

Command Mode
Global Configuration

Default
None

Usage
ACL applied on SNMP can only matching of source IP,destination IP, behaviour as WhiteList by default.

Examples
The following example shows how to apply acl to SNMP:
```
NPB(config)#                    ip                    access-list                    a5
NPB(config-ip-acl-a5)#                                                               exit
```

NPB(config)# snmp-server access-group a5 in
Notice: ACL applied on SNMP can only matching of source IP,destination IP, behaviour as WhiteList by default.

Related Commands

None

18 AUTH Commands

18.1 show usernames

Command Purpose

Use this command to show local user account names on the NPB.

Command Syntax

show usernames

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show usernames command:

```
NPB#                                                    show                                                    usernames

Number          User    name                                                    Privilege       Password        Rsa     Key
--------+-------------------------------+-----------+----------+-------
1                       admin                                                   4                               *
2                       test                                                    4                               *
NPB#
```

Related Commands

username

18.2 show users

Command Purpose

Use this command to display information about terminal lines.

Command Syntax

show users

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show users command:

```
NPB#                                                    show                                                    users

Line                                    Host(s)         Idle                    Location                User
---------------+----------+----------+---------------+----------
 130        vty             0                               idle                                    2d20h16m                Local
 131        vty             1                               idle                                    20:42:32                10.10.25.25
*132 vty  2     idle      00:00:00   10.10.25.25
```

Related Commands

show usernames

18.3 show web users

Command Purpose

Use this command to display information of the web users。

Command Syntax

show web users

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample to show web users:

```
NPB# show web users

Session Id                      Expire Time         Client IP       User Name
--------------------------------+-------------------+---------------+-----------
320570bf7624e99f9c01912e82c4515b 2017-01-05 00:53:15 10.10.22.236    admin
```

Related Commands

username

18.4 show privilege

Command Purpose

Use this command to display the current privilege.

Command Syntax

show privilege

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to display current privilege:

```
NPB# show privilege

Current privilege level is 4
```

Related Commands

username

18.5 clear line console 0

Command Purpose

Use this command to clear primary console terminal line login.

Command Syntax

clear line console 0

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample to clear line console 0:

```
NPB# clear line console 0
[OK]
```

Related Commands

line console

18.6 clear line vty

Command Purpose

Use this command to clear virtual terminal line login. Line number range is 0 to 7.

Command Syntax

clear line vty *VTYID1* (*VTYID2* |)

Parameter	Parameter Description	Parameter Value
VTYID1	First Line number	0-7
VTYID2	Last Line number	0-7

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample to clear virtual terminal line from 4 to 7:

```
NPB# clear line vty 4 7
[OK]
```

Related Commands

show users

18.7 clear web session

Command Purpose

Use this command to clear web sessions.

Command Syntax

clear web session (all | *WEBSESSION*)

Parameter	Parameter Description	Parameter Value
all	Clear all sessions	-
WEBSESSION	Session Name	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample to clear all web sessions:

```
NPB# clear web session all

[OK]
```

Related Commands

show web users

18.8 show console

Command Purpose

Use this command to show the current console configuration.

Command Syntax

show console

Command Mode

Privileged EXEC

Default

None

Usage
None
Examples
The following is sample output from the show console command:

```
NPB#                                show                                console

Current                           console                           configuration:
------------------------------------------------------------
line                                console                                   0
 speed                                                                   115200
 parity                                                                    none
 databits                                                                     8
 stopbits                                                                     1
 exec-timeout                            10                                   0
 privilege                             level                                  4
 no                                                                line-password
 no login
```

Related Commands
line console

18.9 show vty

Command Purpose
Use this command to show the current vty configuration.
Command Syntax
show vty
Command Mode
Privileged EXEC
Default
None
Usage
None
Examples
The following is sample output from the show vty command:

```
NPB#                                show                                vty

line                              vty                               maximum     8
line                                vty                                 0       7
 exec-timeout                           35791                                0
 privilege                             level                                  4
 no                                                                line-password
 no login
```

Related Commands
line vty

18.10 show rsa keys

Command Purpose
Use this command to show RSA key information.
Command Syntax
show rsa keys
Command Mode
Privileged EXEC
Default
None
Usage
None

Examples

The following is sample to show RSA key:

```
NPB# show rsa keys

Current RSA key configuration:
Name Type Usage Modulus
--------------------------------+--------+-------+---------
abc private 0 1024
importkey public 1 1024
```

Related Commands

rsa key

18.11 show rsa key

Command Purpose

Use this command to show RSA key information.

Command Syntax

show rsa key *RSAKEYNAME* (der | pem (3des *RSAPASSWORD* | aes128 *RSAPASSWORD* | aes192 *RSAPASSWORD* | aes256 *RSAPASSWORD* | des *RSAPASSWORD* |) |)

Parameter	Parameter Description	Parameter Value
RSAKEYNAME	Key name	-
der	Certificate of der	-
pem	Certificate of pem	-
3des	Treble encryption standard	-
des	Data encryption standard	-
Aes128	Advanced encryption standard 128 bit	-
Aes192	Advanced encryption standard 192 bit	-
Aes256	Advanced encryption standard 256 bit	-
RSAPASSWORD	Passphrase used to protect the private key (length should >= 6)	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample to show RSA key:

```
NPB# show rsa key abc

RSA key information:
----------------------------------------------------------
Name: abc
Type: private
Modulus: 1024 bit
Usage count: 0
Private key DER code:
 30820258
  0201
   00
  028180
   D4E93929 20C1014D D9C64EF3 A8AB905D FDCF2D08 6DEFAC26 691D3168 E4C2F812
```

```
   394390A1 A1D648BF 50DE534D 718FF606 69DDC302 F005FBC6 A3A3E616 4A9EEF47
   9093AD9B 42F436A8 71C3C8D2 ECF14DD1 EEEC83AF 9EC5DF87 832A072F 5C02D463
   515753C2 EC610B25 4228B7F0 D9E99DF7 9AD011B5 7BA49B7F 1B838AA9 D92003CB
  0203
   010001
  028180
   2B45DBA0 484FF1FB E8AF2D8C C853565C 4421BF7D 5F1ABF5A 6F32C7C0 11FEAE7C
   C5B6BDC6 9C25F953 291486C9 CEB2FBC6 01EE589C 583C5F17 D85A8F81 28597538
   2F710C05 E9E4CAF9 A1639486 DF19DF70 69246C57 09570697 14C283EE 50786669
   99483E8B A35129CC 61655216 859740C7 7D5E0610 460A265B BB97F546 9C6ED981
  0240
   F06C6D70 F348C0F8 5A6CFB99 215A04FB 9C9E295E 93BE6D9F 5FCBFF93 1EE3C6E8
   B85B2E5C 98F51B66 74B35957 38896051 CCBD6875 A34AF5B7 71BC4FA1 6E448303
  0240
   E2B47BD7 7A5C7D8F 41FB8311 BFE43080 0DF24D7D 0FADCECF 7921975A A7B28623
   1E19AB8D 57F12487 B284D4EA AA2EC370 06DB170F F2E72B96 1DF1F51A 38523D99
  0240
   098D855B B38EF47B E9BBE2D3 56CBE8DE C67E524E 7BB8594A B7D7B733 F54A3FA1
   079237E9 5DFA7F38 36F2D95D E9D52B8A 9484021E 8A7A7400 F1F7F582 088B9859
  0240
   9FD333F7 CE990420 0A1981E6 F28CB230 A5246CC2 BD5A0092 3E489346 E33135E5
   EE2394D1 39ED949E 6219C96D 82FB22E7 88BDCEBD 7CB6C300 BB2DC869 6AC97809
  0240
   BEFEFE99 CDBB2AAB BA1EB81B 7B189124 B73700BD 3F40B23A AAE648A4 CF07E99E
   58261516 C58A1468 5603B90B 24CFD0FC 2609C215 E30375CA 0764FF71 1BF434FF
Public key DER code:
 308188
  028180
   D4E93929 20C1014D D9C64EF3 A8AB905D FDCF2D08 6DEFAC26 691D3168 E4C2F812
   394390A1 A1D648BF 50DE534D 718FF606 69DDC302 F005FBC6 A3A3E616 4A9EEF47
   9093AD9B 42F436A8 71C3C8D2 ECF14DD1 EEEC83AF 9EC5DF87 832A072F 5C02D463
   515753C2 EC610B25 4228B7F0 D9E99DF7 9AD011B5 7BA49B7F 1B838AA9 D92003CB
  0203
   010001
```

Related Commands

rsa key

18.12 show key config

Command Purpose

Use this command to display the details of the current key configuration.

Command Syntax

show key config

Command Mode

Rsa Key Configuration

Default

None

Usage

None

Examples

The following example shows how to display the current key configuration:

```
NPB(config-rsa-key)# show key config

Current key configuration:
 key type: private
 key format: pem
 key password: unspecified
```

Related Commands

rsa key

18.13 show key string

Command Purpose

Use this command to display the details of the current key string.

Command Syntax

show key string

Command Mode

Rsa Key Configuration

Default

None

Usage

None

Examples

The following example shows how to display the current key string:

```
NPB(config)#                                rsa                                 key                                 a

Modify                                  private                                 key                                 a
NPB(config-rsa-key)#                        show                                 key                                string
Current                                             key                                                            string:
 30820258
  0201
   00
  028180
   AD4F1364     4F46C9F9     25D7BA98     B7F266A4     F3448E83     71D51F84     EF225E90     7D0117F0
   CD81012F     50944BF3     17A5CA56     7A2DC3D2     6A33CD52     6FD2DBE3     442C6546     DC3DD48A
   D8A4020C     2333F039     53FD39DE     01E5038B     F1B59E7A     5B355FA2     26148F58     48C16D89
   36828C61     00A518CD     F7EEBFBF     68CDB456     DC08BF5F     550A1273     28EF8E7C     0469634F
  0203
   010001
  028180
   9321ACDE     DE06C4F5     45D14DD2     D5676F08     DE95F73F     546690E9     B472C341     7B3E706A
   B8ACAAAA     D687EFAA     A30AD72A     6F7366E9     BDCBD8A6     01D54B64     37BE5104     C579A074
   1206CD3C     70BA5E26     D22F0049     EABBCAA3     8AAAA932     C28DF32B     1C75EF5C     0052751C
   A5BA0D06     B0F9E6D2     9FE9281D     FE2976C9     6C1A3288     590EB014     311AE5E2     0514AE41
  0240
   D8F10ACD     BA5EA745     A5C52F61     19498B76     C181D0A0     F1CA197B     C3E5204A     09206E1E
   B5217249     B595CA01     EBF82649     B272511C     8AD5138C     553717CD     4120D026     5D8CAE51
  0240
   CC82FA9D     866C95FA     AE967B81     C343F9E0     2D41B59F     45C41197     28F37B3B     0C09D7B6
   4867858D     73876AEF     7692CCC6     A7A51A6C     8A1C62E6     FF75E209     75D02A51     E2346F9F
  0240
   943B3F52     8B0199F1     F0EEE70C     C5A686F0     C20FDD69     DB4C6855     34E91E42     F8317C8C
   E6DECFA4     A5BA8FA8     F87F3A4A     28F00B94     2118AE9E     B8AB484C     2B302C89     CA6A11C1
  0240
   3F15C828     FF664F7D     5C8D9EDB     90584FA4     0F51CDAC     ABE0A76C     717D69ED     F4F0B451
   CE53E0A6     9994942F     F9EB9EAF     48D76D27     3E13338E     FE0E6703     740C1A81     D7BD4511
  0240
   90D784A0     EBF913CE     82A19E91     4A0C5437     120C758F     F9C94932     919A36B5     5BB01C76
   7460665E     6A1E8227     1BF592D3     650FCE6A     DE22C1CB     FCCA9433     A2FA142C     D9D75CC9
NPB(config-rsa-key)#
```

Related Commands

rsa key

18.14 show tacacs

Command Purpose

Use this command to display information about TACACS+ server's configurations.

Command Syntax

show tacacs

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following is sample output from the show tacacs command:

```
NPB#                                                    show                                                    tacacs

============================================================
Host                                                    Port            Timeout     Retries     Dead     Secret
============================================================
2.1.1.1         49  5       3       0   mykey
```

Related Commands
tacacs-server host

18.15 show aaa status

Command Purpose
Use this command to show authentication, authorization, accounting (AAA) status.

Command Syntax
show aaa status

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to show authentication, authorization, accounting status:

```
NPB#                                    show                                    aaa                                    status

AAA                                                                                                                    status:
   Authentication enable
```

Related Commands
aaa new-model

18.16 show aaa privilege mapping

Command Purpose
Use this command to show privilege mapping relationship with server privilege.

Command Syntax
show aaa privilege mapping

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following example shows how to show privilege mapping relationship:

```
NPB#                        show                        aaa                        privilege                        mapping

  Server                                                NPB                                                        Server
====================================
     0                                                    1                                                          0
```

```
1 2 1
2~10 3 10
11~15 4 15
```

Related Commands

aaa privilege mapping

18.17 show aaa method-lists

Command Purpose

Use this command to show authentication, authorization, accounting (AAA) authentication method lists.

Command Syntax

show aaa method-lists authentication (accounting | all | authentication | authorization)

Parameter	Parameter Description	Parameter Value
accounting	Accounting information	-
all	All information	-
authentication	Authentication information	-
authorization	Authorization information	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following example shows how to show authentication method lists:

```
NPB# show aaa method-lists all

Authen queue = AAA_ML_AUTHEN_LOGIN
  Name = default state = ALIVE: local radius none
Author queue = AAA_ML_AUTHOR_SHELL
  Name = default state = ALIVE: tacplus none
Account queue = AAA_ML_ACCT_SHELL
  Name = default state = ALIVE: none
Account queue = AAA_ML_ACCT_COMMAND
  Name = default   state = ALIVE: none
```

Related Commands

aaa authentication login

aaa authentication exec

aaa accounting exec

18.18 line console

Command Purpose

Use this command to set console configuration.

Command Syntax

line console 0

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following is an example of configure to line console 0:

```
NPB(config)# line console 0
NPB(config-line)#
```

Related Commands
show console

18.19 line vty

Command Purpose
Use line vty command to set virtual terminal line configuration.

Command Syntax
line vty *VTYID1* (*VTYID2* |)

Parameter	Parameter Description	Parameter Value
VTYID1	First Line number	0-7
VTYID2	Last Line number	0-7

Command Mode
Global Configuration

Default
None

Usage
None

Examples
The following is an example of configure to virtual terminal line 4 to 7:

```
NPB(config)# line vty 4 7
NPB(config-line)#
```

Related Commands
show vty

18.20 line vty maximum

Command Purpose
Use line vty maximum command to set maximum vty users.
Use the no form of this command to set maximum vty users to it default value.

Command Syntax
line vty maximum *VTYMAX*
no line vty maximum

Parameter	Parameter Description	Parameter Value
VTYMAX	Max Line number	0-8. default is 8

Command Mode
Global Configuration

Default
8

Usage
None

Examples
The following is an example of configure to three vty users:

```
NPB(config)# line vty maximum 3
```

The following is an example to reset maximum vty users:

```
NPB(config)# no line vty maximum
```

Related Commands
show line vty

18.21 rsa key generate

Command Purpose
Use this command to create a key.
Use the no form of this command to delete the key.

Command Syntax

rsa key *RSAKEYNAME* generate (*RSAKEYBITS* |)
no rsa key *RSAKEYNAME*

Parameter	Parameter Description	Parameter Value
RSAKEYNAME	Key name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 255 characters.
RSAKEYBITS	RSA key bits number	768-4096,default is 1024

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example creates a key named test， length is 768:

```
NPB(config)# rsa key test generate 768

Generating RSA private key, 768 bit long modulus
Please waiting for a moment: done!
Public exponent is 65537 (0x10001)
Generate RSA key successfully
```

The following example deletes the key:

```
NPB(config)# no rsa key test
```

Related Commands

show rsa keyrsa key

18.22 rsa key import

Command Purpose

Use this command to import a key.

Command Syntax

rsa key *RSAKEYNAME* import mgmt-if url *STRING* (private | public) (der | der-hex | pem (*PASSPHRASE* |) | ssh1 (*PASSPHRASE* |) | ssh2 (*PASSPHRASE* |)

Parameter	Parameter Description	Parameter Value
RSAKEYNAME	Key name	-
STRING	The url to save the key file	-
private	Import from private key	-
public	Import from public key	-
der | der-hex | pem | ssh1 | ssh2	The format of the key to import	-
PASSPHRASE	Encrypt the key string	-

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example imports a key:

```
NPB(config)# rsa key importnewk import mgmt-if url tftp://10.10.38.160/newk.pub public ssh2

Download from URL to temporary file.
Get file from tftp://10.10.38.160/newk.pub
.
```

```
Received 212 bytes in 0.1 seconds
Copy the temporary file to its destination.
.
File system synchronization. Please waiting...
212 bytes in 0.1 seconds, 2 kbytes/second
% Import RSA key successed
```

Related Commands

rsa key generate
rsa key export

18.23 rsa key export

Command Purpose

Use this command to export a key.

Command Syntax

rsa key *RSAKEYNAME* export mgmt-if url *STRING* (private | public) (der | der-hex | pem ((3des | aes128 | aes192 | aes256 | des) *PASSPHRASE* |) | ssh1 (3des *PASSPHRASE* |) | ssh2 (3des *PASSPHRASE* |))

Parameter	Parameter Description	Parameter Value
RSAKEYNAME	Key name	-
STRING	The url to save the key file	-
private	Export to private key	-
public	Export to public key	-
der | der-hex | pem | ssh1 | ssh2	The format of the key to export	-
3des | aes128 | aes192 | aes256 | des	The encryption transmission algorithm of the exported key file.	-
PASSPHRASE	Encrypt the key string	-

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example exports a key:

```
NPB(config)# rsa key newk export mgmt-if url tftp://10.10.38.160/newk.pub public ssh2

Send file to tftp://10.10.38.160/newk.pub
.
Sent 212 bytes in 0.0 seconds
% Export RSA key success
```

Related Commands

rsa key generate
rsa key import

18.24 rsa key

Command Purpose

Use this command to create a key and enter key configuration mode.
Use the no form of this command to delete the key.

Command Syntax

rsa key *RSAKEYNAME*
no rsa key *RSAKEYNAME*

Parameter	Parameter Description	Parameter Value

RSAKEYNAME	Key name	-

Command Mode
Global Configuration

Default
None

Usage
None

Examples
The following example creates a key named test:

```
NPB(config)#                    rsa                    key                    test
NPB(config-rsa-key)#
```

The following example deletes a key named test:

```
NPB(config)# no rsa key test
```

Related Commands
rsa key generate

18.25 reset

Command Purpose
To clear all key configurations, use the reset command in RSA key configuration mode.

Command Syntax
reset

Command Mode
Rsa Key Configuration

Default
None

Usage
None

Examples
The following example shows to clear all configurations for the key KEY1:

```
NPB(config)#                    rsa                    key                    KEY1
NPB(config-rsa-key)# reset
```

Related Commands
rsa key

18.26 key type

Command Purpose
To specify the key type, use the key type command in RSA key configuration mode.

Command Syntax
key type (private | public)

Parameter	Parameter Description	Parameter Value
private	Private key	-
public	Public key	-

Command Mode
Rsa Key Configuration

Default
Public

Usage
None

Examples
The following example specifies the key type of KEY1 as public key::

```
NPB(config)#                    rsa                    key                    KEY1
NPB(config-rsa-key)# key type public
```

Related Commands
rsa key

18.27 key format

Command Purpose
To specify the key format, use the key format command in RSA key configuration mode.

Command Syntax
key format (der | pem)

Parameter	Parameter Description	Parameter Value
der	Der format	-
pem	Pem format	-

Command Mode
Rsa Key Configuration

Default
DER

Usage
None

Examples
The following example specifies the key format of KEY1 as pem:

```
NPB(config)#                    rsa                    key                    KEY1
NPB(config-rsa-key)# key format pem
```

Related Commands
rsa key

18.28 key string end

Command Purpose
Use this command to exit the rsa key configuration mode and apply all rsa key configurations. After using this command, the current command mode should be global configuration mode.

Command Syntax
key string end

Command Mode
Rsa Key Configuration

Default
None

Usage
None

Examples
The following example shows exit the rsa key configuration mode:

```
NPB(config)#                    rsa                    key                    KEY1
NPB(config-rsa-key)#               key                    string                 end
NPB(config)#
```

Related Commands
rsa key

18.29 validate

Command Purpose
To check the validation of the key strings, use the validate command in RSA key configuration mode.

Command Syntax
validate

Command Mode
Rsa Key Configuration

Default
None

Usage
None

Examples
The following example shows to validate key strings of the key KEY1:

```
NPB(config)#                    rsa                         key                     a

Modify                          private                     key                     a
NPB(config-rsa-key)#            00302017        4A7D385B        1234EF29        335FC973
NPB(config-rsa-key)#            2DD50A37        C4F4B0FD        9DADE748        429618D5
NPB(config-rsa-key)#                                                            validate
% Validated Ok
```

Related Commands
rsa key

18.30 KEYLINE

Command Purpose
To add key strings from the screen directly, type any strings in RSA key configuration mode except the keywords in this mode.

Command Syntax
KEYLINE

Command Mode
Rsa Key Configuration

Default
None

Usage
None

Examples
The following example shows to type a key string of the key KEY1:

```
NPB(config)#                    rsa                         key                     KEY1
NPB(config-rsa-key)#            00302017        4A7D385B        1234EF29        335FC973
NPB(config-rsa-key)# 2DD50A37 C4F4B0FD 9DADE748
```

Related Commands
rsa key
validate

18.31 re-activate radius-server

Command Purpose
Use this command to re-activate the specified radius servers.

Command Syntax
re-activate radius-server (all | host *IP_ADDR* (auth-port *AUTHDPORT* |) |)

Parameter	Parameter Description	Parameter Value
all	Re-active all radius-servers	-
host IP_ADDR	Re-active the radius-server by server ip	-
auth-port AUTHDPORT	Re-active the radius-server by server ip and udp port	-

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to re-activate the radius server. It's unnecessary for users to wait for the radius-server dead time with this command.

Examples

This example shows how to re-activate radius-server:

```
NPB# re-activate radius-server all
```

Related Commands

radius-server host

18.32 show radius-server

Command Purpose

Use this command to display radius server states of each IEEE 802.1 x sessions.

Command Syntax

show radius-server

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to display the current radius-server and dead radius-servers of each IEEE 802.1x sessions.

Examples

This example shows how to show radius-server:

```
NPB# show radius-server

=====================================
radius servers in dead list:
 server address : 10.0.0.1:1812
 dead timer : 4
=====================================
```

Related Commands

radius-server host

18.33 radius-server host

Command Purpose

Use this command to specify a RADIUS server host.

Use the no form of this command to delete the host.

Command Syntax

radius-server host mgmt-if *IP_ADDR* (auth-port *AUTHDPORT* |) (key (8 |) *AUTHDKEY* |) (retransmit *AUTHDRETRIES* |) (timeout *AUTHDTIMEOUT* |)

no radius-server host mgmt-if *IP_ADDR* (auth-port *AUTHDPORT* |)

Parameter	Parameter Description	Parameter Value
mgmt-if	Use management interface	-
IP_ADDR	IP address of radius server	-
auth-port AUTHDPORT	RADIUS server port number (default 1812)	-
8	Specifies a hidden password will follow	-
key (8 |) AUTHDKEY		-
retransmit AUTHDRETRIES	RADIUS server retries (default 3)	-
timeout AUTHDTIMEOUT	RADIUS server timeout in seconds (default 5)	-

Command Mode

Global Configuration

Default

None

Usage

You can use multiple radius-server host commands to specify multiple hosts. The software searches for hosts in the order in which you specify them. If no host-specific timeout, retransmit, or key values are specified, the global values apply to each host.

Examples

This example shows how to set the radius-server key::

```
NPB(config)# radius-server host mgmt-if 10.0.0.1
```

This example shows how to delete radius-server key:

```
NPB(config)# no radius-server host mgmt-if    10.0.0.1
```

Related Commands

show radius-server

18.34 radius-server deadtime

Command Purpose

Use this command to improve RADIUS response times when some servers might be unavailable and cause the unavailable servers to be skipped immediately.

Use the no form of this command to restore the default value.

Command Syntax

radius-server deadtime *DEADTIME*

no radius-server deadtime

Parameter	Parameter Description	Parameter Value
DEAD_TIME	RADIUS server deadtime in minutes	1-20 minutes. default is 5 minute.

Command Mode

Global Configuration

Default

5

Usage

Use this command to cause the NPB to mark as “dead” any RADIUS servers that fail to respond to authentication requests, thus avoiding the wait for the request to time out before trying the next configured server. A RADIUS server marked as “dead” is skipped by additional requests for the duration of minutes, unless there are no servers not marked “dead”.

Examples

This example shows how to set radius-server dead time:

```
NPB(config)# radius-server deadtime 10
```

This example shows how to restore the default radius-server dead time:

```
NPB(config)# no radius-server deadtime
```

Related Commands

show radius-server

18.35 radius-server retransmit

Command Purpose

Use this command to specify the number of times the NPB searches the list of RADIUS server hosts before giving up.

Use the no form of this command to restore the default value.

Command Syntax

radius-server retransmit *RETRANSMIT*

no radius-server retransmit

Parameter	Parameter Description	Parameter Value
RETRANSMIT	RADIUS server retries	1-100, default is 3

Command Mode

Global Configuration

Default

3

Usage

The NPB tries all servers, allowing each one to time out before increasing the retransmit count. If the RADIUS server is only a few hops from the NPB, we recommend that you configure the RADIUS server retransmit rate to 5.

Examples

This example shows how to set radius-server retransmit:

```
NPB(config)# radius-server retransmit 10
```

This example shows how to set default radius-server retransmit:

```
NPB(config)# no radius-server retransmit
```

Related Commands

show radius-server

18.36 radius-server timeout

Command Purpose

Use this command to set the interval for which a NPB waits for a server host to reply.
Use the no form of this command to restore the default value.

Command Syntax

radius-server timeout *TIMEOUT*
no radius-server timeout

Parameter	Parameter Description	Parameter Value
TIMEOUT	RADIUS server timeout in seconds	1-1000 seconds. default is 5 seconds

Command Mode

Global Configuration

Default

5

Usage

Use this command to set the number of seconds a NPB waits for a server host to reply before timing out. If the RADIUS server is only a few hops from the NPB, we recommend that you configure the RADIUS server timeout to 15 seconds.

Examples

This example shows how to set radius-server timeout:

```
NPB(config)# radius-server timeout 10
```

This example shows how to set default radius-server timeout:

```
NPB(config)# no radius-server timeout
```

Related Commands

show radius-server

18.37 radius-server key

Command Purpose

Use this command to set the shared encryption key of RADIUS server.
Use the no form of this command to delete the configuration.

Command Syntax

radius-server key (8 |) *STRING*
no radius-server timeout

Parameter	Parameter Description	Parameter Value
8	Specifies a hidden password will follow	-
STRING	RADIUS server key-string	-

Command Mode

Global Configuration

Default

None

Usage

Use this command to set the shared encryption key in a NPB. Shared encryption key is the foundation of communicate between NPB and server. You need set a same shared encryption string in authentication server and NPB.

Examples

This example shows how to set the radius-server key:

```
NPB(config)# radius-server key 123456
```

This example shows how to unset radius-server key:

```
NPB(config)# no radius-server key
```

Related Commands

show radius-server

18.38 re-activate tacacs-server

Command Purpose

Use this command to re-activate the specified tacacs servers.

Command Syntax

re-activate tacacs-server (all | host *IP_ADDR* (auth-port *AUTHDPORT* |) |)

Parameter	Parameter Description	Parameter Value
all	Re-active all tacacs-servers	-
IP_ADDR	Set TACACS server IP address	-
AUTHDPORT	TACACS server port number (default 49)	-

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to re-activate the tacacs server. It's unnecessary for users to wait for the tacacs-server dead time with this command.

Examples

This example shows how to re-activate tacacs-server:

```
NPB# re-activate tacacs-server host 10.0.0.1 auth-port 49
```

Related Commands

tacacs-server host

18.39 tacacs-server host

Command Purpose

Use this command to set tacacs-server parameters.

Use the no form of this command to delete the tacacs server.

Command Syntax

tacacs-server host mgmt-if *IP_ADDR* (auth-port *AUTHDPORT* |) (key (8 |) *AUTHDKEY* |) (retransmit *AUTHDRETRIES* |) (timeout *AUTHDTIMEOUT* |)

no tacacs-server host mgmt-if *IP_ADDR* (auth-port *AUTHDPORT* |)

Parameter	Parameter Description	Parameter Value
mgmt-if	Use management interface	-
IP_ADDR	IP address of TACACS server	-
auth-port AUTHDPORT		-
8	Specifies a hidden password will follow	-
key (8 |) AUTHDKEY		-
retransmit AUTHDRETRIES	TACACS server retries (default 3)	-
timeout AUTHDTIMEOUT	TACACS server timeout in seconds (default 5)	-

Command Mode

Global Configuration

Default

None

Usage

Use this command to set tacacs-server parameters.
Use the no form of this command to delete the tacacs server.

Examples

The following example set tacacs-server 2.1.1.1:

```
NPB(config)# tacacs-server host 2.1.1.1 key mykey
```

The following example deletes tacacs-server 2.1.1.1:

```
NPB(config)# no tacacs-server host 2.1.1.1
```

Related Commands

show tacacs

18.40 username

Command Purpose

Use this command to create a local user account on the NPB.
Use the no form of this command to delete the account.

Command Syntax

username *NAME_STRING*
no username *NAME_STRING*

Parameter	Parameter Description	Parameter Value
NAME_STRING	User name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 31 characters.

Command Mode

Global Configuration

Default

None

Usage

Use this command to create a local user account on the NPB.
Use the no form of this command to delete the account.

Examples

This is a sample output from this command displaying how to add a user named testName:

```
NPB(config)# username testName
```

This is a sample output from this command displaying how to delete a user named testName:

```
NPB(config)# no username testName
```

Related Commands

show usernames

18.41 username password

Command Purpose

Use this command to add username and password.

Command Syntax

username *NAME_STRING* password (8 |) *PASSWORD* (privilege *PRIVILEGE* |)

Parameter	Parameter Description	Parameter Value
NAME_STRING	User name	-
8	Specifies a hidden password will follow	-
PASSWORD	User password string	-
privilege PRIVILEGE	Set user privilege level	-

Command Mode

Global Configuration

Default

None

Usage
Use this command to add username and password.

Examples
This is a sample output from this command displaying how to add a user named testName and with the password of 123456.:
```
NPB(config)# username testName password 123456
```

Related Commands
show usernames

18.42 username assign

Command Purpose
Use this command to assign a public key to a user.
Use the no form of this command to remove the configuration.

Command Syntax
username *NAME_STRING* assign rsa key *RSAKEYNAME*
no username *USERNAME* assign rsa key

Parameter	Parameter Description	Parameter Value
NAME_STRING	User name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 31 characters.
RSAKEYNAME	Key Name	-

Command Mode
Global Configuration

Default
None

Usage
Use this command to assign a public key to a user.
Use the no form of this command to remove the configuration.

Examples
This is a sample output from this command displaying how to assign a key:
```
NPB(config)# username abc assign rsa key importkey
```
This is a sample output from this command displaying how to delete the assigned key:
```
NPB(config)# no username abc assign rsa key
```

Related Commands
username
rsa key

18.43 username privilege

Command Purpose
Use this command to set user privilege level.

Command Syntax
username *NAME_STRING* privilege *PRIVILEGE* (password (8 |) *PASSWORD* | secret *PASSWORD* |)

Parameter	Parameter Description	Parameter Value
NAME_STRING	User name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 31 characters.
PRIVILEGE	Set user privilege level	-
8	Specifies a hidden password will follow	-
PASSWORD	User password string	-
secret PASSWORD	User secret string	-

Command Mode
Global Configuration

Default
None

Usage
Use this command to set user privilege level.

Examples
This is a sample output from this command displaying how to add a user named testName and with the privilege 3 and password of 12345.:

```
NPB(config)# username u1 privilege 3 secret 12345
```

Related Commands
show usernames

18.44 username secret

Command Purpose
Use username command to create a local user account with secret password.

Command Syntax
username *NAME_STRING* secret *PASSWORD*

Parameter	Parameter Description	Parameter Value
NAME_STRING	User name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 31 characters.
secret PASSWORD	User secret string	-

Command Mode
Global Configuration

Default
None

Usage
Use username command to create a local user account with secret password.

Examples
This is a sample output from this command displaying how to add a user named u2 and with the secret 23.:

```
NPB(config)# username u2 secret 23
```

Related Commands
show usernames

18.45 re-username

Command Purpose
Use re-username command to modify local user account on the NPB.

Command Syntax
re-username *OLD_NAME NEW_NAME*

Parameter	Parameter Description	Parameter Value
OLD_NAME	Old user name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 31 characters.
NEW_NAME	New user name	String begin with [a-zA-Z],valid character is among [0-9A-Za-z.-_], up to 31 characters.

Command Mode
Global Configuration

Default
None

Usage
Use re-username command to modify local user account on the NPB.

Examples

The following example shows how to change user account's name:

```
NPB(config)# re-username oldUser newUser
```

Related Commands

show usernames

18.46 enable password

Command Purpose

Use this command to set the password which is needed when user enter Privileged EXEC mode.

Command Syntax

enable password (8 |) *PASSWORD*

no enable password

Parameter	Parameter Description	Parameter Value
8	Specifies a hidden password will follow	-
PASSWORD	Enable password string	-

Command Mode

Global Configuration

Default

None

Usage

If this command is set, user need to provide the password when enter Privileged EXEC mode.

Examples

The following example shows how to set the password:

```
NPB(config)# enable password 654321
NPB(config)# exit
NPB# disable
NPB> enable

Password:
NPB#
```

The following example shows how to unset the password:

```
NPB(config)# no enable password
```

Related Commands

enable

disable

18.47 enable password privilege

Command Purpose

Use this command to set the password which is needed when user enter Privileged EXEC mode.

Use the no form of this command to unset the password when user enter Privileged EXEC mode.

Command Syntax

enable password privilege *PRIVILEGE* (8 |) *PASSWORD*

no enable password privilege *PRIVILEGE*

Parameter	Parameter Description	Parameter Value
PRIVILEGE	Set user privilege level	-
8	Specifies a hidden password will follow	-
PASSWORD	Enable password string	-

Command Mode

Global Configuration

Default

None

Usage

If this command is set, user need to provide the password when enter Privileged EXEC mode.

Examples

The following example shows how to set the password:

```
NPB(config)# enable password privilege 2 abc123
NPB(config)# exit
NPB# disable
NPB> enable 2

Password:
NPB#
```

The following example shows how to unset the password:

```
NPB(config)# no enable password privilege 2
```

Related Commands

enable
disable

18.48 service password-encryption

Command Purpose

Use this command to set up the miscellaneous service encrypt system passwords.
Use the no form of this command to unset service encrypt system passwords.

Command Syntax

service password-encryption
no service password-encryption

Command Mode

Global Configuration

Default

Not encrypt

Usage

After use this command, the password in the display result of “show current-configuration” should be encrypted.
After use the no form of this command, the newly added password in the display result of “show current-configuration” should be plain text and the existing password should still be encrypted.

Examples

The following example shows how to set service password-encryption:

```
NPB(config)# service password-encryption
```

The following example shows how to unset service password-encryption:

```
NPB(config)# no service password-encryption
```

Related Commands

show current-configuration

18.49 aaa new-model

Command Purpose

Use this command to enable the authentication, authorization, accounting (AAA) access control model.
Use the no form of this command to disable the authentication, authorization, accounting (AAA) access control model.

Command Syntax

aaa new-model
no aaa new-model

Command Mode

Global Configuration

Default

Disabled

Usage

Use this command to enable the authentication, authorization, accounting (AAA) access control model.
Use the no form of this command to disable the authentication, authorization, accounting (AAA) access control model.

Examples

The following example shows how to enable AAA access control model:

```
NPB(config)# aaa new-model
```
The following example shows how to disable AAA access control model:
```
NPB(config)# no aaa new-model
```
Related Commands
show aaa status

18.50 aaa authentication login

Command Purpose
Use the aaa authentication login configuration command to set authentication, authorization, accounting (AAA) authentication at login.
Use the no form of this command to delete the configuration.

Command Syntax
aaa authentication login (default | *AUTHLISTNAME*) (enable |) (line |) (radius |) (tacplus |) (local |) (none |)
no aaa authentication login (default | *AUTHLISTNAME*)

Parameter	Parameter Description	Parameter Value
default	Default method list	-
AUTHLISTNAME	Named authentication list (a-zA-Z0-9._-)	-
enable	Enable password	-
line	Line password	-
radius	RADIUS server	-
tacplus	TACACS+	-
local	Local username	-
none	No authentication	-

Command Mode
Global Configuration

Default
None

Usage
Use the aaa authentication login configuration command to specify one or more AAA methods.

Examples
The following example shows how to set authentication at login:
```
NPB(config)# aaa authentication login default local radius none
```
The following example shows how to delete authentication:
```
NPB(config)# no aaa authentication login default
```
Related Commands
show aaa method-lists authentication

18.51 aaa authorization exec

Command Purpose
Use the aaa authorization exec configuration command to set authentication, authorization, accounting (AAA) authorization at login.

Command Syntax
aaa authorization exec (default | *AUTHLISTNAME*) (none |) (radius |) (local |) (tacplus |)
no aaa authorization exec (default | *AUTHLISTNAME*)

Parameter	Parameter Description	Parameter Value
default	Default method list	-
AUTHLISTNAME	Named authentication list (a-zA-Z0-9._-)	-
none	No authentication	-
radius	RADIUS server	-

local	Local username	-
tacplus	TACACS+	-

Command Mode
Global Configuration

Default
None

Usage
Use the aaa authorization exec configuration command to Set authentication, authorization, accounting (AAA) authorization at login

Examples
The following example shows how to set authorization exec:

```
NPB#                                    configure                                    terminal
NPB(config)# aaa authorization exec default tacplus none
```

Related Commands
show aaa method-lists authorization

18.52 aaa accounting exec

Command Purpose
Use this command to set authentication, authorization, accounting (AAA) accounting at login.
Use the no form of this command to delete the configuration.

Command Syntax
aaa accounting exec (default | *AUTHLISTNAME*) (start-stop (radius | tacplus | none) * | stop-only (radius | tacplus | none) * | none)
no aaa accounting exec (default | *AUTHLISTNAME*)

Parameter	Parameter Description	Parameter Value
default	Default method list	-
AUTHLISTNAME	Named authentication list (a-zA-Z0-9._-)	-
start-stop	Send accounting request when user login and logout	-
stop-only	Send accounting request when user logout	-
radius	RADIUS server	-
tacplus	TACACS+	-
none	No authentication	-

Command Mode
Global Configuration

Default
None

Usage
Use this command to set authentication, authorization, accounting (AAA) accounting at login.

Examples
The following example shows how to set accounting exec:

```
NPB#                                    configure                                    terminal
NPB(config)# aaa accounting exec default start-stop tacplus
```

The following example shows how to delete accounting:

```
NPB#                                    configure                                    terminal
NPB(config)# no aaa accounting exec default
```

Related Commands
show aaa method-lists accounting

18.53 aaa accounting commands

Command Purpose

Use this command to set authentication, authorization, accounting (AAA) accounting for commands.
Use the no form of this command to delete the configuration.

Command Syntax

aaa accounting commands (default | *AUTHLISTNAME*) (tacplus | none) *
no aaa accounting commands (default | *AUTHLISTNAME*)

Parameter	Parameter Description	Parameter Value
default	Default method list	-
AUTHLISTNAME	Named authentication list (a-zA-Z0-9._-)	-
tacplus	TACACS+	-
none	No authentication	-

Command Mode

Global Configuration

Default

None

Usage

Use this command to set authentication, authorization, accounting (AAA) accounting for commands.

Examples

The following example shows how to set accounting commands:

```
NPB#                                                    configure                                               terminal
NPB(config)# aaa accounting commands default tacplus
```

The following example shows how to delete accounting for commands:

```
NPB#                                                    configure                                               terminal
NPB(config)# no aaa accounting commands default
```

Related Commands

show aaa method-lists accounting

18.54 aaa privilege mapping

Command Purpose

Use this command to set the mapping range in AAA server and NPB.
Use the no form of this command to restore the default mapping.

Command Syntax

aaa privilege mapping *AAA_PRIVILEGE1 AAA_PRIVILEGE2 AAA_PRIVILEGE3*
no aaa privilege mapping

Parameter	Parameter Description	Parameter Value
AAA_PRIVILEGE1	Max server privilege mapping to NPB privilege 1(default is 0)	-
AAA_PRIVILEGE2	Max server privilege mapping to NPB privilege 2(default is 1)	-
AAA_PRIVILEGE3	Max server privilege mapping to NPB privilege 3(default is 10)	-

Command Mode

Global Configuration

Default

0, 1, 10

Usage

0: The server privilege 0 mapping to NPB level 1
1: The server privilege 1 mapping to NPB level 2
9: The server privilege 2-9 mapping to NPB level 3
Other: The server privilege 10-15 mapping to NPB level 4

Examples

The following example shows how to set the mapping range:

```
NPB(config)# aaa privilege mapping 0 1 14
```

The following example shows how to set default mapping range:

```
NPB# configure terminal
NPB(config)# no aaa privilege mapping
```

Related Commands

show aaa privilege mapping

18.55 debug aaa

Command Purpose

Use this command to enable debugging aaa.

Use the no form of this command to disable debugging aaa.

Command Syntax

debug aaa (all | packet | event | protocol | timer)

no debug aaa (all | packet | event | protocol | timer)

Parameter	Parameter Description	Parameter Value
all	Enable to report all aaa debug messages	-
packet	Enable to report aaa debug messages for sending and receiving packets	-
event	Enable to report aaa debug messages for events	-
protocol	Enable to report aaa debug messages for protocol states	-
timer	Enable to report aaa debug messages for timer	-

Command Mode

Privileged EXEC

Default

Disabled

Usage

None

Examples

In the following example shows how to enable debugging aaa all:

```
NPB# debug aaa all
```

In the following example shows how to disable debugging aaa all:

```
NPB# no debug aaa all
```

Related Commands

show debugging

18.56 exec-timeout

Command Purpose

Use this command to set console timeout value.

Use the no form of this command to restore the default value.

Command Syntax

exec-timeout *ETIMEOUTMIN* (*ETIMEOUTSEC* |)

no exec-timeout

Parameter	Parameter Description	Parameter Value
ETIMEOUTMIN	Timeout value in minute.	0-35791
ETIMEOUTSEC	Timeout value in second	0- 2147483

Command Mode
Line Configuration

Default
10

Usage
None

Examples
The following example shows how to set console exec-timeout to 2 minutes 30 seconds:

```
NPB#                                configure                                terminal
NPB(config)#                        line                    console          0
NPB(config-line)# exec-timeout 2 30
```

The following example shows how to set console exec-timeout to default value:

```
NPB#                                configure                                terminal
NPB(config)#                        line                    console          0
NPB(config-line)# no exec-timeout
```

Related Commands
show console

18.57 login

Command Purpose
Use this command to enable console password checking, you can choose local password checking.
Use the no form of this command to disable console password checking.

Command Syntax
login (local |)
no login (local |)

Parameter	Parameter Description	Parameter Value
local	Local username	-

Command Mode
Line Configuration

Default
no password checking

Usage
Use this command to enable console password checking, you can choose local password checking.
Use the no form of this command to disable console password checking.

Examples
The following example shows how to set console local password checking enable:

```
NPB#                                configure                                terminal
NPB(config)#                        line                    console          0
NPB(config-line)# login local
```

The following example shows how to set console local password checking disable:

```
NPB#                                configure                                terminal
NPB(config)#                        line                    console          0
NPB(config-line)# no login local
```

Related Commands
show console

18.58 privilege level

Command Purpose
Use this command to set console privilege level for line.
Use the no form of this command to restore the default value.

Command Syntax
privilege level *PRIVILEGE*
no privilege level

Parameter	Parameter Description	Parameter Value

PRIVILEGE	Default privilege level for line	-

Command Mode
Line Configuration

Default
1

Usage
Use this command to set console privilege level for line.
Use the no form of this command to restore the default value.

Examples
The following example shows how to set console privilege level for line to 2:

```
NPB#                          configure                    terminal
NPB(config)#                  line                console    0
NPB(config-line)# privilege level 2
```

The following example shows how to set console privilege level for line to default value:

```
NPB#                          configure                    terminal
NPB(config)#                  line                console    0
NPB(config-line)# no privilege level
```

Related Commands
show console

18.59 line-password

Command Purpose
Use this command to set console line-password specifies a hidden password will follow or user password string.
Use the no form of this command to unset console line-password.

Command Syntax
line-password (8 |) *NAME_STRING*
no line-password

Parameter	Parameter Description	Parameter Value
8	Specifies a hidden password will follow	-
NAME_STRING	User password string	-

Command Mode
Line Configuration

Default
No console line-password

Usage
Use this command to set console line-password specifies a hidden password will follow or user password string.
Use the no form of this command to unset console line-password.

Examples
The following example shows how to set console line-password specifies a hidden password will follow:

```
NPB#                          configure                    terminal
NPB(config)#                  line                console    0
NPB(config-line)# line-password 8 test
```

The following example shows how to unset console line-password:

```
NPB#                          configure                    terminal
NPB(config)#                  line                console    0
NPB(config-line)# no line-password
```

Related Commands
show console

18.60 stopbits

Command Purpose
Use this command to set console sync line stop bits.
Use no form of this command to set console sync line stop bits to default value.

Command Syntax

stopbits (1 | 2)
no stopbits

Parameter	Parameter Description	Parameter Value
1	Set 1 bit stop bit	-
2	Set 2 bits stop bits	-

Command Mode

Line Configuration

Default

One-bit stop

Usage

None

Examples

The following example shows how to set console sync line stop bits one-bit stop:

```
NPB# configure terminal
NPB(config)# line console 0
NPB(config-line)# stopbits 1
```

The following example shows how to set console sync line stop bits to default value:

```
NPB# configure terminal
NPB(config)# line console 0
NPB(config-line)# no stopbits
```

Related Commands

show console

18.61 databits

Command Purpose

Use this command to set console number of data bits.
Use the no form of this command to set console number of data bits per character to default value.

Command Syntax

databits (7 | 8)
no databits

Parameter	Parameter Description	Parameter Value
7	7-bit databits.	-
8	8-bit databits.	-

Command Mode

Line Configuration

Default

8-bit databits

Usage

Use this command to set console number of data bits.
Use the no form of this command to set console number of data bits per character to default value.

Examples

The following example shows how to set console number of data bits per character to 7-bit databits:

```
NPB# configure terminal
NPB(config)# line console 0
NPB(config-line)# databits 7
```

Related Commands

show console

18.62 parity

Command Purpose

Use this command to set console terminal parity.
Use the no form of this command to restore the default value.

Command Syntax

parity (even | odd | none)
no parity

Parameter	Parameter Description	Parameter Value
even	Parity mode even	-
odd	Parity mode odd	-
none	No parity	-

Command Mode

Line Configuration

Default

No parity

Usage

Use this command to set console terminal parity.
Use the no form of this command to restore the default value

Examples

The following example shows how to set console terminal parity type odd:

```
NPB#                          configure                    terminal
NPB(config)#          line                  console                0
NPB(config-line)# parity odd
```

The following example shows how to set console terminal parity type to default value:

```
NPB#                          configure                    terminal
NPB(config)#          line                  console                0
NPB(config-line)# no parity
```

Related Commands

line console
show console

18.63 speed

Command Purpose

Use this command to set the transmit and receive speeds of console terminal.
Use the no form of this command to restore the default value.

Command Syntax

speed (115200 | 57600 | 38400 | 19200 | 9600 | 4800 | 2400 | 1200 | 600)
no speed

Command Mode

Line Configuration

Default

115200

Usage

None

Examples

The following is an example of set console terminal speed to 115200:

```
NPB(config)#          line                  console                0
NPB(config-line)# speed 115200
```

The following is an example of set console terminal speed to default value:

```
NPB(config)#          line                  console                0
NPB(config-line)# no speed
```

Related Commands

show console

18.64 authorization exec

Command Purpose

Use this command to enable authentication, authorization, accounting (AAA) authorization for logins.
Use the no form of this command to restore the default value.

Command Syntax

authorization exec (default | *LISTNAME*)
no authorization exec

Parameter	Parameter Description	Parameter Value
default	Default authorization list	-
LISTNAME	An authorization list with this name (a-zA-Z0-9._-)	-

Command Mode

Line Configuration

Default

None

Usage

Use this command to enable authentication, authorization, accounting (AAA) authorization for logins.
Use the no form of this command to restore the default value.

Examples

The following example shows how to enable authorization for logins:

```
NPB# configure terminal
NPB(config)# line vty 0 7
NPB(config-line)# authorization exec default
```

The following example shows how to set authorization to default method list:

```
NPB# configure terminal
NPB(config)# line vty 0 7
NPB(config-line)# no authorization exec
```

Related Commands

show vty

18.65 accounting exec

Command Purpose

Use this command to enable authentication, authorization, accounting (AAA) accounting for logins.
Use the no form of this command to restore the default value.

Command Syntax

accounting exec (default | *LISTNAME*)
no accounting exec

Parameter	Parameter Description	Parameter Value
default	Default accounting list	-
LISTNAME	An accounting list with this name (a-zA-Z0-9._-)	-

Command Mode

Line Configuration

Default

None

Usage

Use this command to enable authentication, authorization, accounting (AAA) accounting for logins.
Use the no form of this command to restore the default value.

Examples

The following example shows how to enable accounting for logins:

```
NPB# configure terminal
NPB(config)# line vty 0 7
NPB(config-line)# accounting exec default
```

The following example shows how to set accounting exec to default method list:

```
NPB# configure terminal
NPB(config)# line vty 0 7
NPB(config-line)# no accounting exec
```

Related Commands
show vty

18.66 accounting commands

Command Purpose
Use this command to enable accounting for commands.

Command Syntax
accounting commands (default | *LISTNAME*)
no accounting commands

Parameter	Parameter Description	Parameter Value
default	Default accounting list	-
LISTNAME	An accounting list with this name (a-zA-Z0-9._-)	-

Command Mode
Line Configuration

Default
None

Usage
Use this command to enable accounting for commands.

Examples
The following example shows how to enable accounting for commands:

```
NPB# configure terminal
NPB(config)# line vty 0 7
NPB(config-line)# accounting commands default
```

Related Commands
show vty

18.67 end

Command Purpose
To end the current configuration session and return to Privileged EXEC mode, use the end command in global configuration mode.

Command Syntax
end

Command Mode
All Configuration Mode

Default
None

Usage
This command will bring you back to Privileged EXEC mode regardless of what configuration mode or configuration sub-mode you are in.
This global configuration command can be used in any configuration mode.
Use this command when you are done configuring the system and you want to return to EXEC mode to perform verification steps.

Examples
In the following example, the end command is used to exit from interface configuration mode and return to Privileged EXEC mode:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# end
NPB#
```

Related Commands
None

18.68 ip access-class

Command Purpose
Use this command to set vty IPv4 ACL.Use the no form of this command to remove ACL from vty.

Command Syntax

ip access-class *NAME_STRING* in

no ip access-class in

Parameter	Parameter Description	Parameter Value
NAME_STRING	IP ACL NAME	The initial character name should be a-z, A-Z, 0-9 or ._-, character only can be 0-9A-Za-z.-_ and the max length is 20

Command Mode

Line Configuration

Default

None

Usage

None

Examples

The following example shows how to configure IPv4 ACL on vty:

```
NPB#                                configure                   terminal
NPB(config)#                line                    vty                 1
NPB(config-line)# ip access-class a4 in
```

Related Commands

ip access-list

19 SFLOW Commands

19.1 sflow enable

Command Purpose

Use this command to enable sFlow globally.
Use the no form of this command to disable sFlow.

Command Syntax

sflow enable
no sflow enable

Command Mode

Global Configuration

Default

Disabled

Usage

Before any other sFlow command can be configured, sFlow services must be enabled globally. Use the no parameter with this command to remove all sFlow configurations and disable sFlow globally.

Examples

This example shows how to enable sFlow services globally:

```
NPB(config)# sflow enable
```

This example shows how to disable sFlow services globally:

```
NPB(config)# no sflow enable
```

Related Commands

show sflow

19.2 sflow agent

Command Purpose

Use this command to configure sFlow agent.
Use the no form of this command to delete the sFlow agent.

Command Syntax

sflow agent ip *IP_ADDR*
no sflow agent ip

Parameter	Parameter Description	Parameter Value
IP_ADDR	IPv4 address	-

Command Mode

Global Configuration

Default

0.0.0.0

Usage

Use this command to configure IP address for sflow agent. If not configured, sflow agent IP address will be 0.0.0.0.

Examples

This example shows how to configure agent with IP address 10.0.0.254:

```
NPB(config)# sflow agent ip 10.0.0.254
```

This example shows how to configure agent with IP address 0.0.0.0:

```
NPB(config)# no sflow agent ip
```

Related Commands

show sflow

19.3 sflow collector

Command Purpose

Use this command to configure sFlow collector.

Use the no form of this command to delete the sFlow collector.

Command Syntax

sflow collector mgmt-if *IP_ADDR* (*UDP_PORT* |)
no sflow collector *IP_ADDR*

Parameter	Parameter Description	Parameter Value
IP_ADDR	Collector IPv4 address	-
UDP_PORT	Collector UDP port number	1-65535, default is 6343

Command Mode

Global Configuration

Default

Default source ip is the ip address of interface which is connected with sflow collector

Usage

Use this command to add a collector by specifying the combination of IP address and UDP port and source IP address. Only up to two unique combinations can be allowed to add.

Examples

This example shows how to add a collector:

```
NPB(config)# sflow collector mgmt-if 10.0.0.254 3000
```

This example shows how to remove a collector:

```
NPB#                                configure                                terminal
NPB(config)# no sflow collector 10.0.0.254 3000
```

Related Commands

show sflow

19.4 sflow counter interval

Command Purpose

Use this command to configure sFlow polling-interval for counter sample.
Use the no form of this command to restore the default value.

Command Syntax

sflow counter interval *INTERVAL_VAL*
no sflow counter interval

Parameter	Parameter Description	Parameter Value
INTERVAL_VAL	Interval value in second	1-2000 seconds， default is 20 seconds.

Command Mode

Global Configuration

Default

20

Usage

Use this command to set sFlow polling-interval for counter sample. Use the no parameter with this command to restore to the default value. Default interval value is 20 seconds.

Examples

This example shows how to set sFlow polling-interval to 10 second:

```
NPB(config)# sflow counter interval 10
```

This example shows how to set sFlow polling-interval to default value:

```
NPB(config)# no sflow counter interval
```

Related Commands

show sflow

19.5 sflow counter-sampling enable

Command Purpose

Use this command to enable counter sampling on specified port.
Use the no form of this command to disable counter sampling.

Command Syntax

sflow counter-sampling enable
no sflow counter-sampling enable

Command Mode

Interface Configuration

Default

Disabled

Usage

Use this command to enable counter sampling on specified port. This command can only be configured on a port which is not a link-agg group member. The port can be either a physical port or a link-agg port.

Examples

This example shows how to set sFlow polling-interval to 10 second::

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# sflow counter-sampling enable
```

This example shows how to disable sFlow counter sampling on interface eth-0-1:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# no sflow counter-sampling enable
```

Related Commands

show sflow

19.6 sflow flow-sampling rate

Command Purpose

Use this command to configure flow sampling rate.
Use the no form of this command to restore the default value.

Command Syntax

sflow flow-sampling rate *RATE*
no sflow flow-sampling rate

Parameter	Parameter Description	Parameter Value
RATE	Sample rate value,	must be a power of 2. Range is 1-32768, default is 32768.

Command Mode

Interface Configuration

Default

32768

Usage

Use this command to set sFlow packet sampling rate. The rate value is packet number. When the value is 32768, one packet will be sampled when 32768 packets are passed, sFlow uses CPU resources to collect samples and send samples to the collector. If a low sampling rate is set, CPU utilization can become high. To protect CPU from overwhelming, exceeded flow samples would be dropped. If a sampling rate less than default value is configured, a prompt will be given to info the potential of involving a high CPU utilization. This command can only be configured on a port which is not a link-agg group member. The port can be either a physical port or a link-agg port.

Examples

This example shows how to enable sFlow counter sampling on interface eth-0-1:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# sflow flow-sampling rate 2048
% Warning: sFlow sampling requires high CPU usage, especially with a low rate. Suggested rate not less than 32768.
```

This example shows how to disable sFlow counter sampling on interface eth-0-1:

```
NPB(config)# interface eth-0-1
NPB(config-if-eth-0-1)# no sflow flow-sampling rate
```

Related Commands

show sflow

19.7 sflow flow-sampling enable

Command Purpose

Use this command to enable packet sampling on individual port.
Use the no form of this command to disable packet sampling.

Command Syntax

sflow flow-sampling enable (input | output | both)
no sflow flow-sampling enable (input | output | both)

Parameter	Parameter Description	Parameter Value
input	Sampling for input packets	-
output	Sampling for output packets	-
both	Sampling for packets on both direction	-

Command Mode

Interface Configuration

Default

Disabled

Usage

Use this command to enable packet sampling on individual port. This command can only be configured on a port which is not a link-agg group member. The port can be either a physical port or a link-agg port.

Examples

This example shows how to enable input packet sampling on route port eth-0-1:

```
NPB#                                    configure                terminal
NPB(config)#                              interface              eth-0-1
NPB(config-if-eth-0-1)# sflow flow-sampling enable input
```

Related Commands

show sflow

19.8 debug sflow

Command Purpose

Use this command to turn on the debug NPBes of sflow module.
Use the no form of this command to turn off the debug NPBes of sflow module.

Command Syntax

debug sflow (all | packet | counter | sample)
no debug sflow (all | packet | counter | sample)

Parameter	Parameter Description	Parameter Value
all	Enable to report all debug messages	-
counter	Enable to report sflow debug messages for counters	-
packet	Enable to report sflow debug messages for sending and receiving packets	-
sample	Enable to report sflow debug messages for sampling	-

Command Mode

Privileged EXEC

Default

Disabled

Usage

Use this command to turn on the debug NPBes of sflow module.

Examples

In the following example shows how to enable debugging sflow all:

```
NPB# NPB# debug sflow all
```

Related Commands
show debugging

19.9 show sflow

Command Purpose
Use this command to show the running information of sflow.

Command Syntax
show sflow

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to show the running information of sflow.

Examples
This example shows how to show the sflow running information:

```
NPB# show sflow

sFlow Version: 4
sFlow Global Information:
 Agent IPv4 address : 10.0.0.254
 Counter Sampling Interval : 10 seconds
 Collector 1:
  IPv4 Address: 10.0.0.254
  Port: 3000
sFlow Port Information:
 Flow-Sample Flow-Sample
 Port Counter Flow Direction Rate
 --------------------------------------------------------
 eth-0-7 Enable Enable Input 2048
```

Related Commands
sflow enable
sflow agent

20 GLOBAL Commands

20.1 show debugging

Command Purpose

To display the debugging status, use the show debugging command in EXEC mode.

Command Syntax

show debugging (aaa | sflow |) (detail |)

Parameter	Parameter Description	Parameter Value
aaa	Display the states of aaa debugging	-
sflow	Display the states of sflow debugging	-
detail	Display the detailed information of debugging	-

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to display the debugging status.

Examples

The following is sample output from the show debugging aaa command:

```
NPB# show debugging aaa detail

Module Feature Type Status
------------+----------------+--------------------+------
auth aaa event on
aaa packet on
aaa protocol off
aaa timer on
```

Related Commands

debug aaa
debug sflow

20.2 no debug all

Command Purpose

Use this command to turn off all debugging NPBs.

Command Syntax

no debug all

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to turn off all debugging NPBs.

Examples

In the following example shows how to disable all debugging:

```
NPB# no debug all
```

Related Commands

show debugging

20.3 show history

Command Purpose

To display the history command lines, use the show history command in EXEC mode.

Command Syntax

show history

Command Mode

Privileged EXEC

Default

none

Usage

Use this command to display the history command lines.

Examples

This example shows how to display history commands information of device:

```
NPB# show history

  1 show version
  2 debug sflow all
  3 no debug sflow all
  4  show history 1  show history
```

Related Commands

None

20.4 show running-config

Command Purpose

To display the current operating configuration, use the show running-config command in EXEC mode.

Command Syntax

show running-config

Command Mode

Privileged EXEC

Default

none

Usage

Use this command to display the current operating configuration.

Examples

This example shows how to display current operating configuration of device:

```
NPB# show running-config

hostname NPB
timestamp sync systime
username admin privilege 4 password admin
username test privilege 4 password test
!
!
logging server enable
logging merge disable
logging merge timeout 23
!
ntp authentication enable
!
ntp server mgmt-if 1.1.1.1
ntp server mgmt-if 10.10.25.8
ntp server mgmt-if 192.16.22.44 version 2
!
snmp-server enable
snmp-server system-contact admin@example.com
!
snmp-server view view1 included .1.2.3.4 mask f
```

```
!
snmp-server community sysname read-write
!
snmp-server trap target-address mgmt-if 10.10.27.232 community sysname
!
management ip address 10.10.39.104/23
management route add gateway 10.10.39.254
!
port-channel load-balance hash-arithmetic crc
port-channel load-balance set vxlan-vni
port-channel load-balance set inner-dst-mac
!
flow f1
!
flow f2
!
sflow enable
sflow agent ip 10.0.0.254
sflow counter interval 10
!
interface eth-0-1
 description TenGigabitEthernet
 speed 1000
 shutdown
!
interface eth-0-2
 shutdown
!
interface eth-0-3
 shutdown
 static-channel-group 10
!
interface eth-0-4
 shutdown
 static-channel-group 10
!
interface eth-0-5
 shutdown
 static-channel-group 5
!
interface eth-0-6
 shutdown
!
interface eth-0-7
 shutdown
 sflow counter-sampling enable
 sflow flow-sampling enable input
 sflow flow-sampling rate 2048
!
interface eth-0-8
 shutdown
!
interface eth-0-9
 shutdown
!
interface eth-0-10
 shutdown
!
interface eth-0-11
!
interface eth-0-12
```

```
!
interface eth-0-13
!
interface eth-0-14
!
interface eth-0-15
!
interface eth-0-16
!
interface eth-0-17
!
interface eth-0-18
!
interface eth-0-19
!
interface eth-0-20
!
interface eth-0-21
!
interface eth-0-22
!
interface eth-0-23
!
interface eth-0-24
!
interface eth-0-25
!
interface eth-0-26
!
interface eth-0-27
!
interface eth-0-28
!
interface eth-0-29
!
interface eth-0-30
!
interface eth-0-31
!
interface eth-0-32
!
interface eth-0-33
!
interface eth-0-34
!
interface agg5
 description LinkAgg5
!
interface agg10
!
tap-group tap1 1
 ingress eth-0-1 flow f1
 egress eth-0-9
!
tap-group tap2 2
 ingress eth-0-21
 egress eth-0-22
!
tap-group g1 3
 ingress eth-0-33
!
```

```
line                                console                                 0
 privilege                            level                                 4
 no                                                                         line-password
 no                                                                         login
line                                vty                          0          7
 exec-timeout                         35791                                 0
 privilege                            level                                 4
 no                                                                         line-password
 no login
```

Related Commands

None

20.5 md5sum

Command Purpose

To calculate the md5sum of the file.

Command Syntax

md5sum *FILENAME*

Parameter	Parameter Description	Parameter Value
FILENAME	Specify the file name	-

Command Mode

Privileged EXEC

Default

none

Usage

Use this command to calculate the md5sum of the file.

Examples

This example shows how to calculate the md5sum of the file:

```
NPB#        FSOS-T5850-NPB-v3.0.8
```

Related Commands

None

21 MANAGEMENT Commands

21.1 show diagnostic-information

Command Purpose

Use this command to display the diagnostic information of the system.

Command Syntax

show diagnostic-information

Command Mode

Privileged EXEC

Default

None

Usage

Diagnostic information includes “show version” information, “show clock” information, etc.
The result is usually very long and user can print the result into a file on the flash.

Examples

The following example shows how to display the diagnostic information:

```
NPB# show diagnostic-information
```

Related Commands

show version
show clock

21.2 show services

Command Purpose

To display the networking services, use the show services command in privileged EXEC mode.

Command Syntax

show services

Command Mode

Privileged EXEC

Default

None

Usage

This command is used to display networking services of the NPB.

Examples

In the following example shows how to display networking services of the NPB:

```
NPB#                                    show                                    services

Networking                              services                                configuration:
Service                 Name            Status          Port                    Protocol
----------------+-------------+----------+----------
http                    enable          80                      TCP
telnet                  enable          23                      TCP
ssh                     enable          22                      TCP
snmp disable 161 UDP
```

Related Commands

None

21.3 show services rpc-api

Command Purpose

Command Syntax

show services rpc-api

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
```
NPB# show services rpc-api

RPC-API service configuration:
Server State : disable
Port : 80
Authentication Mode : none
SSL State : disable
```

Related Commands
service rpc-api

21.4 hostname

Command Purpose
To specify or modify the host name for the network server, use the hostname command in global configuration mode.
Use the no form of this command to reset the default value.

Command Syntax
hostname *NAME_STRING*
no hostname

Parameter	Parameter Description	Parameter Value
NAME_STRING	This system's network name	Up to 63 characters.

Command Mode
Global Configuration

Default
NPB

Usage
The host name is used in prompts and default configuration filenames.
The name must also follow the rules for ARPANET host names. They must start with a letter, and have as interior characters only letters, digits, hyphens, and underline. Names must be 63 characters or fewer.

Examples
The following example changes the host name to DUT1:
```
NPB(config)# hostname DUT1
```
The following example changes the host name to default:
```
DUT1(config)# no hostname
```

Related Commands
None

21.5 format

Command Purpose
To format file system.

Command Syntax
format (system | boot | *udisk:*)

Parameter	Parameter Description	Parameter Value
system	The system partition	-
boot	The boot partition	-
udisk：	The USB mass storage device (MSDOS file system)	-

Command Mode
Global Configuration

Default
None

Usage
Format the USB mass storage device (MSDOS file system)

Examples
The following shows an example to format USB mass storage device:

```
NPB(config)# format udisk:

WARNING: All data on udisk: will be lost!!!
And format operation may take a while. Are you sure to process with format? [yes/no]: yes
```

Related Commands
umount udisk:

21.6 umount udisk:

Command Purpose
To uninstall the USB mass storage device before plug out it from the NPB.

Command Syntax
umount *udisk:*

Command Mode
Global Configuration

Default
None

Usage
USB mass storage device must exist in the system. You can use the “umount” command to uninstall the USB mass storage device.

Examples
The following example umount USB mass storage device:

```
NPB(config)# umount udisk:
```

Related Commands
format udisk:

21.7 reset factory-config

Command Purpose
To reset factory configuration

Command Syntax
reset factory-config

Command Mode
Privileged EXEC

Default
None

Usage
The flash/boot/.factory-config.conf needs to exist for resetting factory configuration.

Examples
The following shows an example to reset factory configuration:

```
NPB# reset factory-config

Startup-config will be overwritten with factory-config. Continue? [yes/no]:y
```

Related Commands
None

21.8 management ip address dhcp

Command Purpose
Use this command to set the management IP address on the NPB from the dhcp protocol.

To remove the management IP address from the dhcp protocol, use the no form of this command.

Command Syntax

management ip address dhcp
no management ip address dhcp

Command Mode

Global Configuration

Default

None

Usage

User cannot connect to the device via telnet and only console port is available for management after removing the IP address.

Examples

The following example sets the management ipv4 address from dhcp protocol:

```
NPB(config)# management ip address dhcp
```

The following example unsets the management ipv4 address from dhcp protocol:

```
NPB(config)# no management ip address dhcp
```

Related Commands

management ip address

21.9 management ip address

Command Purpose

Use this command to set the management IP address on the NPB.
To remove the management IP address, use the no form of this command.

Command Syntax

management ip address *IP_ADDR_MASK*
no management ip address

Parameter	Parameter Description	Parameter Value
IP_ADDR_MASK	IP address with mask length	In A.B.C.D/M format

Command Mode

Global Configuration

Default

None

Usage

User cannot connect to the device via telnet and only console port is available for management after removing the IP address.

Examples

The following example sets the management ipv4 address:

```
NPB(config)# management ip address 10.10.39.104/23
```

The following example unsets the management ipv4 address:

```
NPB(config)# no management ip address
```

Related Commands

management route gateway

21.10 management ipv6 address

Command Purpose

Use this command to set the management IPv6 address on the NPB.
To remove the management IPv6 address, use the no form of this command.

Command Syntax

management ipv6 address *IPV6_ADDR_MASK*
no management ipv6 address

Parameter	Parameter Description	Parameter Value
IPV6_ADDR_MASK	IPv6 address with mask length	In X:X::X:X/M format

Command Mode

Global Configuration

Default
None

Usage
User cannot connect to the device via telnet and only console port is available for management after removing the IP address.

Examples
The following example sets the management ipv6 address:
```
NPB(config)# management ipv6 address 2000::1/64
```
The following example unsets the management ipv6 address:
```
NPB(config)# no management ipv6 address
```

Related Commands
management ipv6 route gateway

21.11 management route gateway

Command Purpose
Use this command to set the gateway on the NPB for management ip.
Use no form of this command to delete the gateway on the NPB for management ip.

Command Syntax
management route (add |) gateway *IP_ADDR*
no management route gateway

Parameter	Parameter Description	Parameter Value
add	Add a gateway address	-
IP_ADDR	IP address	-

Command Mode
Global Configuration

Default
None

Usage
Use this command to set the gateway on the NPB for management ip.
Use no form of this command to delete the gateway on the NPB for management ip.

Examples
The following example sets the gateway of 192.168.100.254 for the NPB:
```
NPB(config)# management route add gateway 192.168.100.254
```
The following example unsets the gateway of 192.168.100.254 for the NPB:
```
NPB(config)# no management route gateway
```

Related Commands
management ip address

21.12 management ipv6 route gateway

Command Purpose
Use this command to set the gateway on the NPB for management ipv6 address.

Command Syntax
management ipv6 route (add | del) gateway *IPV6_ADDR*

Parameter	Parameter Description	Parameter Value
add	Add a gateway ipv6 address	-
del	Delete a gateway ipv6 address	-
IPV6_ADDR	IPv6 address	-

Command Mode
Global Configuration

Default
None

Usage
Use this command to set the gateway on the NPB for management ipv6 address.

Examples

The following example sets the gateway of 2000::64 for the NPB:

```
NPB(config)# management ipv6 route add gateway 2000::64
```

Related Commands

management ipv6 address

21.13 service telnet enable

Command Purpose

Use this command to set service telnet enable.

Use the no form of this command to set service telnet disable.

Command Syntax

service telnet enable

no service telnet enable

Command Mode

Global Configuration

Default

Enabled

Usage

Uses this command to enable the telnet service.

Examples

The following example set telnet service enable for the NPB:

```
NPB# configure terminal
NPB(config)# service telnet enable
```

The following example set telnet service disable for the NPB:

```
NPB(config)# no service telnet enable

Connection closed by foreign host.
```

Related Commands

telnet

21.14 service http

Command Purpose

Use this command to set service http enable or disable or restart or timeout.

Command Syntax

service http (enable | disable | restart | timeout *TIMEOUT_VALUE*)

Parameter	Parameter Description	Parameter Value
enable	Enable the http service	-
disable	Disable the http service	-
restart	Restart the http service	-
timeout TIMEOUT_VALUE	Set http timeout value, unit is minute	1-60

Command Mode

Global Configuration

Default

Enabled

Timeout default value is 10 minutes

Usage

Uses this command to enable or disable or restart http service or set timeout value.

Examples

The following example set http service enable for the NPB:

```
NPB(config)# service http enable
```

The following example set http service disable for the NPB:

```
NPB(config)# service http disable
```

The following example set http service restart for the NPB:

```
NPB(config)# service http restart
```

Related Commands

show web users

21.15 service http port

Command Purpose

Use this command to set set http service L4 port number; use the no command to set the default http service L4 port number.

Command Syntax

service http port *L4_NUM_PORT*

no service http port

Parameter	Parameter Description	Parameter Value
L4_NUM_PORT	Http service L4 port number	The range is 1025-65535

Command Mode

Global Configuration

Default

80

Usage

None

Examples

The following example set http service L4 port number for the NPB:

```
NPB(config)# service http port 2000
```

The following example set the default http service L4 port number for the NPB:

```
NPB(config)# no service http port
```

Related Commands

show web users

21.16 service https

Command Purpose

Use this command to set service https enable or disable or restart or set https service L4 port number.

Command Syntax

service https (enable | disable | restart)

Parameter	Parameter Description	Parameter Value
enable	Enable the https service	-
disable	Disable the https service	-
restart	Restart the https service	-

Command Mode

Global Configuration

Default

Enabled

Usage

Uses this command to enable or disable or restart https service.

Examples

The following example set https service enable for the NPB:

```
NPB(config)# service https enable
```

The following example set https service disable for the NPB:

```
NPB(config)# service https disable
```

The following example set https service restart for the NPB:

```
NPB(config)# service https restart
```

Related Commands

show web users

21.17 service https port

Command Purpose

Use this command to set set https service L4 port number; use the no command to set the default https service L4 port number.

Command Syntax

service https port *L4_NUM_PORT*

no service https port

Parameter	Parameter Description	Parameter Value
L4_NUM_PORT	Https service L4 port number	The range is 1025-65535

Command Mode

Global Configuration

Default

443

Usage

None

Examples

The following example set https service L4 port number for the NPB:

```
NPB(config)# service https port 2000
```

The following example set the default https service L4 port number for the NPB:

```
NPB(config)# no service https port
```

Related Commands

show web users

21.18 service rpc-api enable

Command Purpose

Use the command to enable rpc-api service. And use disable command to disable rpc-api service.

Command Syntax

service rpc-api enable (port *PORT_NUM* |) (ssl (ssl-port *SSL_PORT_NUM* |) |)

service rpc-api disable

Parameter	Parameter Description	Parameter Value
PORT_NUM	port number of https service	Default port number is 80
SSL_PORT_NUM	port number of SSL service	Default port number is 443

Command Mode

Global Configuration

Default

Disabled

Usage

Use this command to enable RPC-API service. If parameters need to be modified, RPC-API service need to be disable. RPC-API service can not be enable when http has been enable.

Examples

The following example enables encrypted RPC-API service:

```
NPB# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
NPB(config)# service rpc-api enable ssl
NPB(config)#
```

The following example disables encrypted RPC-API service:

```
NPB# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
NPB(config)# service rpc-api disable
NPB(config)#
```

Related Commands

service rpc-api auth-mode

21.19 service rpc-api auth-mode

Command Purpose

Use the command to configure the auth mode of RPC-API.

Command Syntax

service rpc-api auth-mode (basic)
no service rpc-api auth-mode

Command Mode

Global Configuration

Default

Configure the auth mode of RPC-API

Usage

Use this command to enable or disable the auth mode of RPC-API. If the the the auth mode has been enabled.

Examples

The following example enables the auth mode of RPC-API:

```
NPB# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
NPB(config)# service rpc-api auth-mode basic
```

The following example disables the auth mode of RPC-API:

```
NPB(config)# no service rpc-api auth-mode basic
```

Related Commands

services rpc-api enable

21.20 certificate load pem-cert

Command Purpose

Use the command to import the new certificate file. Use the no command to restore the default certificate file.

Command Syntax

certificate load pem-cert (*FILENAME* | *GFLASHFILE*)
no certificate load pem-cert

Parameter	Parameter Description	Parameter Value
FILENAME	certificate file name, no path but suffix	-
GFLASHFILE	certificate file name with path	-

Command Mode

Global Configuration

Default

Default certificate file

Usage

The private key and certificate need to be placed in the same file as the new certificate file. You need to upload the new certificate file to the any directory under the flash/ directory on the device before using this command. Ensure that the HTTPS service is turned on at the time of command execution and restart the HTTPS service after execution to take effect.

Examples

The following example import new certificate file cert.pem:

```
NPB# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
NPB(config)# certificate load pem-cert flash:/boot/cert.pem
NPB(config)#
```

The following example restore the default certificate file:

```
NPB# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
NPB(config)# no certificate load pem-cert
NPB(config)#
```

Related Commands

None

22 SYSTEM CONFIGURATION Commands

22.1 disable

Command Purpose

To exit Privileged EXEC mode and return to user EXEC mode, enter the disable command in EXEC mode.

Command Syntax

disable

Command Mode

Privileged EXEC

Default

None

Usage

To exit Privileged EXEC mode and return to user EXEC mode, enter the disable command in EXEC mode.
The prompt for Privileged EXEC mode is "#", for EXEC mode is ">".

Examples

In the following example, the user enters Privileged EXEC mode using the enable command, then exits back to user EXEC mode using the disable command:

```
NPB#                                                                    disable
NPB>
```

Related Commands

enable

22.2 enable

Command Purpose

To enter Privileged EXEC mod, use the enable command in user EXEC or Privileged EXEC mode.

Command Syntax

enable

Command Mode

User EXEC

Default

None

Usage

To enter Privileged EXEC mod, use the enable command in user EXEC or Privileged EXEC mode.
The prompt for Privileged EXEC mode is "#", for EXEC mode is ">".

Examples

In the following example, the user enters Privileged EXEC mode using the enable command. The system prompts the user for a password before allowing access to the Privileged EXEC mode. The password is not printed to the screen. The user then exits back to user EXEC mode using the disable command:

```
NPB#                                                                    disable
NPB>                                                                    enable
Password:
NPB#

Password:
NPB#
```

Related Commands

disable
enable password

22.3 logout

Command Purpose

To logout of the current CLI session, enter the logout command in EXEC mode.

Command Syntax

logout

Command Mode

Privileged EXEC

Default

None

Usage

To logout of the current CLI session, enter the logout command in EXEC mode.

Examples

In the following example, the user logout of the current CLI session using the logout command:

```
NPB#                                                                    logout

Connection closed by foreign host.
```

Related Commands

None

22.4 reboot

Command Purpose

To reload the operating system, use the reboot command in Privileged EXEC mode.

Command Syntax

reboot

Command Mode

Privileged EXEC

Default

None

Usage

The reboot command halts the system. Use the reboot command after configuration information is entered into a file and saved to the startup configuration.

Examples

The following example is sample dialog from the reboot command:

```
NPB#                                                                    reboot

Building                                                          configuration...
Reboot                                  system?                   [confirm]y
Waiting                                                                     ...
% Connection is closed by administrator!
```

Related Commands

write

22.5 show file system

Command Purpose

Use this command to show file system information.

Command Syntax

show file system

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to show file system information.

Examples

The following example is to show file system information:

```
NPB#                    show                    file                    system

Type                    Size                    Used                    Free                    Use%
=========================================================================
flash:/                 887M                    56M                     827M                    7%
flash:/boot     776M                    360M                    412M                    47%
udisk:  0B      0B      0B      100%
```

Related Commands

None

22.6 show management ip address

Command Purpose

Use this command to show management interface ip address.

Command Syntax

show management ip address

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to show management interface ip address.

Examples

The following example is to show management interface ip address:

```
NPB#                    show                    management              ip                      address

Management              IP                      address:                                        10.10.39.131/23
Gateway:  0.0.0.0
```

Related Commands

management ip address

management route gateway

22.7 show startup-config

Command Purpose

Use this command to show contents of startup configuration.

Command Syntax

show startup-config

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to show contents of startup configuration.

Examples

The following example is to show contents of startup configuration:

```
NPB#                                    show                                    startup-config

hostname                                                                        NPB
timestamp                               sync                                    systime
enable                                  password                                abc
!
username                admin           privilege       4       password        admin
username                test            privilege       4       password        test
!
!
```

```
logging server enable
!
radius-server host mgmt-if 1.1.1.1
!
tacacs-server host mgmt-if 1.1.1.2
!
tacacs-server host mgmt-if 2.1.1.1 key mykey
!
!
ntp authentication enable
!
ntp key 43 aNickKey
ntp trustedkey 43
ntp key 123 ntpkty123
!
ntp server mgmt-if 1.1.1.1
ntp server mgmt-if 10.10.25.8
ntp server mgmt-if 192.16.22.44 version 2
!
snmp-server enable
snmp-server system-contact admin@example.com
!
snmp-server view view1 included .1.2.3.4 mask f
!
snmp-server trap target-address mgmt-if 10.10.27.232 community sysname
!
snmp-server inform target-address mgmt-if 10.10.27.233 community sysname
!
management ip address 10.10.39.104/23
management route add gateway 10.10.39.254
!
port-channel load-balance hash-arithmetic crc
port-channel load-balance set vxlan-vni
port-channel load-balance set inner-dst-mac
!
ip access-list a
!
ip access-list e1
!
ip access-list aaaa
!
flow f1
!
flow f2
!
sflow enable
sflow agent ip 10.0.0.254
sflow counter interval 10
!
interface eth-0-1
 description TenGigabitEthernet
 speed 1000
 shutdown
!
interface eth-0-2
 shutdown
!
interface eth-0-3
 shutdown
 static-channel-group 10
!
```

```
interface eth-0-4
 shutdown
 static-channel-group 10
!
interface eth-0-5
 shutdown
 static-channel-group 5
!
interface eth-0-6
 shutdown
!
interface eth-0-7
 shutdown
 sflow counter-sampling enable
 sflow flow-sampling enable input
 sflow flow-sampling rate 2048
!
interface eth-0-8
 shutdown
!
interface eth-0-9
 shutdown
!
interface eth-0-10
 shutdown
!
interface eth-0-11
!
interface eth-0-12
!
interface eth-0-13
!
interface eth-0-14
!
interface eth-0-15
!
interface eth-0-16
!
interface eth-0-17
!
interface eth-0-18
!
interface eth-0-19
!
interface eth-0-20
!
interface eth-0-21
!
interface eth-0-22
!
interface eth-0-23
!
interface eth-0-24
!
interface eth-0-25
!
interface eth-0-26
!
interface eth-0-27
!
interface eth-0-28
```

```
!
interface                                                                    eth-0-29
!
interface                                                                    eth-0-30
!
interface                                                                    eth-0-31
!
interface                                                                    eth-0-32
!
interface                                                                    eth-0-33
!
interface                                                                    eth-0-34
!
interface                                                                    agg5
 description                                                                 LinkAgg5
!
interface                                                                    agg10
!
tap-group                                          tap1                      1
 ingress                    eth-0-1                          flow             f1
 egress                                                                      eth-0-9
!
tap-group                                          tap2                      2
 ingress                                                                     eth-0-21
 egress                                                                      eth-0-22
!
tap-group                                          g1                        3
 ingress                                                                     eth-0-33
!
line                                          console                        0
 privilege                                      level                       4
 no                                                                          line-password
 no                                                                          login
line                                vty                          0           7
 exec-timeout                                    35791                       0
 privilege                                      level                       4
 no                                                                          line-password
 no login
```

Related Commands

write

22.8 write

Command Purpose

Use this command to write startup configuration.

Command Syntax

write

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to write startup configuration.

Examples

The following example is to write startup configuration:

```
NPB#                                                                         write

[OK]
```

Related Commands
show startup-config

22.9 boot system flash

Command Purpose
To specify the system image that the NPB loads at startup in flash, use the following boot system commands in Privileged EXEC mode.

Command Syntax
boot system flash *STRING*

Parameter	Parameter Description	Parameter Value
STRING	System image file for next booting	-

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to specify an image to boot system.
This command will take effect after reboot.

Examples
The following example is sample dialog from the boot system command:

```
NPB# boot system flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.01

Are you sure to use flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.01 as the next boot image? [confirm]y
Waiting ..... success
```

Related Commands
reboot

22.10 boot system tftp:

Command Purpose
To specify the system image that the NPB loads at startup in tftp, use the following boot system commands in Privileged EXEC mode.

Command Syntax
boot system *tftp:* mgmt-if *IP_ADDR STRING*

Parameter	Parameter Description	Parameter Value
IP_ADDR	Server IP	-
STRING	Image file name	-

Command Mode
Privileged EXEC

Default
None

Usage
Management IP address in startup-config file will be used as source address when system boot via TFTP.
This command will take effect after reboot.

Examples
The following example is sample dialog from the boot system via tftp command:

```
NPB# boot system tftp: mgmt-if 10.10.38.160 SecPathTAP2000A-IMW110-E6601.BIN.01
Waiting . success
```

Related Commands
reboot

22.11 show boot

Command Purpose

To display the current image and the image the next startup will load, use the show boot command in Privileged EXEC mode.

Command Syntax

show boot (image |)

Parameter	Parameter Description	Parameter Value
image	Show the detailed information about the boot image.	-

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to display the current image and the image the next startup will load.

Examples

The following is sample output from the show boot command:

```
NPB#                                                    show                                                    boot

The          current          boot          image          version          is:          1.10,          ESS          6601
The          current          running          image          is:          flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.01
The next running image is: tftp://10.10.38.160/SecPathTAP2000A-IMW110-E6601.BIN.01
```

The following is sample output from the show boot image command:

```
NPB#                                    show                                    boot                                    image

Current                boot                image                version:                E580-1.10,                ESS                6601
System                                    image                                    files                                    list:
 Create     Time                                    Version                                                                File     name
----------------------+--------------------+---------------------------------
 2017-08-02     13:32:31                v5.1.4                                                                CNOS-e580-hybrid-v5.1.4.bin
* 2017-09-21 15:43:52   v1.10, ESS 6601      SecPathTAP2000A-IMW110-E6601.BIN.01
```

Related Commands

boot system flash

boot system tftp：

22.12 show memory

Command Purpose

Use this command to show memory with keyword.

Command Syntax

show memory (ccs | cds | NPB | chsm | appcfg | fea | authd | all)

Parameter	Parameter Description	Parameter Value
ccs	Configure center service	-
cds	Data center service	-
NPB	NPB process	-
chsm	Chassis manage process	-
appcfg	Application configure process	-
fea	Forwarding process	-
authd	Authentication daemon process	-
all	All processes	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show memory appcfg command:

```
NPB#                                show                                memory                                appcfg

AppCfg                                                  Memory                                                  Information:
Type            Description                                                             Alloc     Count       Alloc     Size
-------------------------------------------------------------------
0                   MEM_TEMP                                                    :    1                                8188
2                    MEM_LIB_HASH                                               :    16                               320
3                        MEM_LIB_HASH_BACKET_LIST                       :    16                               131008
4                       MEM_LIB_HASH_BACKET                             :    37                               444
9                       MEM_LIB_SOCK_MASTER                             :    1                                192
10                  MEM_LIB_SOCK                                        :    5                                1280
11                   MEM_LIB_SOCK_SESSION                           :    7                                229348
12                   MEM_LIB_SOCK_DATA                              :    1                                16
16                  MEM_LIB_SLIST                                       :    113                              2260
17                   MEM_LIB_SLISTNODE                              :    57                               684
22                  MEM_TBL_MASTER                                      :    44                               9788
23                   MEM_TBL_INTERFACE                              :    37                               28416
67                   MEM_TBL_SYS_GLOBAL                             :    1                                384
68                  MEM_TBL_VERSION                                     :    1                                768
72                  MEM_TBL_CHASSIS                                     :    1                                64
77                  MEM_TBL_SYS_SPEC                                    :    8                                3072
84                   MEM_TBL_MEM_SUMMARY                            :    1                                28
112                 MEM_TBL_SSH_CFG                                     :    1                                48
113                 MEM_TBL_SNMP_CFG                                    :    1                                768
114                 MEM_TBL_SNMP_VIEW                                   :    1                                256
116                 MEM_TBL_SNMP_TRAP                                   :    1                                384
117                  MEM_TBL_SNMP_INFORM                            :    1                                384
118                  MEM_TBL_SYSLOG_CFG                             :    1                                384
119                  MEM_TBL_NTP_SERVER                             :    3                                288
121                 MEM_TBL_NTP_KEY                                     :    2                                80
122                 MEM_TBL_NTP_CFG                                     :    1                                64
123                 MEM_TBL_NTP_IF                                      :    1                                8
124                 MEM_TBL_NTP_IF                                      :    1                                256
125                MEM_TBL_USER                                        :    2                                1536
126                MEM_TBL_VTY                                         :    8                                32736
127                 MEM_TBL_CONSOLE                                     :    1                                768
128                 MEM_TBL_AUTHEN                                      :    1                                192
129                 MEM_TBL_LOGIN                                       :    3                                1152
161                  MEM_TBL_LOG_GLOBAL                             :    1                                12
163                  MEM_TBL_SYS_LOAD                               :    1                                32
165                 MEM_TBL_CLOCK                                       :    1                                40
177                  MEM_TBL_OPM_GLOBAL                             :    1                                4
180                  MEM_TBL_OPM_DEBUG                              :    1                                4
194                  MEM_TBL_DOT1X_GLOBAL                           :    1                                768
198                 MEM_TBL_ENABLE                                      :    4                                3072
199                 MEM_TBL_CHIP                                        :    1                                4
201                 MEM_TBL_AUTHOR                                      :    1                                192
202                 MEM_TBL_ACCOUNT                                     :    1                                192
203                  MEM_TBL_ACCOUNTCMD                             :    1                                192
229                   MEM_TBL_SFLOW_GLOBAL                          :    1                                48
234                MEM_DS_BRGIF                                        :    36                               27648
235                MEM_DS_LAG                                          :    5                                80
245                 MEM_DS_ACLQOS_IF                                :    3                                3072
247                  MEM_DS_DHCLIENT_IF                             :    36                               9216
262                MEM_PM_TEMP                                         :    1                                4092
263    MEM_PM_LIB_MASTER            : 1          1024
```

Related Commands
show memory summary

22.13 show memory summary

Command Purpose
Use this command to show the summary of memory states.

Command Syntax
show memory summary total

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following is sample output from the show memory summary command:

```
NPB#                    show                    memory                  summary                 total

Total           memory                                          :       940428          KB
Used            memory                                          :       259228          KB
Freed           memory                                          :       681200          KB
Buffer          memory                                          :       0               KB
Cached          memory                                          :       125848          KB
Memory utilization: 27.56%
```

Related Commands
show memory

22.14 show cpu utilization

Command Purpose
Use this command to show utilizations of cpu.

Command Syntax
show cpu utilization

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to show utilizations of cpu.

Examples
The following is sample output from the show cpu utilization command:

```
NPB#                    show                    cpu                     utilization

Process                                                                 Usage(%)
--------------------+----------
python                                                                  3.42
fea                                                                     2.62
NPB                                                                     0.20
appcfg                                                                  0.10
cds                                                                     0.10
snmpd                                                                   0.10
ccs                                                                     0.10
kworker                                                                 0.10
Others                                                                  5.55
--------------------------------
Total           12.29
```

Related Commands
None

22.15 terminal length

Command Purpose
Use this command to set number of terminal lines on a screen. Range is 0 to 512.
Use the no form of this command to restore the default value.

Command Syntax
terminal length *TERM_LINES*
terminal no length

Parameter	Parameter Description	Parameter Value
TERM_LINES	Number of lines on screen (0 for no pausing)	-

Command Mode
Privileged EXEC

Default
0 (no pausing)

Usage
None

Examples
The following is sample to set terminal length lines:
```
NPB# terminal length 100
```
The following is sample to unset terminal length lines:
```
NPB# terminal no length
```

Related Commands
None

22.16 terminal monitor

Command Purpose
To copy debug output to the current terminal line, use the terminal monitor command in Privileged EXEC mode.
To close the debug output to the current terminal line, use the no form of this command.

Command Syntax
terminal monitor
terminal no monitor

Command Mode
Privileged EXEC

Default
Debug output to the current terminal line is closed

Usage
To copy debug output to the current terminal line, use the terminal monitor command in Privileged EXEC mode.
To close the debug output to the current terminal line, use the no form of this command.

Examples
The following is sample output from the terminal monitor command:
```
NPB# terminal monitor
```
The following is sample close the debug output to the current terminal line:
```
NPB# terminal no monitor
```

Related Commands
debug aaa
debug sflow

22.17 cd

Command Purpose
Change the current directory to dir, use the cd command in EXEC mode.

Command Syntax

cd (*STRING* |)

Parameter	Parameter Description	Parameter Value
STRING	Directory name	-

Command Mode

Privileged EXEC

Default

The initial default file system is flash:. If you do not specify a directory on a file system, the default is the root directory on that file system.

Usage

Change the current directory to dir, use the cd command in EXEC mode.

Examples

In the following example, the cd command is set the flash:/boot file system to the Flash memory:

```
NPB#                    cd                    flash:/boot
NPB#                                                  pwd

flash:/boot
```

Related Commands

pwd

22.18 mkdir

Command Purpose

To create a new directory in a Flash file system, use the mkdir command in EXEC mode.

Command Syntax

mkdir *STRING*

Parameter	Parameter Description	Parameter Value
STRING	Directory name or file name	-

Command Mode

Privileged EXEC

Default

None

Usage

This command is valid only for local file systems.

Examples

The following example creates a directory named newdir in Flash:

```
NPB# mkdir flash:/newdir
```

Related Commands

rmdir
dir

22.19 rmdir

Command Purpose

To remove an existing directory in a Flash file system or udisk device, use the rmdir command in Privileged EXEC mode.

Command Syntax

rmdir *STRING*

Parameter	Parameter Description	Parameter Value
STRING	Directory name or file name	-

Command Mode

Privileged EXEC

Default

None

Usage
This command is valid only for local file systems.

Examples
The following example deletes a directory named newdir:

```
NPB#                                    rmdir                                   flash:/newdir

Are you sure to delete flash:/newdir ? [no]y
```

Related Commands
mkdir

22.20 pwd

Command Purpose
Use this command to print working directory.

Command Syntax
pwd

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to print working directory.

Examples
The following example print current working directory:

```
NPB#                                                                            pwd
flash:/
```

Related Commands
cd

22.21 ls

Command Purpose
To display a list of files on a file system, use the ls command in EXEC mode.

Command Syntax
ls (*flash:* | *flash:/boot* | *udisk:* |) (*STRING* |)

Parameter	Parameter Description	Parameter Value
flash:	File system on the flash	-
flash:/boot	File path “flash:/boot”	-
udisk:	USB storage devices	-
STRING	Directory name or file name	-

Command Mode
Privileged EXEC

Default
None

Usage
Use the ls (Flash file system) command to display flash information.

Examples
The following is sample output from the ls command:

```
NPB#                                                                            ls

Directory                                       of                              flash:/

total                                                                           3196
-rw-r--r--      1                       1371    May     31      22:32   001E080BE6C2.1.lic
-rwxr-xr-x      1       295938  Aug     15      10:26   AQR-G2_v3.2.5_ID19866_VER537.cld
```

```
-rw-r--r--  1          39861  Jul  5  15:07  E580_48X2Q4Z_EPLD-4.1_0410_POWERDOWN.tar.gz
drwxr-xr-x  2           2464  Sep  22 14:41  boot
drwxr-xr-x  7            760  Aug  15 10:26  cold
drwxr-xr-x  3           1016  Sep  22 14:42  conf
-rw-r--r--  1            147  Aug  15 10:31  dhcpsnooping
-rw-------  1            151  Aug  15 10:31  dhcpv6snooping
drwxr-xr-x  2            728  Sep  4  20:53  info
-rw-r--r--  1            909  Jul  18 13:30  init_flow
-rw-r--r--  1           3181  Aug  15 10:09  jinl_astp
drwxr-xr-x  3            224  Aug  10 11:25  lib
-rw-r--r--  1           2180  Jul  13 16:09  liujy_lab.conf
drwxr-xr-x  2            288  Jul  1  2016  log
drwxr-xr-x  7            488  Aug  23 2016  monitor
drwxr-xr-x  2            232  May  2  19:03  reboot-info
-rw-r--r--  1          11963  Mar  30 18:21  route.txt
-rw-r--r--  1           2624  Sep  22 14:41  startup-config.conf
-rw-------  1          13686  Apr  10 18:57  startup-config.conf.2017-4-10
-rw-r--r--  1           1314  May  4  18:48  startup-config.conf.empty
-rw-r--r--  1           1694  Apr  21 17:40  startup-config.conf_0421
-rwxr-xr-x  1        1015068  Mar  18 2017   stressapptest
-rw-r--r--  1        1155521  Sep  22 15:56  syslog
drwxr-xr-x  2           4192  Sep  12 06:09  syslogfile

Total 887.00M bytes (875.00M bytes free)
```

Related Commands

dir

22.22 copy running-config

Command Purpose

To copy current device configuration to other files, use this command in EXEC mode.

Command Syntax

copy running-config (mgmt-if |) (*STRING* |)

Parameter	Parameter Description	Parameter Value
mgmt-if	Need to connect to the URL via management interface	-
STRING	Copy to URL and local file name	-

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to copy current running-config to destination file.

Examples

The following example copies the current configuration to the file named current-config.conf:

```
NPB# copy running-config flash:/current-config.conf
flash:/current-config.conf
[OK]
```

Related Commands

delete

22.23 copy startup-config

Command Purpose

Use this command to copy startup-config to tftp server or dest file.

Command Syntax

copy startup-config (mgmt-if |) (*STRING* |)

Parameter	Parameter Description	Parameter Value
mgmt-if	Need to connect to the URL via management interface	-
STRING	Copy to URL and local file name	-

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
This is a sample output from the command displaying how to copy startup-config to tftp server:

```
NPB# copy startup-config mgmt-if tftp://10.10.38.160/

TFTP server [10.10.38.160]
Name of the TFTP file to access [] startup-config
Send file to tftp://10.10.38.160/startup-config
.
Sent 2337 bytes in 0.0 seconds
```

Related Commands
delete

22.24 copy mgmt-if

Command Purpose
Use this command to copy file from tftp server to local.

Command Syntax
copy mgmt-if *SRC_STRING DST_STRING*

Parameter	Parameter Description	Parameter Value
SRC_STRING	Copy from URL	-
DST_STRING	Copy to local file	-

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to copy file from tftp server to local.

Examples
This is a sample output from the command displaying how to copy file from tftp server to local:

```
NPB# copy mgmt-if tftp://10.10.38.160 flash:/boot


TFTP server [10.10.38.160]
Name of the TFTP file to access [] collections.py
Download from URL to temporary file.
Get file from tftp://10.10.38.160/collections.py
.
Received 25403 bytes in 0.2 seconds
Copy the temporary file to its destination.
.
File system synchronization. Please waiting...
25403 bytes in 0.1 seconds, 248 kbytes/second
```

Related Commands
delete

22.25 copy

Command Purpose

Use this command to copy file from local file to tftp server or local.

Command Syntax

copy *SRC_STRING* mgmt-if *DST_STRING*

Parameter	Parameter Description	Parameter Value
SRC_STRING	Copy from URL	-
DST_STRING	Copy to local file	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This is a sample output from the command displaying how to copy file from local file to tftp server:

```
NPB# copy flash:/startup-config.conf mgmt-if tftp://10.10.38.160

TFTP server [10.10.38.160]
Name of the TFTP file to access [] startup-config.conf
Send file to tftp://10.10.38.160/startup-config.conf
.
Sent 2177 bytes in 0.1 seconds
```

Related Commands

delete

22.26 more

Command Purpose

To display the contents of a file, use the more command in EXEC mode.

Command Syntax

more *STRING*、

Parameter	Parameter Description	Parameter Value
STRING	Text file name	-

Command Mode

Privileged EXEC

Default

None

Usage

The system can only display a file in ASCII format.

Examples

The following partial sample output displays the configuration file named startup-config in flash:

```
NPB# more flash:/startup-config.conf
```

Related Commands

dir

22.27 delete

Command Purpose

To delete a file on the flash, use the delete command in Privileged EXEC mode.

Command Syntax

delete *STRING*、

Parameter	Parameter Description	Parameter Value
STRING	File name for delete	-

Command Mode
Privileged EXEC

Default
None

Usage
If you attempt to delete the configuration file or image, the system prompts you to confirm the deletion.

Examples
The following example deletes the file named test from the flash:

```
NPB#                    delete                    flash:/test

Are you sure to delete flash:/test? [no]y
```

Related Commands
copy

22.28 rename

Command Purpose
To rename a file in a Class C Flash file system or udisk device, use the rename command in EXEC mode.

Command Syntax
rename *OLD_STRING NEW_STRING*

Parameter	Parameter Description	Parameter Value
OLD_STRING		-
NEW_STRING		-

Command Mode
Privileged EXEC

Default
None

Usage
This command is valid only for local file systems.

Examples
In the following example, the file named startup-config.conf-bak is renamed startup-config.conf-bak1:

```
NPB#                    rename                    flash:/startup-config.conf-bak                    flash:/startup-config.conf-bak1
Are    you    sure    to    rename    flash:/startup-config.conf-bak    ?    [confirm]y
.
File                    system                    synchronization.                    Please                    waiting...
1061 bytes in 0.1 seconds, 10 kbytes/second
```

Related Commands
ls

22.29 source

Command Purpose
Read and execute commands from filename in the shell environment.

Command Syntax
source *STRING*

Parameter	Parameter Description	Parameter Value
STRING	Configuration file	-

Command Mode
Privileged EXEC

Default
None

Usage
None

Examples
The following is show how to source commands from a file:

```
NPB# source flash:/bash_shutdown.txt
NPB# configure terminal

Enter configuration commands, one per line. End with CNTL/Z.
NPB(config)# interface range eth-0-5 - 7
NPB(config-if-range)# shutdown
NPB(config-if-range)# end
NPB#
```

Related Commands

None

22.30 system min-frame check

Command Purpose

Use this command enable system min frame check, system min frame size is 64bytes.

Command Syntax

system min-frame check enable
no system min-frame check enable

Parameter	Parameter Description	Parameter Value
enable	enable system min frame check	-

Command Mode

Global Configuration

Default

enable

Usage

None

Examples

The following example shows how to enable system min frame check:

```
NPB(config)# system min-frame check enable
```

The following example shows how to disable system min frame check:

```
NPB(config)# no system min-frame check enable
```

Related Commands

None

22.31 banner

Command Purpose

Use this command to define a banner

Command Syntax

banner (exec | login) STRING
no banner (exec | login)

Parameter	Parameter Description	Parameter Value
exec	exec banner	-
login	login banner	-
STRING	banner text information	c banner-text c, where 'c' is a delimiting character, only allow '0-9A-Za-z,@._-'

Command Mode

Global Configuration

Default

None

Usage

None

Examples

The following example shows how to define a exec banner:

```
NPB(config)# banner exec @no_delete_configuration@
```

Related Commands

None

22.32 do

Command Purpose

Use this command to execute the commands in EXEC mode

Command Syntax

do COMMAND_STRING

Parameter	Parameter Description	Parameter Value
COMMAND_STRING	The string of the command	-

Command Mode

All Configuration Mode

Default

None

Usage

None

Examples

The following example shows how to execute the do command:

```
NPB# configure terminal
NPB(config)# do show interface eth-0-1

Interface eth-0-1
 Interface current state: DOWN
 Hardware is Port, address is 001e.080b.e6c2
 Bandwidth 1000000 kbits
 Index 1 , Metric 1
 Speed - auto , Duplex - auto , Metadata - Disable , Media type is UNKNOWN
 Link type is autonegotiation
 Admin input flow-control is off, output flow-control is off
 Oper input flow-control is off, output flow-control is off
 The Maximum Frame Size is 12800 bytes
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes
  Received 0 unicast, 0 broadcast, 0 multicast
  0 runts, 0 giants, 0 input errors, 0 CRC
  0 frame, 0 overrun, 0 pause input
  0 packets output, 0 bytes
  Transmitted 0 unicast, 0 broadcast, 0 multicast
  0 underruns, 0 output errors, 0 pause output
```

Related Commands

None

23 DEVICE Commands

23.1 show version

Command Purpose

To display the version information of the hardware and firmware, use the show version command in EXEC mode.

Command Syntax

show version

Command Mode

Privileged EXEC

Default

None

Usage

This command can display the version information of the hardware and firmware.

Examples

This example shows how to display version information of the hardware and firmware:

```
NPB# show version

i-Ware Software, Version 1.10, ESS 6601 01
Vendor Information
SecPath FW uptime is 0 weeks, 1 day, 1 hours, 16 minutes
Boot image: flash:/boot/SecPathTAP2000S-IMW110-E6601.BIN
Boot image version: 1.10, ESS 6601 01
Next running image : flash:/boot/SecPathTAP2000S-IMW110-E6601.BIN
SLOT 1
Hardware Type : NPB
SDRAM size : 2048M
Flash size : 2048M
Hardware Version : 1.2
EPLD Version : 2.1
BootRom Version : 6.1.1
System serial number : E101ZB142025
```

Related Commands

None

23.2 show stm prefer

Command Purpose

Use the show stm prefer privileged EXEC command to display information about the profiles that can be used to maximize system resources for a particular feature.

Command Syntax

show stm prefer (current | next | default)

Parameter	Parameter Description	Parameter Value
current	Current profile information	-
next	Next profile information	-
default	Balance on all kinds of tables size	-

Command Mode

Privileged EXEC

Default

None

Usage

The numbers displayed for each profile represent an approximate maximum number for each feature resource. Use this command to show the default balance on all kinds of tables size.

Examples

This is an example of output from the show stm prefer current command:

```
NPB# show stm prefer current

number of tap group : 1/512
number of tap trunction : 0/4
number of link aggregation(static) : 0/31
number of Flow features:
  Flow entry ingress entries : 0/1024
  Flow entry egress entries : 0/255
  System Flow configure : 2/4096
  System Flow entry configure : 0/8192
  System L4 Port Range entries : 0/7
```

Related Commands

stm prefer

23.3 show environment

Command Purpose

Use this command to show the hardware environment information.

Command Syntax

show environment

Command Mode

Privileged EXEC

Default

None

Usage

This command only can show the hardware environment information.

Examples

This example shows how to display hardware environment information:

```
NPB# show environment

Fan tray status:
Index Status SpeedRate Mode
----------+------------+------------+------------
1-1 OK 60% AUTO
1-2 OK 60% AUTO
1-3 OK 60% AUTO
Power status:
Index Status Power Type Alert
----------+------------+------------+------------+------------
1 PRESENT OK AC NO
2 ABSENT - - -
Sensor status (Degree Centigrade):
Index Temperature Lower_alarm Upper_alarm Critical Position
----------+------------+------------+------------+------------+------------
1 56 5 65 80 AROUND_CPU
```

Related Commands

temperature

23.4 show clock

Command Purpose

Use this command to show the clock information.

Command Syntax

show clock

Command Mode

Privileged EXEC

Default
None

Usage
The show clock command can get the clock information.

Examples
This example shows how to display clock information:

```
NPB#                                    show                                    clock

05:29:55                Beijing         Wed             Sep             27              2017
Time Zone(Beijing) : UTC+08:00:00
```

Related Commands
clock set datetime
clock set timezone

23.5 show transceiver

Command Purpose
Use this command to show the transceiver information.

Command Syntax
show transceiver (*IF_NAME_E* |) (detail |)

Parameter	Parameter Description	Parameter Value
IF_NAME_E	Ethernet interface name	-
detail	Show detailed information	-

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to show the interface transceiver information, or the transceiver detail information.

Examples
This example shows how to display transceiver information:

```
NPB#                                    show                                    transceiver                             detail

Port                                    eth-0-17                                transceiver                             info:
Transceiver                                                     Type:                                                   1000BASE-T_SFP
 Transceiver                    Vendor                  Name                    :                                       INNOLIGHT
 Transceiver            PN                                                              :                               TC-SORJZ-N00
 Transceiver            S/N                                                                     :                       IN0912SZ01025C
Transceiver                                     Output                          Wavelength:                             N/A
Supported                               Link                    Type                    and                             Length:
    Link                Length                  for                     copper:                 100                     m
Digital                         diagnostic                      is                      not                             implemented.
Port                                    eth-0-21                                transceiver                             info:
Transceiver                                                     Type:                                                   1000BASE-SX
 Transceiver                    Vendor                  Name                    :                       FINISAR         CORP.
 Transceiver            PN                                                              :                               FTLF8519P3BTL
 Transceiver            S/N                                                                     :                       PPB2DL1
Transceiver                             Output                          Wavelength:                     850             nm
Supported                               Link                    Type                    and                             Length:
    Link                Length                  for                     50/125um                multi-mode              fiber:          300             m
    Link                Length                  for                     62.5/125um              multi-mode              fiber:          150             m
------------------------------------------------------------------------------
Transceiver                                     is                              internally                              calibrated.
mA:             milliamperes,           dBm:            decibels        (milliwatts),           NA              or              N/A:            not             applicable.
++              :               high            alarm,          +               :               high            warning,        -               :               low             warning,        --              :               low             alarm.
The                             threshold                       values                          are                             calibrated.
------------------------------------------------------------------------------
```

```
                    High Alarm      High Warn       Low Warn        Low Alarm
          Temperature               Threshold       Threshold       Threshold       Threshold
Port                (Celsius)       (Celsius)       (Celsius)       (Celsius)
--------------+---------------+---------+---------+---------+---------
eth-0-21      32.92           110.00          93.00           -30.00          -40.00
-------------------------------------------------------------------------------
                    High Alarm      High Warn       Low Warn        Low Alarm
          Voltage                   Threshold       Threshold       Threshold       Threshold
Port                (Volts)         (Volts)         (Volts)         (Volts)         (Volts)
--------------+---------------+---------+---------+---------+---------
eth-0-21      3.29            3.60            3.50            3.10            3.00
-------------------------------------------------------------------------------
                    High Alarm      High Warn       Low Warn        Low Alarm
          Current                   Threshold       Threshold       Threshold       Threshold
Port                (milliamperes)  (mA)            (mA)            (mA)            (mA)
--------------+---------------+---------+---------+---------+---------
eth-0-21      6.53            13.00           12.50           2.00            1.00
-------------------------------------------------------------------------------
          Optical                   High Alarm      High Warn       Low Warn        Low Alarm
          Transmit Power            Threshold       Threshold       Threshold       Threshold
Port                (dBm)           (dBm)           (dBm)           (dBm)           (dBm)
--------------+---------------+---------+---------+---------+---------
eth-0-21      -5.08           0.00            -3.00           -9.50           -13.50
-------------------------------------------------------------------------------
          Optical                   High Alarm      High Warn       Low Warn        Low Alarm
          Receive Power             Threshold       Threshold       Threshold       Threshold
Port                (dBm)           (dBm)           (dBm)           (dBm)           (dBm)
--------------+---------------+---------+---------+---------+---------
eth-0-21    -6.68         0.50      -1.00     -16.99    -21.02
```

Related Commands

None

23.6 show system summary

Command Purpose

Use this command to show the summary of system information.

Command Syntax

show system summary

Command Mode

Privileged EXEC

Default

None

Usage

This command to show the summary of system information.

Examples

This example shows how to display the summary of system information:

```
NPB#                    show                    system                  summary

##########              Version                 Table                   ##########
i-Ware          Software,       Version         1.10,           ESS             6601            01
Vendor                                                                                  Information
SecPath         FW      uptime  is      0       weeks,  0       day,    0       hours,  52      minutes
Boot                    image:                  flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.03
Boot            image           version:        1.10,           ESS             6601            01
Next            running         image   :       flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.03
SLOT                                                                                    1
Hardware        Type                                                            :       NPB
SDRAM           size                                                            :       1024M
Flash           size                                                            :       2048M
Hardware                Version                                                 :       2.0
```

```
EPLD Version                                                                    : 1.2
BootRom Version                                                                 : 8.1.3
System serial number                                                            : E142GD16107A
########## Management IP Table ##########
Management IP address:                                                          10.10.39.104/23
Gateway:                                                                        10.10.39.254
########## Route Mac Table ##########
 Route MAC is:                                                                  001e.080b.e6c2
########## Users Table ##########
 Line Host(s) Idle Location User
--------------+----------+----------+--------------+----------
 130 vty 0 idle 00:51:05 Local
 131 vty 1 idle 00:50:30 10.10.25.25
*132 vty 2 idle 00:00:00 10.10.25.25
########## Memory Summary Table ##########
Total memory :                                                                  940428 KB
Used memory :                                                                   260220 KB
Freed memory :                                                                  680208 KB
Buffer memory :                                                                 0 KB
Cached memory :                                                                 125840 KB
Memory utilization: 27.67%
```

Related Commands

None

23.7 show reboot-info

Command Purpose

Use this command to show reboot information.

Command Syntax

show reboot-info

Command Mode

Privileged EXEC

Default

None

Usage

Use this command to show reboot information.

Examples

The following example shows how to display reboot information:

```
NPB# show reboot-info

Times Reboot Type Reboot Time
----------+---------------+--------------------
1 MANUAL 2017-06-27 06:46:19
2 MANUAL 2017-06-28 02:12:28
3 MANUAL 2017-06-30 08:34:57
4 MANUAL 2017-07-05 09:45:01
5 MANUAL 2017-07-13 08:12:08
6 POWER 2017-07-23 09:47:32
7 POWER 2017-07-30 05:47:48
8 POWER 2017-07-30 08:37:03
9 POWER 2017-08-03 02:14:48
10 MANUAL 2017-08-03 12:07:06
11 MANUAL 2017-08-05 03:41:58
12 MANUAL 2017-08-05 06:30:18
13 BHMDOG 2017-08-05 16:48:30
14 POWER 2017-08-10 03:19:47
15 MANUAL 2017-08-10 03:27:31
16 MANUAL 2017-08-10 03:34:27
17 UNKNOWN 2017-08-11 06:48:21
18 MANUAL 2017/08/15 02:13:55
```

```
19                                  POWER                   2017/08/15  02:22:21
20                                    MANUAL                2017/08/15  02:26:27
21                                    MANUAL                2017/08/15  02:29:39
22                                    MANUAL                2017/08/15  02:32:37
23                                    MANUAL                2017/08/15  02:35:11
24                                  POWER                   2017-08-15  07:51:14
25                                    MANUAL                2017-08-15  08:19:48
26                                     UNKNOWN              2017-08-15  08:40:01
27                                    MANUAL                2017-08-15  08:44:19
28                                    MANUAL                2017-08-16  03:43:38
29                                    MANUAL                2017-08-17  07:00:46
30                                    MANUAL                2017-08-18  07:23:43
31                                  POWER                   2017-09-12  02:34:24
32                                     UNKNOWN              2017-09-12  05:56:16
33                                  POWER                   2017-09-12  07:17:19
34                                  POWER                   2017-09-12  07:22:47
35                                       ABNORMAL           2017-09-12  07:31:32
36                                    MANUAL                2017-09-12  07:44:43
37                                    MANUAL                2017-09-12  07:50:12
38                                    MANUAL                2017-09-12  07:57:50
39                                    MANUAL                2017-09-19  13:07:38
40                                  POWER                   2017-09-20  10:07:18
41                                    MANUAL                2017-09-20  10:26:10
42                                       ABNORMAL           2017-09-21  06:38:38
43                                    MANUAL                2017-09-21  06:50:39
44                                    MANUAL                2017-09-21  07:13:14
45                                    MANUAL                2017-09-21  07:36:41
46                                    MANUAL                2017-09-21  07:47:01
47                                    MANUAL                2017-09-21  13:05:42
48                                    MANUAL                2017-09-22  06:42:49
49                                    MANUAL                2017-09-26  11:48:08
50      MANUAL      2017-09-26 13:03:57
```

Related Commands

clear reboot-info

23.8 clear reboot-info

Command Purpose

Use this command to clear reboot information.

Command Syntax

clear reboot-info

Command Mode

Privileged EXEC

Default

None

Usage

The clear reboot-info command can clear reboot information.

Examples

The following example shows how to clear reboot information:

```
NPB# clear reboot-info
```

Related Commands

show reboot-info

23.9 set device id-led

Command Purpose

Use this command to set the device indicate led force on or force off.

Command Syntax

set device id-led (on | off)

Parameter	Parameter Description	Parameter Value
on	Turn on the led	-
off	Turn off the led	-

Command Mode
Privileged EXEC

Default
None

Usage
The command can set device indicate led force on or force off.

Examples
The following example shows how to set device indicate led force on:
```
NPB# set device id-led on
```

Related Commands
show device id-led

23.10 show device id-led

Command Purpose
Use this command to show device indicate led information.

Command Syntax
show device id-led

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to show device indicate led information.

Examples
The following example shows the device indicates led information:
```
NPB# show device id-led

Indicate led is forced on
```

Related Commands
set device id-led

23.11 show schedule reboot

Command Purpose
Use this command to show schedule reboot information.

Command Syntax
show schedule reboot

Command Mode
Privileged EXEC

Default
None

Usage
Use this command to show schedule reboot information.

Examples
The following example shows schedule reboot information:
```
NPB# show schedule reboot

Current time is : 2017-09-26 22:14:49
Will reboot at : 2017-09-26 23:48:44
```

Related Commands
schedule reboot delay
schedule reboot at

23.12 stm prefer

Command Purpose

Use the stm prefer Global Configuration command to configure the profile used in NPB Table Management (STM) resource allocation. You can use profile to allocate system memory to best support the features being used in your application. Use profile to approximate the maximum number of unicast MAC addresses, quality of service (QoS) access control entries (ACEs) and unicast routes.

Command Syntax

stm prefer default

Command Mode

Global Configuration

Default

System use the default profile when first boot up, this profile balance all the features.

Usage

Users must reload the NPB for the configuration to take effect.

Examples

This example shows how to configure the default profile on the NPB:

```
NPB(config)#                    stm                    prefer                    default

% Changes to STM profile have been stored, but cannot take effect until the next reload. Use 'show stm prefer current' to see what STM profile is currently active.
```

Related Commands

show stm prefer current
show stm prefer next

23.13 temperature

Command Purpose

Use this command to specify the system temperature monitor threshold.
Use the no form of this command to restore the default value.

Command Syntax

temperature *TEMP_LOW TEMP_HIGH TEMP_CRIT*
no temperature

Parameter	Parameter Description	Parameter Value
TEMP_LOW	Low alarm temperature degree Celsius	range -15 to 50
TEMP_HIGH	High alarm temperature degree Celsius	range 50 to 85
TEMP_CRIT	Critical temperature degree Celsius	range 55 to 90

Command Mode

Global Configuration

Default

The default threshold is low temperature 5, high temperature 65, and critical temperature 80.

Usage

The unit for temperature is centigrade. The critical temperature must higher than high temperature 5 Celsius degrees. The high temperature must higher than low temperature 5 Celsius degrees.

Examples

This example shows how to specify the temperature thresholds:

```
NPB(config)# temperature 5 70 80
```

This example shows how to specify the temperature thresholds to default value:

```
NPB(config)# no temperature
```

Related Commands

show environment

23.14 clock set datetime

Command Purpose

Use this command to set system current date and time on the NPB.

Command Syntax

clock set datetime ABS_TIME CLOCK_MONTH ABS_DAY ABS_YEAR

Parameter	Parameter Description	Parameter Value
ABS_TIME	Current time	-
CLOCK_MONTH	Month of the year	1-12
ABS_DAY	Day of the month	1-31
ABS_YEAR	Year	2000-2037

Command Mode

Global Configuration

Default

The default time is based from UTC.

Usage

If no other source of time is available, you can manually configure the time and date after the system is restarted. The time remains accurate until the next system restart. We recommend that you use manual configuration only as a last resort. If you have an outside source to which the NPB can synchronize, you do not need to manually set the system clock.

Examples

This example shows how to manually set the system clock:

```
NPB(config)# clock set datetime 22:43:23 9 26 2017
```

Related Commands

show clock

23.15 clock set timezone

Command Purpose

Use this command to set timezone.

Use the no form of this command to restore the default value.

Command Syntax

clock set timezone *Z_NAME* (add | minus) TZ_HOURS (TZ_MIN (TZ_SEC |) |)

no clock set timezone

Parameter	Parameter Description	Parameter Value
Z_NAME	Zone name,	Valid characters are among "A-Za-z_", must be less than 32 characters
add	Specify the time offset is positive from UTC	-
minus	Specify the time offset is negative from UTC	-
TZ_HOURS	Hours offset from UTC	0-23
TZ_MIN	Minutes offset from UTC	0-59
TZ_SEC	Seconds offset from UTC	0-59

Command Mode

Global Configuration

Default

None

Usage

None

Examples

This example shows how to set the clock timezone :

```
NPB(config)# clock set timezone Beijing add 8
```

This example shows how to recover the clock timezone:

```
NPB(config)# no clock set timezone
```

Related Commands

show clock

23.16 update bootrom

Command Purpose

Use this command to upgrade bootrom image.

Command Syntax

update bootrom *STRING*

Parameter	Parameter Description	Parameter Value
STRING	Source file direction	-

Command Mode

Global Configuration

Default

None

Usage

This command can upgrade bootrom image.

Examples

This example shows how to update bootrom image:

```
NPB(config)# update bootrom flash:/boot/bootrom.bin
```

Related Commands

reboot

23.17 split interface

Command Purpose

Use the command to split physic port to 10G ports or 40G ports.

Use the no form of this command to set the interface to un-split the physic port.

Command Syntax

split interface *IF_NAME_E* (10giga | 40giga)

no split interface *IF_NAME_E*

Parameter	Parameter Description	Parameter Value
IF_NAME_E	Interface name	-
10giga	Split to 10G port	-
40giga	Split to 40G port	-

Command Mode

Global Configuration

Default

None

Usage

Need to save configuration and reboot to make this command take effect.

Examples

The following example shows how to split interface to four 10G port:

```
NPB(config)#                split                interface                eth-0-34                10giga

Notice: Configuration of split interface should be writen in startup-config, and take effect at next reload
```

Related Commands

reboot

23.18 schedule reboot at

Command Purpose

Use this command to set schedule reboot at a time.

Use the no form of this command to cancel the schedule.

Command Syntax

schedule reboot at *HOUR_MIN* (*YEAR_MON_DAY* |)
no schedule reboot

Parameter	Parameter Description	Parameter Value
HOUR_MIN	Specify the hour and minute	-
YEAR_MON_DAY	Specify the date for current year, year range is [2000, 2037]	-

Command Mode

Global Configuration

Default

None

Usage

The reboot time could select time with format HH:MM, and optional date with format YYYY/MM/DD or MM/DD/YYYY or MM/DD.

Examples

The following example shows how to set schedule reboot at a time:

```
NPB(config)# schedule reboot at 10:20 2016/10/2
```

Related Commands

show schedule reboot

23.19 schedule reboot delay

Command Purpose

Use this command to set schedule reboot after a time.

Command Syntax

schedule reboot delay DELAY_TIME
no schedule reboot

Parameter	Parameter Description	Parameter Value
DELAY_TIME	Specify the delay time	-

Command Mode

Global Configuration

Default

None

Usage

The reboot delay time could select be format HH:MM, or minutes in range of [1,720].

Examples

The following example shows how to set schedule reboot after a time:

```
NPB(config)# schedule reboot delay 100
```

Related Commands

show schedule reboot

23.20 telnet

Command Purpose

Use this command to remote access to other devices

Command Syntax

telnet mgmt-if *NAME_STRING* (*TCP_PORT* |)

Parameter	Parameter Description	Parameter Value
mgmt-if	Establish a remote connection through the management port	-
NAME_STRING	IP address or hostname of a remote system	-
TCP_PORT	Specify the tcp port number, the	1-65535

	default number is 23	

Command Mode

Privileged EXEC

Default

None

Usage

The command is used to establish a connection to other devices through the management port.The default tcp port is 23.

Examples

The following example shows how to remote access to other devices:

```
NPB# telnet mgmt-if 10.10.39.101
```

Related Commands

None

24 IPFIX Commands

24.1 ipfix recorder

Command Purpose

Use this command to create a ipfix recorder and enter recorder configure mode. To remove the ipfix recorder, use the no form of this command.

Command Syntax

ipfix recorder *NAME*
no ipfix recorder *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix recorder name	Up to 32 characters

Command Mode

Global Configuration

Default

None

Usage

If ipfix recorder has existed，it will enter IPFIX recorder Configuration；if ipfix recorder is new，it will create a recorder and enter IPFIX recorder Configuration；this command should work with the commands of match and collect.

Examples

This example shows how to create ipfix recorder recorder1in global configuration and enter IPFIX recorder Configuration:

```
NPB# configure terminal
NPB(config)# ipfix recorder recorder1
NPB(Config-ipfix-reocrder)#

NPB# configure terminal
NPB(config)# no ipfix recorder recorder1
```

Related Commands

decription
match ipv4
match ipv6
match mpls
match transport
collect ttl
collect flow
collect counter

24.2 description

Command Purpose

This command used to describe ipfix recorder，use the no form of this command to delete this description.

Command Syntax

description *DESCRIPTION*

Parameter	Parameter Description	Parameter Value
DESCRIPTION	ipfix monitor description	The length of ipfix monitor description should not exceed 64 characters

Command Mode

IPFIX recorder Configuration

Default

None

Usage
None

Examples
This example shows how to describe recorder in IPFIX recorder Configuration:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       recorder                recorder1
NPB(Config-ipfix-reocrder)# descrption this is a ipfix recorder
```

This example shows how to delete the description of the recorder:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       recorder                recorder1
NPB(Config-ipfix-reocrder)# no description
```

Related Commands
None

24.3 match ipv4

Command Purpose
This command configures the fields of ipv4 in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
match ipv4 (source | destination) address (mask *IP_MASK_LEN* |)
match ipv4 （dscp | ecn | ttl）
no match ipv4 （source | destination）address
no match ipv4 （dscp | ecn | ttl）

Parameter	Parameter Description	Parameter Value
source	ipv4 source ipaddress	-
destination	ipv4 destination ipaddress	-
dscp	ipv4 dscp value	-
ecn	ipv4 ecn value	-
ttl	ipv4 ttl value	-
IP_MASK_LEN	mask length for ipv4 address	1-32

Command Mode
IPFIX recorder Configuration

Default
Default value is 32

Usage
None

Examples
This example shows how to configure to use ipv4 source address and ipv4 destination address in ipfix recorder:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       recorder                recorder1
NPB(Config-ipfix-reocrder)#       match                 ipv4                source          address

NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       recorder                recorder1
NPB(Config-ipfix-reocrder)#  match ipv4 destination address
```

Related Commands
None

24.4 match ipv6

Command Purpose
This command configures the fields of ipv6 in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
match ipv6 (source | destination) address (mask *IPV6_MASK_LEN* |)
no match ipv6（source | destination）address

match ipv6（flowlabel | dscp）
no match ipv6（flowlabel | dscp）

Parameter	Parameter Description	Parameter Value
source	ipv6 source ipaddress	-
destination	ipv4 destination ipaddress	-
dscp	ipv6 dscp value	-
flowlabel	ipv6 flowlabel value	-
IPV6_MASK_LEN	mask length for ipv6 address	range is 1-128 and must be the multiple of 4

Command Mode
IPFIX recorder Configuration
Default
Default value is 128
Usage
None
Examples
This example shows how to configure to use ipv6 source address and ipv6 destination address in ipfix recorder:

```
NPB# configure terminal
NPB(config)# ipfix recorder recorder1
NPB(Config-ipfix-reocrder)# match ipv6 source address

NPB# configure terminal
NPB(config)# ipfix recorder recorder1
NPB(Config-ipfix-reocrder)# match ipv6 destination address
```

Related Commands
None

24.5 match mac

Command Purpose
this command configures the fields of mac in ipfix recorder, use the no form of this command to delete this configure.
Command Syntax
match mac （destination | source） address
no match mac （destination | source）address

Parameter	Parameter Description	Parameter Value
source	Source mac address	-
destination	Destination mac address	-

Command Mode
IPFIX recorder Configuration
Default
None
Usage
None
Examples
This example shows how to configure to use source mac address in ipfix recorder:

```
NPB# configure terminal
NPB(config)# ipfix recorder recorder1
NPB(Config-ipfix-reocrder)# match mac source address
```

Related Commands
None

24.6 match transport

Command Purpose

This command configures the fields of transport in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax

match transport（destination-port | source-port | type）
no match transport（destination-port | source-port | type）
match transport icmp（opcode | type）
no match transport icmp（opcode | type）

Parameter	Parameter Description	Parameter Value
destination-port	Destination port	-
source-port	Source port	-
type	Transport layer type	-
opcode	Icmp operated code	-

Command Mode

IPFIX recorder Configuration

Default

None

Usage

None

Examples

This example shows how to configure to use source port and destination port of transport in ipfix recorder:

```
NPB#                                    configure                       terminal
NPB(config)#                    ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)#             match           transport       source-port

NPB#                                    configure                       terminal
NPB(config)#                    ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)# match transport destination-port
```

Related Commands

None

24.7 match vlan

Command Purpose

This command configures the fields of vlan in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax

match vlan（inner | ）
no match vlan（inner | ）

Parameter	Parameter Description	Parameter Value
inner	Inner VLAN	-

Command Mode

IPFIX recorder Configuration

Default

None

Usage

None

Examples

This example shows how to configure to use inner vlan in ipfix recorder:

```
NPB#                                    configure                       terminal
NPB(config)#                    ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)# match vlan inner
```

Related Commands

None

24.8 match cos

Command Purpose

This command configures the fields of cos in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax

match cos（inner | ）
no match cos（inner | ）

Parameter	Parameter Description	Parameter Value
inner	Inner COS	-

Command Mode

IPFIX recorder Configuration

Default

None

Usage

None

Examples

This example shows how to configure to use inner cos in ipfix recorder:

```
NPB# configure terminal
NPB(config)# ipfix recorder recorder1
NPB(Config-ipfix-reocrder)# match cos inner
```

Related Commands

None

24.9 match interface (input | output)

Command Purpose

This command configures the fields of interface in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax

match interface (input | output)
no match interface (input | output)

Parameter	Parameter Description	Parameter Value
input	input direction	-
output	output direction	-

Command Mode

IPFIX recorder Configuration

Default

None

Usage

None

Examples

This example shows how to configure input direction in ipfix recorder:

```
NPB# configure terminal
NPB(config)# ipfix recorder recorder1
NPB(Config-ipfix-reocrder)# match interface input
```

Related Commands

None

24.10 match vxlan-vni

Command Purpose

This command configures the fields of vxlan-vni in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax

match vxlan-vni
no match vxlan-vni

Command Mode
IPFIX recorder Configuration

Default
None

Usage
None

Examples
This example shows how to configure to use vxlan-vni in ipfix recorder:

```
NPB#                                    configure                   terminal
NPB(config)#                ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)# match vxlan-vni
```

Related Commands
None

24.11 match nvgre-key

Command Purpose
This command configures the fields of nvgre-key in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
match nvgre-key
no match nvgre-key

Command Mode
IPFIX recorder Configuration

Default
None

Usage
None

Examples
This example shows how to configure to use nvgre-key in ipfix recorder:

```
NPB#                                    configure                   terminal
NPB(config)#                ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)# match nvgre-key
```

Related Commands
None

24.12 match packet (drop | non-drop)

Command Purpose
This command configures the fields of packet in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
match packet (drop | non-drop)
no match packet (drop | non-drop)

Parameter	Parameter Description	Parameter Value
drop	Drop packet	-
non-drop	Non-drop packet	-

Command Mode
IPFIX recorder Configuration

Default
None

Usage
None

Examples
This example shows how to configure to use drop packet:

```
NPB#                                    configure                   terminal
NPB(config)#                ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)# match packet drop
```

Related Commands
None

24.13 collect counter

Command Purpose
this command configures byte number and packet number that needed to be collected in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
collect counter (delta |) （bytes | packets）
no collect counter (delta |) （bytes | packets）

Parameter	Parameter Description	Parameter Value
delta	delta counter	-
bytes	Collect flow with byte number	-
packets	Collect flow with packet number	-

Command Mode
IPFIX recorder Configuration

Default
Without collecting any information

Usage
None

Examples
This example shows how to configure to collect the number of flow's byte in ipfix recorder:

```
NPB#                                    configure                   terminal
NPB(config)#                    ipfix                   recorder    recorder1
NPB(Config-ipfix-reocrder)# collect counter bytes
```

Related Commands
None

24.14 collect flow

Command Purpose
This command configures to collect ipfix flow information in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
collect flow (drop | destination | fragmentation)
no collect flow (drop | destination | fragmentation)

Parameter	Parameter Description	Parameter Value
drop	Only collect the droped flows	-
destination	Collect destination address of flows	-
fragmentation	Only collect the fragmented flows	-

Command Mode
IPFIX recorder Configuration

Default
None

Usage
None

Examples
This example shows how to configure to collect the destination address of flows in ipfix recorder:

```
NPB#                                    configure                   terminal
NPB(config)#                    ipfix                   recorder    recorder1
NPB(Config-ipfix-reocrder)# collect flow destination
```

Related Commands
None

24.15 collect ttl

Command Purpose
This command configures to collect ipfix flow information about ttl in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
collect ttl (maximum | minimum | changed |)
no collect ttl (maximum | minimum | changed |)

Parameter	Parameter Description	Parameter Value
maximum	Collect flow max ttl value	-
minimum	Collect flow min ttl value	-
changed	Collect flow ttl changed history	-

Command Mode
IPFIX recorder Configuration

Default
None

Usage
None

Examples
This example shows how to configure to collect the maximum ttl and minimum ttl of the flows in ipfix recorder:

```
NPB#                                    configure                       terminal
NPB(config)#                    ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)#             collect                 ttl     maximum
NPB(Config-ipfix-reocrder)# collect ttl minimum
```

Related Commands
None

24.16 collect timestamp

Command Purpose
This command configures to collect ipfix flow information about timestamp in ipfix recorder, use the no form of this command to delete this configure.

Command Syntax
collect timestamp (first | last)
no collect timestamp (first | last)

Parameter	Parameter Description	Parameter Value
first	Collect flow start timestamp	-
last	Collect flow end timestamp	-

Command Mode
IPFIX recorder Configuration

Default
None

Usage
None

Examples
This example shows how to configure to collect the timestamp of the flows in ipfix recorder:

```
NPB#                                    configure                       terminal
NPB(config)#                    ipfix                   recorder        recorder1
NPB(Config-ipfix-reocrder)# collect timestamp  first
```

Related Commands
None

24.17 ipfix exporter

Command Purpose

Use this command to create a ipfix exporter and enter exporter configure mode.
To remove the ipfix exporter, use the no form of this command.

Command Syntax

ipfix exporter *NAME*
no ipfix exporter *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix exporter name	Up to 32 characters

Command Mode

Global Configuration

Default

None

Usage

If ipfix exporter has existed，it will enter IPFIX exporter Configuration；if ipfix exporter is new，it will create exporter and enter IPFIX exporter Configuration；this command should work with the other commands .

Examples

This example shows how to create ipfix exporter exporter1in global configuration and enter IPFIX exporter Configuration:

```
NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)#
```

This example shows how to delete ipfix exporter exporter1:

```
NPB# configure terminal
NPB(config)# no ipfix exporter exporter1
```

Related Commands

template data timeout
flow data timeout
event flow start
event flow end (tcp-end|timeout)
transport protocol udp

24.18 description

Command Purpose

This command used to describe ipfix exporter，use the no form of this command to delete this description.

Command Syntax

description *DESCRIPTION*

Parameter	Parameter Description	Parameter Value
DESCRIPTION	Ipfix exporter description	Up to 64 characters

Command Mode

IPFIX exporter Configuration

Default

None

Usage

None

Examples

```
NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)# descrption this is a ipfix exporter

NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)# no description
```

Related Commands

None

24.19 destination

Command Purpose

This command used to configure collecter host name that need to receive flow records in ipfix exporter，use the no form of this command to delete this description.

Command Syntax

destination mgmt-if ipv4 *IPV4_ADDR*
no destination

Parameter	Parameter Description	Parameter Value
IPV4_ADDR	IP address of collector	-

Command Mode

IPFIX exporter Configuration

Default

None

Usage

None

Examples

This example shows how to create a host named host1 in IPFIX exporter Configuration:

```
NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)# destination mgmt-if ipv4 9.0.0.2
```

Related Commands

None

24.20 dscp

Command Purpose

this command used to configure the dscp value of the message that need to be sended in ipfix exporter，use the no form of this command to delete this description.

Command Syntax

dscp *DSCP*

Parameter	Parameter Description	Parameter Value
DSCP	dscp value	0-63

Command Mode

IPFIX exporter Configuration

Default

63

Usage

None

Examples

This example shows how to configure dscp to be 20 in IPFIX exporter Configuration:

```
NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)# dscp 20
```

Related Commands

None

24.21 domain-id

Command Purpose

This command used to configure the ipfix domain value of the message that needs to be sent in ipfix exporter, use the no form of this command to delete this description.

Command Syntax

domain-id *ID*

Parameter	Parameter Description	Parameter Value

ID	domain id	1-65535

Command Mode
IPFIX exporter Configuration
Default
None
Usage
None
Examples
This example shows how to configure domain-id to be 1000 in IPFIX exporter Configuration:
```
NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)# domain-id 1000
```
Related Commands
None

24.22 template data timeout

Command Purpose
This command used to configure time interval of sending template data in ipfix exporter，use the no form of this command to delete this description.
Command Syntax
template data timeout *TIMEOUT*
no template data timeout

Parameter	Parameter Description	Parameter Value
TIMEOUT	template data timeout	1-86400

Command Mode
IPFIX exporter Configuration
Default
600
Usage
None
Examples
This example shows how to configure time interval of sending template data to be 200 seconds in IPFIX exporter Configuration:
```
NPB# configure terminal
NPB(config)# ipfix exporter exporter1
NPB(Config-ipfix-exporter)# template data timeout 200
```
Related Commands
None

24.23 flow data timeout

Command Purpose
This command used to configure time interval of sending flow data in ipfix exporter，use the no form of this command to delete this description.
Command Syntax
flow data timeout *TIMEOUT*
no flow data timeout

Parameter	Parameter Description	Parameter Value
TIMEOUT	flow data timeout	1-86400

Command Mode
IPFIX exporter Configuration
Default
600
Usage
None

Examples

This example shows how to configure time interval of sending flow data to be 200 seconds in IPFIX exporter Configuration:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       exporter                exporter1
NPB(Config-ipfix-exporter)# flow data timeout 200
```

Related Commands

None

24.24 transport protocol

Command Purpose

This command used to configure to use which transport when send message in ipfix exporter，use the no form of this command to delete this description.

Command Syntax

transport protocol udp port *UDP_PORT*

no transport protocol

Parameter	Parameter Description	Parameter Value
UDP_PORT	transport protocol number	Range is 2000 to 65535，Default is 2055

Command Mode

IPFIX exporter Configuration

Default

2055

Usage

None

Examples

This example shows how to configure transport protocol of flow data sended to be udp and its port is 3500 in IPFIX exporter Configuration:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       exporter                exporter1
NPB(Config-ipfix-exporter)# transport protocol udp 3500
```

Related Commands

None

24.25 ttl

Command Purpose

This command used to configure the ttl of the sended message in ipfix exporter，use the no form of this command to delete this description.

Command Syntax

ttl *TTL*

no ttl

Parameter	Parameter Description	Parameter Value
TTL	TTL value	1-255

Command Mode

IPFIX exporter Configuration

Default

255

Usage

None

Examples

This example shows how to configure ttl value of flow data to be 255 in IPFIX exporter Configuration:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       exporter                exporter1
NPB(Config-ipfix-exporter)# ttl 255
```

Related Commands
None

24.26 event flow

Command Purpose
This command used to configure which event should triggle to send flow information at once in ipfix exporter，use the no form of this command to delete this description.

Command Syntax
event flow start
no event flow start
event flow end (tcp-end | timeout)
no event flow end (tcp-end | timeout)

Command Mode
IPFIX exporter Configuration

Default
None

Usage
None

Examples
This example shows how to configure the event about ending tcp transmission of flow data will triggle to send flow information in IPFIX exporter Configuration:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                   exporter                    exporter1
NPB(Config-ipfix-exporter)# event flow tcp-end
```

Related Commands
None

24.27 flow data flush threshold length

Command Purpose
This command used to configure the threshold.When the threshold is reached,flow information should be sent at once in ipfix exporter

Command Syntax
flow data flush threshold length *LENGTH*

Parameter	Parameter Description	Parameter Value
LENGTH	length threshold value	1000-60000

Command Mode
IPFIX exporter Configuration

Default
1416

Usage
None

Examples
This example shows how to configure the length threshold value about flow data in IPFIX exporter Configuration.When the threshod is reached,flow data information will be sent at once.:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                   exporter                    exporter1
NPB(Config-ipfix-exporter)# flow data flush threshold length 2000
```

Related Commands
None

24.28 flow data flush threshold timer

Command Purpose

This command used to configure the threshold.When the threshold is reached,flow information should be sent at once in ipfix exporter

Command Syntax

flow data flush threshold timer *TIMER*

Parameter	Parameter Description	Parameter Value
TIMER	timer threshold value	100-60000

Command Mode

IPFIX exporter Configuration

Default

500

Usage

None

Examples

This example shows how to configure the timer threshold value in IPFIX exporter Configuration.When the threshod is reached,flow data information will be sent at once.:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       exporter                exporter1
NPB(Config-ipfix-exporter)# flow data flush threshold timer 1000
```

Related Commands

None

24.29 flow data flush threshold count

Command Purpose

This command used to configure the threshold.When the threshold is reached,flow information should be sent at once in ipfix exporter

Command Syntax

flow data flush threshold count *COUNT*

Parameter	Parameter Description	Parameter Value
COUNT	count threshold value	1-100

Command Mode

IPFIX exporter Configuration

Default

10

Usage

None

Examples

This example shows how to configure the count threshold value about flow data in IPFIX exporter Configuration.When the threshod is reached,flow data information will be sent at once.:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       exporter                exporter1
NPB(Config-ipfix-exporter)# flow data flush threshold count 20
```

Related Commands

None

24.30 ipfix sampler

Command Purpose

Use this command to create a ipfix sampler and enter sampler configure mode. To remove the ipfix sampler, use the no form of this command.

Command Syntax

ipfix sampler *NAME*

no ipfix sampler *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix sampler name	Up to 32 characters

Command Mode
Global Configuration

Default
None

Usage
If ipfix sampler has existed，it will enter IPFIX sampler Configuration; if ipfix sampler is new，it will create sampler and enter IPFIX sampler Configuration；this command should work with the command of match and collect.

Examples
This example shows how to create ipfix sampler sampler1 in global configuration and enter IPFIX sampler Configuration:

```
NPB#                                configure                terminal
NPB(config)#          ipfix         sampler        sampler   1
NPB(Config-ipfix-sampler)#
```

This example shows how to delete ipfix sampler sampler1:

```
NPB#                                configure                terminal
NPB(config)# no ipfix sampler sampler1
```

Related Commands
1 out-of

24.31 description

Command Purpose

Command Syntax
description *DESCRIPTION*

Parameter	Parameter Description	Parameter Value
DESCRIPTION	ipfix sampler description	Up to 64 characters

Command Mode
IPFIX sampler Configuration

Default
None

Usage
None

Examples

```
NPB#                                configure                terminal
NPB(config)#          ipfix         sampler        sampler   1
NPB(Config-ipfix-sampler)#  descrption  this  is  a  ipfix  sampler

NPB#                                configure                terminal
NPB(config)#          ipfix         sampler        sampler   1
NPB(Config-ipfix-sampler)# no description
```

Related Commands
None

24.32 1 out-of

Command Purpose
This command used to configure the rate of ipfix sampler，use the no form of this command to delete this configure.

Command Syntax
1 out of *CLI_IPFIX_SAMPLER_RATE_RNG*

Parameter	Parameter Description	Parameter Value
CLI_IPFIX_SAMPLER_RATE_RNG	How many packets will sample one packet	2-8191

Command Mode
IPFIX sampler Configuration

Default

None

Usage

None

Examples

This example shows how to configure the rate of sampling is 1/100 in IPFIX sampler Configuration:

```
NPB# configure terminal
NPB(config)# ipfix sampler sampler 1
NPB(Config-ipfix-sampler)# 1 out of 100
```

Related Commands

None

24.33 ipfix monitor

Command Purpose

Use this command to create a ipfix monitor and enter monitor configure mode. To remove the ipfix monitor, use the no form of this command.

Command Syntax

ipfix monitor *NAME*
no ipfix monitor *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix monitor name	Up to 32 characters

Command Mode

Global Configuration

Default

None

Usage

None

Examples

This example shows how to create ipfix monitor monitor1 in global configuration and enter IPFIX monitor Configuration:

```
NPB# configure terminal
NPB(config)# ipfix monitor monitor1
NPB(Config-ipfix-monitor)#
```

This example shows how to delete ipfix monitor monitor1:

```
NPB# configure terminal
NPB(config)# no ipfix monitor monitor1
```

Related Commands

recorder
exporter

24.34 description

Command Purpose

Command Syntax

description *DESCRIPTION*

Parameter	Parameter Description	Parameter Value
DESCRIPTION	The length of ipfix monitor description should not exceed 64 characters	Up to 64 characters

Command Mode

IPFIX monitor Configuration

Default

None

Usage

None

Examples

Add descriptoin for IPFIX monitor:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       monitor                 monitor1
NPB(Config-ipfix-monitor)# descrption this is a ipfix monitor
```

Remove description:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       monitor                 monitor1
NPB(Config-ipfix-monitor)# no description
```

Related Commands

None

24.35 recorder

Command Purpose

Use this command to create a ipfix recorder of the ipfix monitor. To remove the ipfix monitor, use the no form of this command.

Command Syntax

recorder *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix recorder name	Up to 32 characters

Command Mode

IPFIX monitor Configuration

Default

None

Usage

None

Examples

This example shows how to create a recorder of the ipfix monitor configure mode:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       monitor                 monitor1
NPB(Config-ipfix-monitor)# recorder recorder1
```

Related Commands

None

24.36 exporter

Command Purpose

Use this command to create a ipfix exporter of the ipfix monitor. To remove the ipfix monitor, use the no form of this command.

Command Syntax

exporter *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix exporter name	Up to 32 characters

Command Mode

IPFIX monitor Configuration

Default

None

Usage

None

Examples

This example shows how to create a exporter of the ipfix monitor configure mode:

```
NPB#                                    configure                                   terminal
NPB(config)#                    ipfix                       monitor                 monitor1
NPB(Config-ipfix-monitor)# exporter exporter1
```

Related Commands

None

24.37 ipfix monitor

Command Purpose

This command used to enable ipfix.

Command Syntax

ipfix monitor (input | output) *NAME* (sampler *NAME* |)

no ipfix monitor (input | output)

Parameter	Parameter Description	Parameter Value
input	do ipfix for the inputed packets	-
output	do ipfix for the outputed packets	-
NAME	IPFIX monitor name	Up to 32 characters
sampler NAME	IPFIX sampler name	Up to 32 characters

Command Mode

Interface Configuration

Default

None

Usage

None

Examples

This example shows how to enable ipfix:

```
NPB#                                    configure                    terminal
NPB(config)#                              interface                    eth-0-1
NPB(config-if)# ipfix monitor input monitor sampler test-sample
```

Related Commands

None

24.38 ipfix global

Command Purpose

Use this command to enter ipfix global configure mode.

Command Syntax

ipfix global

Command Mode

Global Configuration

Default

None

Usage

None

Examples

This example shows how to enter ipfix global configure mode:

```
NPB#                                    configure                    terminal
NPB(config)# ipfix global
```

Related Commands

None

24.39 flow aging

Command Purpose

Use this command to configure ipfix global flow aging interval.

Command Syntax

flow aging *INTERVAL*

Parameter	Parameter Description	Parameter Value
INTERVAL	The aging time of the flow	Range is 15 to 65535, the default is 1800 seconds

Command Mode
IPFIX Global Configuration

Default
None

Usage
None

Examples
This example shows how to configure the aging time to be 200 seconds in global configure mode:

```
NPB#                                  configure                terminal
NPB(config)#                          ipfix                    global
NPB(config-ipfix-global)# flow aging 200
```

Related Commands
None

24.40 flow export

Command Purpose
Use this command to configure ipfix global flow export interval.

Command Syntax
flow export *INTERVAL*

Parameter	Parameter Description	Parameter Value
INTERVAL	The export time of the flow	Range is 0 to 1000, the default is 5 seconds

Command Mode
IPFIX Global Configuration

Default
None

Usage
None

Examples
This example shows how to configure the export time to be 200 seconds in global configure mode:

```
NPB#                                  configure                terminal
NPB(config)#                          ipfix                    global
NPB(config-ipfix-global)# flow export 200
```

Related Commands
None

24.41 flow sampler

Command Purpose
Use this command to configure ipfix flow sampler mode.

Command Syntax
flow sampler (new | all)

Parameter	Parameter Description	Parameter Value
new	only sample new flow	-
all	sample all flow	-

Command Mode
IPFIX Global Configuration

Default
all

Usage
None

Examples
This example shows how to configure the ipfix sampler to sample all flow in IPFIX global Configuration:

```
NPB# configure terminal
NPB(config)# ipfix global
NPB(config-ipfix-global)# flow sampler all
```

Related Commands

None

24.42 show ipfix global

Command Purpose

Use the show ipfix global privileged EXEC command to display the configure information of ipfix global.

Command Syntax

show ipfix global

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to display configuration about ipfix global in privileged EXEC mode:

```
NPB# show ipfix global
```

Related Commands

None

24.43 show ipfix recorder

Command Purpose

Use the show ipfix recorde privileged EXEC command to display the configure information of one ipfix recorder.

Command Syntax

show ipfix recorder *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix recorder name	Up to 32 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to show ipfix recorder command:

```
NPB# show ipfix recorder recorder1

IPFIX recorder information:
  Name : recorder1
  Description :
  Match info :
    match Source Mac Address
    match IPv4 Source Address
    match IPv4 Destination Address
    match Vxlanvni
  Collect info :
    collect Flow Byte Number
    collect Flow Packet Number
```

Related Commands

None

24.44 show ipfix exporter

Command Purpose

Use the show ipfix exporter privileged EXEC command to display the configure information of one ipfix exporter.

Command Syntax

show ipfix exporter *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix exporter name	Up to 32 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to display configuration about exporter1 in privileged EXEC mode:

```
NPB# show ipfix exporter exporter1

IPFIX exporter information:
  Name : exporter1
  Description :
  Domain ID : 0
  Collector Name : 9.0.0.2
  IPFIX message protocol : UDP
  IPFIX message destination Port : 2055
  IPFIX message TTL value : 255
  IPFIX message DSCP value : 63
  IPFIX data interval : 200
  IPFIX template interval : 1800
  IPFIX exporter events :
    Flow aging event
```

Related Commands

None

24.45 show ipfix cache

Command Purpose

This command used to show the state information of the ipfix on the interface.

Command Syntax

show ipfix cache observe-point interface *IFNAME* (input | output)
show ipfix cache monitor *NAME*
show ipfix cache counter observe-point interface *IFNAME*
show ipfix cache counter monitor *NAME*

Parameter	Parameter Description	Parameter Value
IFNAME	Interface name	Support physical ports
NAME	ipfix monitor name	Up to 32 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to show the state information of the ipfix on the interface eth-0-1in privileged EXEC mode:

```
NPB# show ipfix cache observe-point interface eth-0-1 input
```

```
Cache dir : input
Cache flow profile : 0
Cache key profile : 0
Cache key info :
  Source mac : 0000.0002.0001
  ipsa : 10.10.10.3/32
  ipda : 10.10.10.1/32
Cache collect info:
  Byte number of ingress : 64
  Packet number of ingress : 1
```

Related Commands

None

24.46 show ipfix monitor

Command Purpose

This command used to describe the configration of the ipfix monitor.

Command Syntax

show ipfix monitor *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix monitor name	Up to 32 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to display configuration of monitor 1 in privileged EXEC mode:

```
NPB# show ipfix monitor monitor1

IPFIX monitor information:
  Name : monitor1
  Description :
  Recorder : recorder1
  exporter : exporter1
```

Related Commands

None

24.47 show ipfix sampler

Command Purpose

This command used to describe the configration of the ipfix sampler.

Command Syntax

show ipfix sampler *NAME*

Parameter	Parameter Description	Parameter Value
NAME	ipfix sampler name	Up to 32 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to display configuration of sampler1 in privileged EXEC mode:

```
NPB# show ipfix sampler sampler1

IPFIX sampler information:
  Name : sampler1
  Description :
  Rate : 100
  Sample mode : determinate
  Flow mode : all
```

Related Commands

None

24.48 clear ipfix cache monitor

Command Purpose

This command used to clear cache with ipfix monitor name.

Command Syntax

clear ipfix cache monitor *NAME*

Parameter	Parameter Description	Parameter Value
NAME	IPFIX monitor name	Up to 32 characters

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to clear ipfix cache with name test in privileged EXEC mode:

```
NPB# clear ipfix cache monitor test
```

Related Commands

None

24.49 clear ipfix cache observe-point interface

Command Purpose

This command used to clear cache on interface.

Command Syntax

clear ipfix cache observe-point interface (*IFNAME*) (input | output)

	Parameter Description	Parameter Value
IFPHYSICAL	Name of interface	Support physical
input	the inputed packets	-
output	the outputed packets	-

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

This example shows how to clear ipfix cache on interface eth-0-1 in privileged EXEC mode:

```
NPB# clear ipfix cache observe-point interface eth-0-1 input
```

Related Commands