P Commands

This chapter describes the Cisco Nexus 1000V commands that begin with the letter P.

packet vlan

To identify a packet VLAN, use the **packet vlan** command. To remove the packet vlan, use the **no** form of this command.

packet vlan {*vlan-number*}

no packet vlan {*vlan-number*}

Syntax Description

vlan-number	Specifies the packet VLAN ID. The range of values is 1 to 3967 and 4048 to 4093.

Defaults

None

Command Modes

SVS Domain (config-svs-domain)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

Examples

This example shows how to create packet VLAN 261:

```
n1000v# configure terminal
n1000v(config)# svs-domain
```

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```
n1000v(config-svs-domain)# packet vlan 261
n1000v(config-svs-domain)#
```

This example shows how to remove the packet VLAN 261:

```
n1000v# configure terminal
n1000v(config)# svs-domain
n1000v(config-svs-domain)# no packet vlan 261
n1000v(config-svs-domain)#
```

Related Commands

Command	Description
show running-config	Displays information about the running configuration on the switch.

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permit (IPv4)

To create an IPv4 access control list (ACL) rule that permits traffic matching its conditions, use the **permit** command. To remove a rule, use the **no** form of this command.

General Syntax

[*sequence-number*] **permit** *protocol source destination* [**dscp** *dscp* | **precedence** *precedence*]

no permit *protocol source destination* [**dscp** *dscp* | **precedence** *precedence*]

no *sequence-number*

Internet Control Message Protocol

[*sequence-number*] **permit icmp** *source destination* [*icmp-message*] [**dscp** *dscp* | **precedence** *precedence*]

Internet Group Management Protocol

[*sequence-number*] **permit igmp** *source destination* [*igmp-message*] [**dscp** *dscp* | **precedence** *precedence*]

Internet Protocol v4

[*sequence-number*] **permit ip** *source destination* [**dscp** *dscp* | **precedence** *precedence*]

Transmission Control Protocol

[*sequence-number*] **permit tcp** *source* [*operator port* [*port*] | **portgroup** *portgroup*] *destination* [*operator port* [*port*] | **portgroup** *portgroup*] [**dscp** *dscp* | **precedence** *precedence*]

User Datagram Protocol

[*sequence-number*] **permit udp** *source* [*operator port* [*port*] | **portgroup** *portgroup*] *destination* [*operator port* [*port*] | **portgroup** *portgroup*] [**dscp** *dscp* | **precedence** *precedence*]

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Syntax Description

sequence-number	(Optional) Sequence number of the **permit** command, which causes the device to insert the command in that numbered position in the access list. Sequence numbers maintain the order of rules within an ACL. A sequence number can be any integer between 1 and 4294967295. By default, the first rule in an ACL has a sequence number of 10. If you do not specify a sequence number, the device adds the rule to the end of the ACL and assigns a sequence number that is 10 greater than the sequence number of the preceding rule. Use the **resequence** command to reassign sequence numbers to rules.
protocol	Name or number of the protocol of packets that the rule matches. Valid numbers are from 0 to 255. Valid protocol names are the following keywords: • **icmp**—Specifies that the rule applies to ICMP traffic only. When you use this keyword, the *icmp-message* argument is available, in addition to the keywords that are available for all valid values of the *protocol* argument. • **igmp**—Specifies that the rule applies to IGMP traffic only. When you use this keyword, the *igmp-type* argument is available, in addition to the keywords that are available for all valid values of the *protocol* argument. • **ip**—Specifies that the rule applies to all IPv4 traffic. When you use this keyword, only the other keywords and arguments that apply to all IPv4 protocols are available. They include the following: – **dscp** – **precedence** • **tcp**—Specifies that the rule applies to TCP traffic only. When you use this keyword, the *flags* and *operator* arguments and the **portgroup** and **established** keywords are available, in addition to the keywords that are available for all valid values of the *protocol* argument. • **udp**—Specifies that the rule applies to UDP traffic only. When you use this keyword, the *operator* argument and the **portgroup** keyword are available, in addition to the keywords that are available for all valid values of the *protocol* argument.
source	Source IPv4 addresses that the rule matches. For details about the methods that you can use to specify this argument, see “Source and Destination” in the “Usage Guidelines” section.
destination	Destination IPv4 addresses that the rule matches. For details about the methods that you can use to specify this argument, see “Source and Destination” in the “Usage Guidelines” section.

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dscp *dscp*	(Optional) Specifies that the rule matches only those packets with the specified 6-bit differentiated services value in the DSCP field of the IP header. The *dscp* argument can be one of the following numbers or keywords: • 0–63—The decimal equivalent of the 6 bits of the DSCP field. For example, if you specify 10, the rule matches only those packets that have the following bits in the DSCP field: 001010. • **af11**—Assured Forwarding (AF) class 1, low drop probability (001010) • **af12**—AF class 1, medium drop probability (001100) • **af13**—AF class 1, high drop probability (001110) • **af21**—AF class 2, low drop probability (010010) • **af22**—AF class 2, medium drop probability (010100) • **af23**—AF class 2, high drop probability (010110) • **af31**—AF class 3, low drop probability (011010) • **af32**—AF class 3, medium drop probability (011100) • **af33**—AF class 3, high drop probability (011110) • **af41**—AF class 4, low drop probability (100010) • **af42**—AF class 4, medium drop probability (100100) • **af43**—AF class 4, high drop probability (100110) • **cs1**—Class-selector (CS) 1, precedence 1 (001000) • **cs2**—CS2, precedence 2 (010000) • **cs3**—CS3, precedence 3 (011000) • **cs4**—CS4, precedence 4 (100000) • **cs5**—CS5, precedence 5 (101000) • **cs6**—CS6, precedence 6 (110000) • **cs7**—CS7, precedence 7 (111000) • **default**—Default DSCP value (000000) • **if**—Expedited Forwarding (101110)

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precedence *precedence*	(Optional) Specifies that the rule matches only packets that have an IP Precedence field with the value specified by the *precedence* argument. The *precedence* argument can be a number or a keyword, as follows: • 0–7—Decimal equivalent of the 3 bits of the IP Precedence field. For example, if you specify 3, the rule matches only packets that have the following bits in the DSCP field: 011. • **critical**—Precedence 5 (101) • **flash**—Precedence 3 (011) • **flash-override**—Precedence 4 (100) • **immediate**—Precedence 2 (010) • **internet**—Precedence 6 (110) • **network**—Precedence 7 (111) • **priority**—Precedence 1 (001) • **routine**—Precedence 0 (000)
icmp-message	(ICMP only: Optional) ICMP message type that the rule matches. This argument can be an integer from 0 to 255 or one of the keywords listed under "ICMP Message Types" in the "Usage Guidelines" section.
igmp-message	(IGMP only: Optional) IGMP message type that the rule matches. The *igmp-message* argument can be the IGMP message number, which is an integer from 0 to 15. It can also be one of the following keywords: • **dvmrp**—Distance Vector Multicast Routing Protocol • **host-query**—Host query • **host-report**—Host report • **pim**—Protocol Independent Multicast • **trace**—Multicast trace

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operator port [*port*]	(Optional; TCP and UDP only) Rule matches only packets that are from a source port or sent to a destination port that satisfies the conditions of the *operator* and *port* arguments. Whether these arguments apply to a source port or a destination port depends upon whether you specify them after the *source* argument or after the *destination* argument. The *port* argument can be the name or the number of a TCP or UDP port. Valid numbers are integers from 0 to 65535. For listings of valid port names, see "TCP Port Names" and "UDP Port Names" in the "Usage Guidelines" section. A second *port* argument is required only when the *operator* argument is a range. The *operator* argument must be one of the following keywords: • **eq**—Matches only if the port in the packet is equal to the *port* argument. • **gt**—Matches only if the port in the packet is greater than and not equal to the *port* argument. • **lt**—Matches only if the port in the packet is less than and not equal to the *port* argument. • **neq**—Matches only if the port in the packet is not equal to the *port* argument. • **range**—Requires two *port* arguments and matches only if the port in the packet is equal to or greater than the first *port* argument and equal to or less than the second *port* argument.
flags	(TCP only; Optional) TCP control bit flags that the rule matches. The value of the *flags* argument must be one or more of the following keywords: • **ack** • **fin** • **psh** • **rst** • **syn** • **urg**

Defaults

A newly created IPv4 ACL contains no rules.

If you do not specify a sequence number, the device assigns to the rule a sequence number that is 10 greater than the last rule in the ACL.

Command Modes

IPv4 ACL configuration

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

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Usage Guidelines

When the device applies an IPv4 ACL to a packet, it evaluates the packet with every rule in the ACL. The device enforces the first rule that has conditions that are satisfied by the packet. When the conditions of more than one rule are satisfied, the device enforces the rule with the lowest sequence number.

Source and Destination

You can specify the *source* and *destination* arguments in one of several ways. In each rule, the method you use to specify one of these arguments does not affect how you specify the other. When you configure a rule, use the following methods to specify the *source* and *destination* arguments:

- Address and network wildcard—You can use an IPv4 address followed by a network wildcard to specify a host or a network as a source or destination. The syntax is as follows:

  IPv4-address network-wildcard

  The following example shows how to specify the *source* argument with the IPv4 address and network wildcard for the 192.168.67.0 subnet:

  ```
  n1000v(config-acl)# permit tcp 192.168.67.0 0.0.0.255 any
  ```

- Address and variable-length subnet mask—You can use an IPv4 address followed by a variable-length subnet mask (VLSM) to specify a host or a network as a source or destination. The syntax is as follows:

  IPv4-address/prefix-len

  The following example shows how to specify the *source* argument with the IPv4 address and VLSM for the 192.168.67.0 subnet:

  ```
  n1000v(config-acl)# permit udp 192.168.67.0/24 any
  ```

- Host address—You can use the **host** keyword and an IPv4 address to specify a host as a source or destination. The syntax is as follows:

  host *IPv4-address*

  This syntax is equivalent to *IPv4-address*/32 and *IPv4-address* 0.0.0.0.

  The following example shows how to specify the *source* argument with the **host** keyword and the 192.168.67.132 IPv4 address:

  ```
  n1000v(config-acl)# permit icmp host 192.168.67.132 any
  ```

- Any address—You can use the **any** keyword to specify that a source or destination is any IPv4 address. For examples of the use of the **any** keyword, see the examples in this section. Each example shows how to specify a source or destination by using the **any** keyword.

ICMP Message Types

The *icmp-message* argument can be the ICMP message number, which is an integer from 0 to 255. It can also be one of the following keywords:

- **administratively-prohibited**—Administratively prohibited
- **alternate-address**—Alternate address
- **conversion-error**—Datagram conversion
- **dod-host-prohibited**—Host prohibited
- **dod-net-prohibited**—Net prohibited
- **echo**—Echo (ping)
- **echo-reply**—Echo reply

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- **general-parameter-problem**—Parameter problem
- **host-isolated**—Host isolated
- **host-precedence-unreachable**—Host unreachable for precedence
- **host-redirect**—Host redirect
- **host-tos-redirect**—Host redirect for ToS
- **host-tos-unreachable**—Host unreachable for ToS
- **host-unknown**—Host unknown
- **host-unreachable**—Host unreachable
- **information-reply**—Information replies
- **information-request**—Information requests
- **mask-reply**—Mask replies
- **mask-request**—Mask requests
- **mobile-redirect**—Mobile host redirect
- **net-redirect**—Network redirect
- **net-tos-redirect**—Net redirect for ToS
- **net-tos-unreachable**—Network unreachable for ToS
- **net-unreachable**—Net unreachable
- **network-unknown**—Network unknown
- **no-room-for-option**—Parameter required but no room
- **option-missing**—Parameter required but not present
- **packet-too-big**—Fragmentation needed and DF set
- **parameter-problem**—All parameter problems
- **port-unreachable**—Port unreachable
- **precedence-unreachable**—Precedence cutoff
- **protocol-unreachable**—Protocol unreachable
- **reassembly-timeout**—Reassembly timeout
- **redirect**—All redirects
- **router-advertisement**—Router discovery advertisements
- **router-solicitation**—Router discovery solicitations
- **source-quench**—Source quenches
- **source-route-failed**—Source route failed
- **time-exceeded**—All time exceeded messages
- **timestamp-reply**—Timestamp replies
- **timestamp-request**—Timestamp requests
- **traceroute**—Traceroute
- **ttl-exceeded**—TTL exceeded
- **unreachable**—All unreachables

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TCP Port Names

When you specify the *protocol* argument as **tcp**, the *port* argument can be a TCP port number, which is an integer from 0 to 65535. It can also be one of the following keywords:

bgp—Border Gateway Protocol (179)

chargen—Character generator (19)

cmd—Remote commands (rcmd, 514)

daytime—Daytime (13)

discard—Discard (9)

domain—Domain Name Service (53)

drip—Dynamic Routing Information Protocol (3949)

echo—Echo (7)

exec—Exec (rsh, 512)

finger—Finger (79)

ftp—File Transfer Protocol (21)

ftp-data—FTP data connections (2)

gopher—Gopher (7)

hostname—NIC hostname server (11)

ident—Ident Protocol (113)

irc—Internet Relay Chat (194)

klogin—Kerberos login (543)

kshell—Kerberos shell (544)

login—Login (rlogin, 513)

lpd—Printer service (515)

nntp—Network News Transport Protocol (119)

pim-auto-rp—PIM Auto-RP (496)

pop2—Post Office Protocol v2 (19)

pop3—Post Office Protocol v3 (11)

smtp—Simple Mail Transport Protocol (25)

sunrpc—Sun Remote Procedure Call (111)

tacacs—TAC Access Control System (49)

talk—Talk (517)

telnet—Telnet (23)

time—Time (37)

uucp—UNIX-to-UNIX Copy Program (54)

whois—WHOIS/NICNAME (43)

www—World Wide Web (HTTP, 8)

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UDP Port Names

When you specify the *protocol* argument as **udp**, the *port* argument can be a UDP port number, which is an integer from 0 to 65535. It can also be one of the following keywords:

biff—Biff (mail notification, comsat, 512)

bootpc—Bootstrap Protocol (BOOTP) client (68)

bootps—Bootstrap Protocol (BOOTP) server (67)

discard—Discard (9)

dnsix—DNSIX security protocol auditing (195)

domain—Domain Name Service (DNS, 53)

echo—Echo (7)

isakmp—Internet Security Association and Key Management Protocol (5)

mobile-ip—Mobile IP registration (434)

nameserver—IEN116 name service (obsolete, 42)

netbios-dgm—NetBIOS datagram service (138)

netbios-ns—NetBIOS name service (137)

netbios-ss—NetBIOS session service (139)

non500-isakmp—Internet Security Association and Key Management Protocol (45)

ntp—Network Time Protocol (123)

pim-auto-rp—PIM Auto-RP (496)

rip—Routing Information Protocol (router, in.routed, 52)

snmp—Simple Network Management Protocol (161)

snmptrap—SNMP Traps (162)

sunrpc—Sun Remote Procedure Call (111)

syslog—System Logger (514)

tacacs—TAC Access Control System (49)

talk—Talk (517)

tftp—Trivial File Transfer Protocol (69)

time—Time (37)

who—Who service (rwho, 513)

xdmcp—X Display Manager Control Protocol (177)

Examples

This example shows how to configure an IPv4 ACL named acl-lab-01 with rules permitting all TCP and UDP traffic from the 10.23.0.0 and 192.168.37.0 networks to the 10.176.0.0 network:

```
n1000v# config t
n1000v(config)# ip access-list acl-lab-01
n1000v(config-acl)# permit tcp 10.23.0.0/16 10.176.0.0/16
n1000v(config-acl)# permit udp 10.23.0.0/16 10.176.0.0/16
n1000v(config-acl)# permit tcp 192.168.37.0/16 10.176.0.0/16
n1000v(config-acl)# permit udp 192.168.37.0/16 10.176.0.0/16
```

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This example shows how to configure an IPv4 ACL named acl-eng-to-marketing with a rule that permits all IP traffic from an IP-address object group named eng_workstations to an IP-address object group named marketing_group:

```
n1000v# config t
n1000v(config)# ip access-list acl-eng-to-marketing
n1000v(config-acl)# permit ip addrgroup eng_workstations addrgroup marketing_group
```

Related Commands

Command	Description
deny (IPv4)	Configures a deny rule in an IPv4 ACL.
ip access-list	Configures an IPv4 ACL.
remark	Configures a remark in an ACL.
show ip access-list	Displays all IPv4 ACLs or one IPv4 ACL.
statistics per-entry	Enables collection of statistics for each entry in an ACL.

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permit (MAC)

To create a MAC ACL rule that permits traffic matching its conditions, use the **permit** command. To remove a rule, use the **no** form of this command.

[*sequence-number*] **permit** *source destination* [*protocol*] [**cos** *cos-value*] [**vlan** *VLAN-ID*]

no permit *source destination* [*protocol*] [**cos** *cos-value*] [**vlan** *VLAN-ID*]

no *sequence-number*

Syntax Description

sequence-number	(Optional) Sequence number of the **permit** command, which causes the device to insert the command in that numbered position in the access list. Sequence numbers maintain the order of rules within an ACL. A sequence number can be any integer between 1 and 4294967295. By default, the first rule in an ACL has a sequence number of 10. If you do not specify a sequence number, the device adds the rule to the end of the ACL and assigns a sequence number that is 10 greater than the sequence number of the preceding rule. Use the **resequence** command to reassign sequence numbers to rules.
source	Source MAC addresses that the rule matches. For details about the methods that you can use to specify this argument, see “Source and Destination” in the “Usage Guidelines” section.
destination	Destination MAC addresses that the rule matches. For details about the methods that you can use to specify this argument, see “Source and Destination” in the “Usage Guidelines” section.
protocol	(Optional) Protocol number that the rule matches. Valid protocol numbers are 0x0 to 0xffff. For listings of valid protocol names, see “MAC Protocols” in the “Usage Guidelines” section.
cos *cos-value*	(Optional) Specifies that the rule matches only packets with an IEEE 802.1Q header that contains the Class of Service (CoS) value given in the *cos-value* argument. The *cos-value* argument can be an integer from 0 to 7.
vlan *VLAN-ID*	(Optional) Specifies that the rule matches only packets with an IEEE 802.1Q header that contains the VLAN ID given. The *VLAN-ID* argument can be an integer from 1 to 4094.

Defaults

None

Command Modes

MAC ACL configuration

SupportedUserRoles

network-admin

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Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

A newly created MAC ACL contains no rules.

If you do not specify a sequence number, the device assigns a sequence number that is 10 greater than the last rule in the ACL.

When the device applies a MAC ACL to a packet, it evaluates the packet with every rule in the ACL. The device enforces the first rule that has conditions that are satisfied by the packet. When the conditions of more than one rule are satisfied, the device enforces the rule with the lowest sequence number.

Source and Destination

You can specify the *source* and *destination* arguments in one of two ways. In each rule, the method you use to specify one of these arguments does not affect how you specify the other. When you configure a rule, use the following methods to specify the *source* and *destination* arguments:

- Address and mask—You can use a MAC address followed by a mask to specify a single address or a group of addresses. The syntax is as follows:

  MAC-address MAC-mask

  The following example specifies the *source* argument with the MAC address 00c0.4f03.0a72:

  ```
  n1000v(config-acl)# permit 00c0.4f03.0a72 0000.0000.0000 any
  ```

  The following example specifies the *destination* argument with a MAC address for all hosts with a MAC vendor code of 00603e:

  ```
  n1000v(config-acl)# permit any 0060.3e00.0000 0000.0000.0000
  ```

- Any address—You can use the **any** keyword to specify that a source or destination is any MAC address. For examples of the use of the **any** keyword, see the examples in this section. Each of the examples shows how to specify a source or destination by using the **any** keyword.

MAC Protocols

The *protocol* argument can be the MAC protocol number or a keyword. The protocol number is a four-byte hexadecimal number prefixed with 0x. Valid protocol numbers are from 0x0 to 0xffff. Valid keywords are the following:

- **aarp**—Appletalk ARP (0x80f3)
- **appletalk**—Appletalk (0x809b)
- **decnet-iv**—DECnet Phase IV (0x6003)
- **diagnostic**—DEC Diagnostic Protocol (0x6005)
- **etype-6000**—Ethertype 0x6000 (0x6000)
- **etype-8042**—Ethertype 0x8042 (0x8042)
- **ip**—Internet Protocol v4 (0x0800)
- **lat**—DEC LAT (0x6004)
- **lavc-sca**—DEC LAVC, SCA (0x6007)
- **mop-console**—DEC MOP Remote console (0x6002)
- **mop-dump**—DEC MOP dump (0x6001)

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- **vines-echo**—VINES Echo (0x0baf)

Examples

This example shows how to configure a MAC ACL named mac-ip-filter with a rule that permits all IPv4 traffic between two groups of MAC addresses:

```
n1000v# config t
n1000v(config)# mac access-list mac-ip-filter
n1000v(config-mac-acl)# permit 00c0.4f00.0000 0000.00ff.ffff 0060.3e00.0000 0000.00ff.ffff
ip
```

Related Commands

Command	Description
deny (MAC)	Configures a deny rule in a MAC ACL.
mac access-list	Configures a MAC ACL.
remark	Configures a remark in an ACL.
statistics per-entry	Enables collection of statistics for each entry in an ACL.
show mac access-list	Displays all MAC ACLs or one MAC ACL.

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ping

To determine the network connectivity to another device using IPv4 addressing, use the **ping** command.

ping [*dest-ipv4-address* | *hostname* | **mulitcast** *multicast-group-address* **interface [ethernet** *slot/port* | **loopback** *number* | **mgmt0** | **port-channel** *channel-number* | **vethernet** *number*]] [**count** {*number* | **unlimited**}] [**df-bit**] [**interval** *seconds*] [**packet-size** *bytes*] [**source** *src-ipv4-address*] [**timeout** *seconds*] [**vrf** *vrf-name*]

Syntax Description

dest-ipv4-address	IPv4 address of destination device. The format is *A.B.C.D*.
hostname	Hostname of destination device. The hostname is case sensitive.
multicast	Multicast ping.
multicast-group-address	Multicast group address. The format is *A.B.C.D*.
interface	Specifies the interface to send the multicast packet.
ethernet *slot/port*	Specifies the slot and port number for the Ethernet interface.
loopback *number*	Specifies a virtual interface number from 0 to 1023.
mgmt0	Specifies the management interface.
port-channel *channel-number*	Specifies a port-channel interface in the range 1 to 4096.
vethernet *number*	Specifies a virtual Ethernet interface in the range 1 to 1048575.
count	(Optional) Specifies the number of transmissions to send.
number	Number of pings. The range is from 1 to 655350. The default is 5.
unlimited	Allows an unlimited number of pings.
df-bit	(Optional) Enables the do-not-fragment bit in the IPv4 header. The default is disabled.
interval *seconds*	(Optional) Specifies the interval in seconds between transmissions. The range is from 0 to 60. The default is 1 second.
packet-size *bytes*	(Optional) Specifies the packet size in bytes to transmit. The range is from 1 to 65468. The default is 56 bytes.
source *scr-ipv4-address*	(Optional) Specifies the source IPv4 address to use. The format is *A.B.C.D*. The default is the IPv4 address for the management interface of the device.
timeout *seconds*	(Optional) Specifies the nonresponse timeout interval in seconds. The range is from 1 to 60. The default is 2 seconds.
vrf *vrf-name*	(Optional) Specifies the virtual routing and forwarding (VRF) name. The default is the default VRF.

Defaults

For the default values, see the “Syntax Description” section for this command.

Command Modes

Any

SupportedUserRoles

network-admin

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Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

To determine the network connectivity to another device using IPv6 addressing, use the **ping6** command.

Examples

This example shows how to determine connectivity to another device using IPv4 addressing:

```
n1000v# ping 172.28.231.246 vrf management
PING 172.28.231.246 (172.28.231.246): 56 data bytes
Request 0 timed out
64 bytes from 172.28.231.246: icmp_seq=1 ttl=63 time=0.799 ms
64 bytes from 172.28.231.246: icmp_seq=2 ttl=63 time=0.597 ms
64 bytes from 172.28.231.246: icmp_seq=3 ttl=63 time=0.711 ms
64 bytes from 172.28.231.246: icmp_seq=4 ttl=63 time=0.67 ms

--- 172.28.231.246 ping statistics ---
5 packets transmitted, 4 packets received, 20.00% packet loss
round-trip min/avg/max = 0.597/0.694/0.799 ms
```

Related Commands

Command	Description
ping6	Determines connectivity to another device using IPv6 addressing.

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police

To control traffic rates, use the **police** command. To remove control, use the **no** form of this command.

police {{[**cir**] {*cir* [**bps**|**kbps**|**mbps**|**gbps**] | **percent** *cir-percent*} [[**bc**] {*committed-burst* [**bytes**|**kbytes**|**mbytes**|**ms**|**us**]}] [**pir** {*pir-* [**bps2**|**kbps2**|**mbps2**|**gbps2**] | **percent** *pir-percent*} [[**be**] {*extended-burst* [**bytes2**|**kbytes2**|**mbytes2**|**ms2**|**us2**]}]] [**conform** {**transmit** | **set-prec-transmit** {*precedence-number*} | **set-dscp-transmit** {*dscp-value* | *dscp-number*} | **set-cos-transmit** *cos-value* | **set-discard-class-transmit** *discard-class-value* | **set-qos-transmit** *qos-group-value*} [**exceed** {**drop1** | **set** *exc-from-field exc-to-field* **table** **cir-markdown-map**}] [**violate** {**drop2** | **set** *vio-from-field vio-to-field* **table2** **pir-markdown-map**}]]}}

no police {{[**cir**] {*cir* [**bps**|**kbps**|**mbps**|**gbps**] | **percent** *cir-percent*} [[**bc**] {*committed-burst* [**bytes**|**kbytes**|**mbytes**|**ms**|**us**]}] [**pir** {*pir* [**bps2**|**kbps2**|**mbps2**|**gbps2**] | **percent** *pir-percent*} [[**be**] {*extended-burst* [**bytes2**|**kbytes2**|**mbytes2**|**ms2**|**us2**]}]] [**conform** {**transmit** | **set-prec-transmit** {*precedence-number*} | **set-dscp-transmit** {*dscp-value* | *dscp-number*} | **set-cos-transmit** *cos-value* | **set-discard-class-transmit** *discard-class-value* | **set-qos-transmit** *qos-group-value*} [**exceed** {**drop1** | **set** *exc-from-field exc-to-field* **table** **cir-markdown-map**}] [**violate** {**drop2** | **set** *vio-from-field vio-to-field* **table2** **pir-markdown-map**}]]}}

Syntax Description

cir	(Optional) Specifies CIR (Committed Information Rate).
cir	Committed Information Rate in **bps** or **kbps** or **mbps** or **gbps**.
bps	(Optional) Specifies bits per second.
kbps	(Optional) Specifies kilobits per second.
mbps	(Optional) Specifies megabits per second.
gbps	(Optional) Specifies gigabits per second.
percent	Specifies CIR (Committed Information Rate) percentage.
cir-percent	CIR percentage.
bc	(Optional) Specifies BC (Burst Commit).
committed-burst	Packet burst.
bytes	(Optional) Specifies burst size in bytes.
kbytes	(Optional) Specifies burst size in kilobytes.
mbytes	(Optional) Specifies burst size in megabytes.
ms	(Optional) Specifies burst interval in milliseconds.
us	(Optional) Specifies burst interval in microseconds.
pir	(Optional) Specifies PIR (Peak Information Rate).
pir	Peak Information Rate in **bps** or **kbps** or **mbps** or **gbps**.
bps2	(Optional) Specifies bits per second.
kbps2	(Optional) Specifies kilobits per second.
mbps2	(Optional) Specifies megabits per second.
gbps2	(Optional) Specifies gigabits per second.
be	(Optional) Specifies extended burst.
extended-burst	Extended packet burst.

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ms2	(Optional) Specifies burst interval in milliseconds.
us2	(Optional) Specifies burst interval in microseconds.
conform	(Optional) Specifies a conform action.
transmit	Specifies packet transmission.
set-prec-transmit	Specifies a precedence and transmits it.
precedence-number	Precedence number. The following are valid numbers: • 0—Routine precedence • 1—Priority precedence • i2—Immediate precedence • 3—Flash precedence • 4—Flash override precedence • 5—Critical precedence • 6—Internetwork control precedence • 7— Network control precedence
set-dscp-transmit	Specifies a DSCP (Differentiated Services Code Point) and transmits it.
dscp-number	DSCP number or code. The range of valid values is 1 to 63. You can also set DSCP to one of the following codes: • af11—AF11 dscp (001010) • af12—AF12 dscp (001100) • af13—AF13 dscp (001110) • af21—AF21 dscp (010010) • af22—AF22 dscp (010100) • af23—AF23 dscp (010110) • af31—AF31 dscp (011010) • af32—AF32 dscp (011100) • af33—AF33 dscp (011110) • af41—AF41 dscp (100010) • af42—AF42 dscp (100100) • af43—AF43 dscp (100110) • cs1—CS1(precedence 1) dscp (001000) • cs2—CS2(precedence 2) dscp (010000) • cs3—CS3(precedence 3) dscp (011000) • cs4—CS4(precedence 4) dscp (100000) • cs5—CS5(precedence 5) dscp (101000) • cs6—CS6(precedence 6) dscp (110000) • cs7—CS7(precedence 7) dscp (111000) • default—default dscp (000000) • ef—EF dscp (101110)

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set-cos-transmit	Specifies a CoS number and transmits it.
cos-value	CoS group number. The range of valid values is 0 to 7.
set-discard-class-transmit	Specifies a discard class number and transmits it.
discard-class-value	The discard class number. The range of valid values is 0 to 63.
set-qos-transmit	Specifies a QoS group number and transmits it.
qos-group-value	QoS group number. The range of valid values is 0 to 126.
exceed	(Optional) Specifies an exceed action.
drop1	Specifies that packets are to be dropped.
set	Specifies a particular value in a table or markdown map.
exc-from-field	.
exc-to-field	.
table	.
cir-markdown-map	.
violate	(Optional) Specifies a violate action.
drop2	.Specifies that packets are to be dropped.
vio-from-field	.
vio-to-field	.
table2	.
pir-markdown-map	.

Defaults

None

Command Modes

Policy map configuration (config-pmap-c-qos)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Examples

This example shows how to control traffic rates:

```
n1000v# configure terminal
n1000v(config)# policy-map pm10
n1000v(config-pmap-qos)# class class-default
n1000v(config-pmap-c-qos)# police 100000 bps 10000 bytes
n1000v(config-pmap-c-qos)#
```

Related Commands

Send document comments to nexus1k-docfeedback@cisco.com.

Command	Description
show qos	Displays QoS information.

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policy-map

To create and configure policy maps, use the **policy-map** command. To remove policy maps, use the **no** form of this command.

policy-map {*name* | **type qos** *name*}

no policy-map {*name* | **type qos** *name*}

Syntax Description

name	Policy map name. The range of valid values is 1 to 40.
type qos	Specifies the policy map type as QoS.

Defaults

The policy map does not exist.

Command Modes

Global Configuration (config)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

When you create or configure a policy map, you automatically enter configure policy map mode.

Examples

This example shows how to create policy maps:

```
n1000v# configure terminal
n1000v(config)# policy-map pm20
n1000v(config-pmap-qos)#
```

This example shows how to remove policy maps:

```
n1000v# configure terminal
n1000v(config)# no policy-map pm20
n1000v(config)#
```

Related Commands

Command	Description
show policy-map	Displays policy map information.

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port-channel load-balance ethernet

To set the load-balancing method among the interfaces in the channel-group bundle, use the **port-channel load-balance ethernet** command. To return the system priority to the default value, use the **no** form of this command.

port-channel load-balance ethernet *method* [**module** *slot*]

no port-channel load-balance ethernet [*method* [**module** *slot*]]

Syntax Description

method	Load-balancing method. See the "Usage Guidelines" section for a list of valid values.
module	(Optional) Specifies a module number. The range is 1 to 66.

Defaults

Layer 2 packets—**source-mac**

Layer 3 packets—**source-mac**

Command Modes

Global Configuration (config)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

When you do not specify a module, you are configuring load balancing for the entire device. When you use the **module** parameter, you are configuring load balancing for the specified modules

Valid *method* values are as follows:

- **dest-ip-port**—Loads distribution on the destination IP address and L4 port.
- **dest-ip-port-vlan**—Loads distribution on the destination IP address, L4 port, and VLAN.
- **destination-ip-vlan**—Loads distribution on the destination IP address and VLAN
- **destination-mac**—Loads distribution on the destination MAC address.
- **destination-port**—Loads distribution on the destination L4 port.
- **source-dest-ip-port**—Loads distribution on the source and destination IP address and L4 port.
- **source-dest-ip-port-vlan**—Loads distribution on the source and destination IP address, L4 port, and VLAN.
- **source-dest-ip-vlan**—Loads distribution on the source and destination IP address and VLAN.
- **source-dest-mac**—Loads distribution on the source and destination MAC address.
- **source-dest-port**—Loads distribution on the source and destination L4 port.

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- **source-ip-port**—Loads distribution on the source IP address.
- **source-ip-port-vlan**—Loads distribution on the source IP address, L4, and VLAN
- **source-ip-vlan**—Loads distribution on the source IP address and VLAN.
- **source-mac**—Loads distribution on the source MAC address.
- **source-port**—Loads distribution on the source port.
- **source-virtual-port-id**—Loads distribution on the source virtual port ID.
- **vlan-only**—Loads distribution on the VLAN only.

Use the **module** argument to configure the module independently for port-channeling and load-balancing mode. When you do this, the remaining module use the current load-balancing method configured for the entire device, or the default method if you have not configured a method for the entire device. When you enter the **no** argument in conjunction with a **module** argument, the load-balancing method for the specified module takes the current load-balancing method that is in use for the entire device. If you configured a load-balancing method for the entire device, the specified module uses that configured method, rather than the default **source-mac**. The per module configuration takes precedence over the load-balancing method configured for the entire device.

Use the option that provides the balance criteria with the greatest variety in your configuration. For example, if the traffic on a port channel is going only to a single MAC address and you use the destination MAC address as the basis of port channel load balancing, the port channel always chooses the same link in that port channel; using source addresses or IP addresses might result in better load balancing.

Examples

This example shows how to set the load-balancing method for the entire device to use the source port:

```
n1000v(config)# port-channel load-balance ethernet src-port
n1000v(config)#
```

Related Commands

Command	Description
show port-channel load-balance	Displays information on port-channel load balancing.

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port-profile

To create a port profile and enter port-profile configuration mode, use the **port-profile** command. To remove the port profile configuration, use the **no** form of this command.

port-profile *name*

no port-profile *name*

Syntax Description

name	Specifies the port profile name. The name can be up to 80 characters in length.

Defaults

None

Command Modes

Global Configuration (config)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

The port profile name must be unique for each port profile on the Nexus 1000V.

Examples

This example shows how to create a port profile with the name AccessProf:

```
n1000v# configure terminal
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)
```

This example shows how to remove the port profile with the name AccessProf:

```
n1000v# configure terminal
n1000v(config)# no port-profile AccessProf
n1000v(config)
```

Related Commands

Command	Description
show port-profile name	Displays information about the port profiles.

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private-vlan association

To configure an association between a primary and secondary private VLAN, use the **private-vlan association** command. To remove the association, use the **no** form of this command.

private-vlan association [{**add** | **remove**}] *secondary-vlan-ids*

no private-vlan association [*secondary-vlan-ids*]

Syntax Description

add	Adds a secondary VLAN to a private VLAN list.
remove	Removes a secondary VLAN from a private VLAN list.
secondary-vlan-ids	IDs of the secondary VLANs to be added or removed.

Defaults

None

Command Modes

VLAN (config-vlan)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

You must enable the private VLAN feature (**feature private-vlan** command) before the private VLAN commands are visible in the CLI for configuration.

Examples

This example shows how to associate primary VLAN 202 with secondary VLAN 303:

```
n1000v#configure t
n1000v(config)# vlan 202
n1000v(config-vlan)# private-vlan association add 303
n1000v(config-vlan)#
```

Related Commands

Command	Description
private-vlan primary	Designates the private VLAN as primary.
private-vlan {**community** | **isolated**}	Designates the private VLAN as community or isolated.
show vlan private-vlan	Displays the private VLAN configuration.

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private-vlan { community | isolated}

To designate a VLAN as either a community or isolated private VLAN, use the **private-vlan** {**community | isolated**} command. To remove the configuration, use the **no** form of this command.

private-vlan {**community | isolated**}

no private-vlan {**community | isolated**}

Syntax Description

community	Designates the VLAN as a community private VLAN.
isolated	Designates the VLAN as an isolated private VLAN.

Defaults

None

Command Modes

VLAN (config-vlan)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

You must enable the private VLAN feature (**feature private-vlan** command) before the private VLAN commands are visible in the CLI for configuration.

Examples

This example shows how to configure VLAN 303 as a community private VLAN:

```
n1000v#configure t
n1000v(config)# vlan 303
n1000v(config-vlan)# private-vlan community
n1000v(config-vlan)#
```

Related Commands

Command	Description
private-vlan primary	Designates the private VLAN as primary.
private-vlan association	Configures an association between a primary VLAN and a secondary VLAN
show vlan private-vlan	Displays the private VLAN configuration.

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private-vlan primary

To designate a private VLAN as a primary VLAN, use the **private-vlan primary** command. To remove the configuration, use the **no** form of this command.

private-vlan primary

no private-vlan primary

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

VLAN (config-vlan)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

You must enable the private VLAN feature (**feature private-vlan** command) before the private VLAN commands are visible in the CLI for configuration.

Examples

This example shows how to configure VLAN 202 as the primary VLAN in a private VLAN:

```
n1000v#configure t
n1000v(config)# vlan 202
n1000v(config-vlan)# private-vlan primary
n1000v(config-vlan)# show vlan private-vlan
Primary Secondary Type Ports
------- --------- --------------- ----------------------------------------------
202 primary
n1000v(config-vlan)#
```

Related Commands

Command	Description
private-vlan {**community** | **isolated**}	Designates the private VLAN as community or isolated.
show vlan private-vlan	Displays the private VLAN configuration.
private-vlan association	Associates a primary and secondary private VLAN.

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protocol vmware-vim

To enable the VMware VI SDK, use the **protocol vmware-vim** command. To disable the VMware VI SDK, use the **no** form of this command.

protocol vmware-vim

no protocol vmware-vim

Syntax Description

This command has no arguments or keywords.

Defaults

The VMware VI SDK is disabled.

Command Modes

SVS connection configuration (config-svs-conn)

SupportedUserRoles

network-admin

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Usage Guidelines

The VMware VI SDK is published by VMware and it allows clients to talk to VMware vCenter.

You must first create an SVS connection before you you enable the VMware VI SDK.

Examples

This example shows how to enable the VMware VI SDK.:

```
n1000v# configure terminal
n1000v(config)# svs connection svs1
n1000v(config-svs-conn)# protocol vmware-vim
n1000v(config-svs-conn)#
```

Related Commands

Command	Description
show svs connection	Displays SVS connection information.

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pwd

To view the current directory, use the **pwd** command.

pwd

Syntax Description

This command has no arguments or keywords.

Defaults

None

Command Modes

Any

SupportedUserRoles

network-admin
network-operator

Command History

Release	Modification
4.0(4)SV1(1)	This command was introduced.

Examples

This example shows how to view the current directory:

```
n1000v# pwd
bootflash:
n1000v#
```