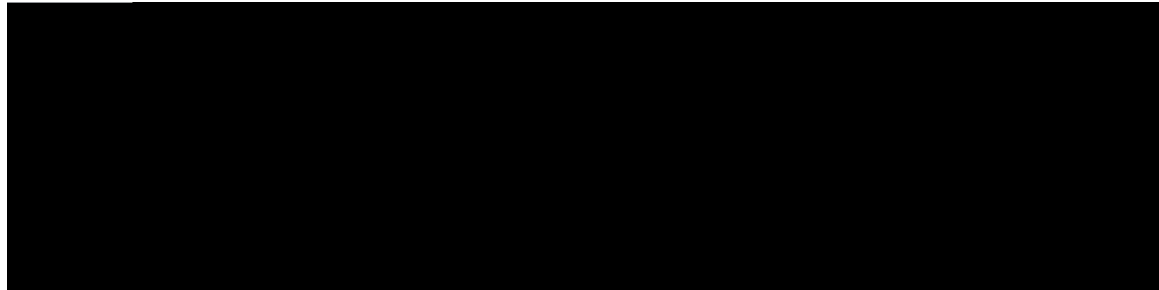


Cisco IOS LAN Switching Command Reference

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CONTENTS

[gvrp timer](#) 62

[gvrp vlan create](#) 64

[hw-module slot \(ASR 1000 Series\)](#) 66

[instance](#)

mode dot1q-in-dot1q access-gateway 137

monitor session 141mo=

rep

[show mvr](#) 328

[show mvr groups](#) 330

[show mvr interface](#) 332

[show](#)

[show vlan remote-span](#) 414
[show vlan virtual-port](#) 415
[show vlan-range](#) 417
[show vlans dot1q](#) 418
[show vlans tokenring](#) 424
[show vlan-switch](#) 425
[show vtp](#) 428
[shutdown vlan](#) 439
[snmp trap mac-notification change](#) 440

spanning-tree portfast

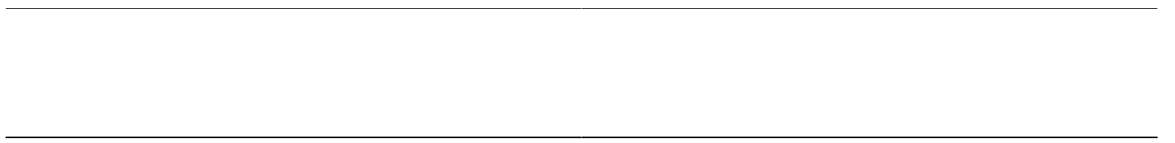


bridge-domain through instance VLAN

- [gvrp global](#), page 56
- [gvrp mac-learning auto](#), page 58
- [gvrp registration](#), page 60
- [gvrp timer](#), page 62
- [gvrp vlan](#)

bridge-domain

T



The following example shows how to enable BPDU translation when a Catalyst 6500 series switch is connected to a device that understands only IEEE BPDUs in an RFC 1483-compliant topology:

```
Router(config-if-atm-vc)# dtkfig/fqockp  
322 rxuv/vnx 372
```

The **kipqtg/drfw/rkf** keyword is not used because

bridge-domain (subinterface)

To enable bridging across Gigabit Ethernet subinterfaces,

Command History

Release	Modification
12.2(33)SRA	This command was introduced.

Usage Guidelines

This

bridge-vlan

Release	Modification
	This command was replaced by the dtkf ig/fq o clp (subinterface) command. See the "Usage Guidelines" section for

Examples

This example shows how to configure a double-tag-to-single-tag translation of packets that are tagged with both an inner customer-edge VLAN of 41 and an outer

```
Router(config)# kpvgtthceg IG/YCP 61303223
```

```
Router(config-subif)# dtkfig/xncp 4 fqv3s/vwppgn qwv/tcpig
```

```
% bridge-vlan 2 does not have any inner-vlan configured.  
out-of-range configuration needs at least one inner-vlan  
defined to determine the range.
```

```
Router(config-subif)#
```

This example shows the system message that appears when you attempt to specify a VLAN ID that is already

clear gvrp statistics

To clear Generic VLAN Registration Protocol

The **rtqvqeqn {cuukipgf | kr | krz| qvjgt}** keywords are supported on Cisco 7600 series routers that are configured with a Supervisor Engine 2 only.

Enter the **engct o ce/c f f tguu/vcdngf {pc o ke}** command

clear mvr counters

To clear the join counters of



clear spanning-tree detected-protocol

To restart the protocol migration process, use the `clear spanning-tree detected-protocol` command in privileged EXEC mode.

```
clear spanning-tree detected-protocol
```

of its ports when it is connected

This command _

clear vlan counters

To clear the software-cached counter values to start from zero again for a specified VLAN or all existing VLANs, use the **clear vlan counters** command in privileged EXEC mode.

clear vlan counters [*vlan-id*]

Syntax Description

clear vlan mapping

To delete existing

clear vlan statistics

To remove virtual LAN (VLAN) statistics from any statically or system-configured entries, use the **clear vlan statistics** command in privileged EXEC mode.

clear vlan statistics

Syntax Description This command has no arguments or keywords.

Command Default VLAN statistics are not removed.

Command Modes Privileged EXEC (#)

Command History

clear vtp counters

To clear VLAN Trunk

collect top counters interface

To list the TopN

debug udl

To enable the debugging of UniDirectional Link Detection (UDLD) protocol, use the **fgdwi wfnf** command in the privileged EXEC mode. To disable the debugging

The following is sample output from the **fgdwi wfnf tgikuvtkgu** command:

```
Router# fgdwi wfnf tgikuvtkgu  
UDLD registries debugging is on
```

Related Commands

dot1q tunneling ethertype

To

Examples

The following example

encapsulation dot1q

To enable IEEE 802.1Q encapsulation of traffic on

Command Default

IEEE 802.1Q encapsulation is disabled.

Command Modes

Interface range configuration (config-int-range) Subinterface configuration (config-ifsub)

Command History



Command	Description
	Displays information

encapsulation isl

To enable the Inter-Switch Link (ISL), use the `spanning-tree encapsulation isl` command

Related Commands

encapsulation sde

To enable IEEE 802.1Q encapsulation of traffic on a specified subinterface in virtual LANs (VLANs), use the **encapsulation** command in subinterface configuration mode. To disable IEEE 802.1Q encapsulation, use

- Token Ring

Examples

The following example

flowcontrol

Release	Modification
	This

flowcontrol (line)

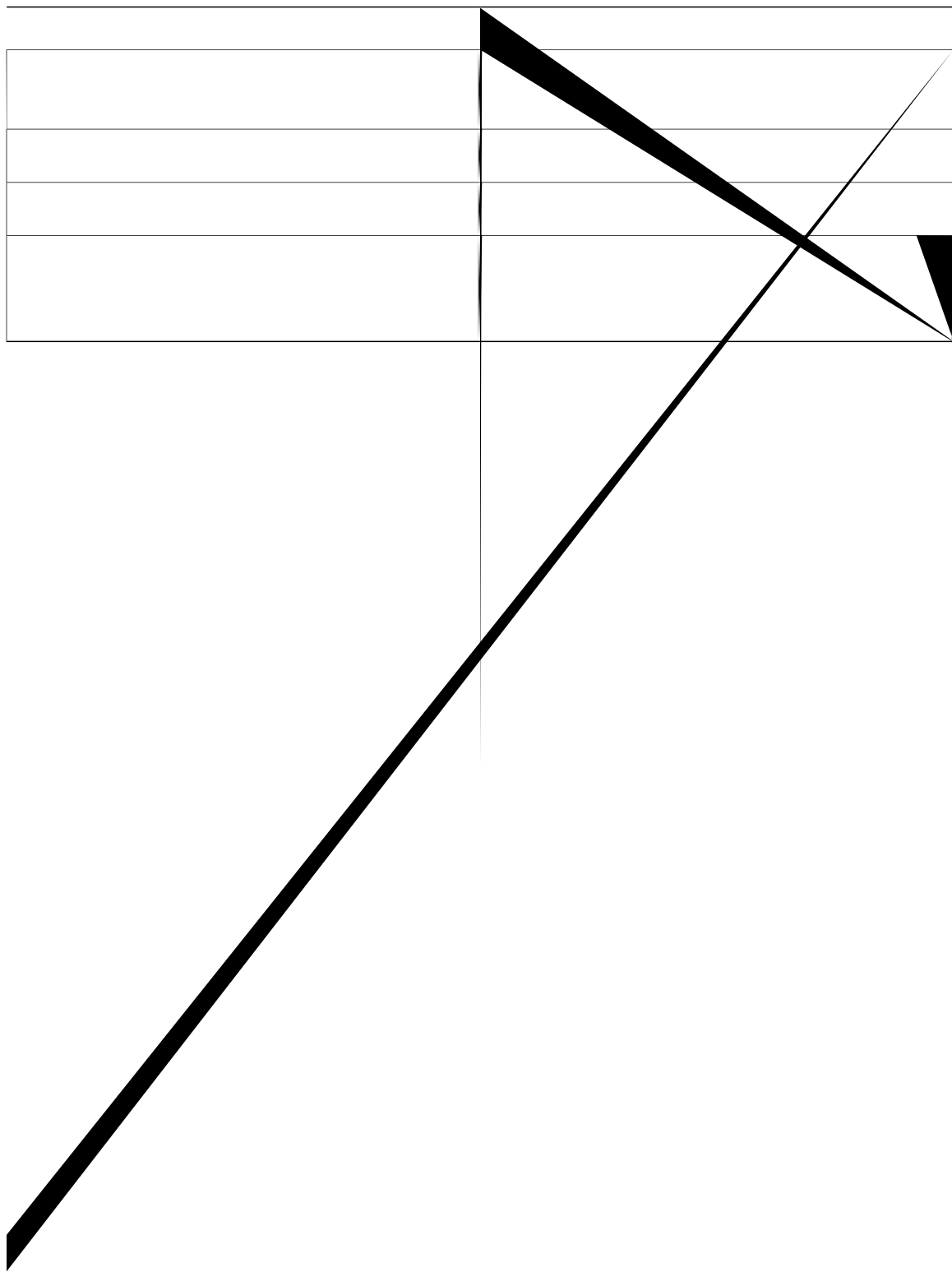
Usage Guidelines

When software flow control is set, the default stop and start characters are Ctrl-S and Ctrl-Q (XOFF and XON). You can change them using the **uvqr/ejctcevgt** and **uvctv/ejctcevgt** commands.

If

gvrp global

To enable Generic VLAN Registration Protocol (GVRP) globally on a device and on an interface, use the **ixtrinqcn**



gvrp mac-learning auto

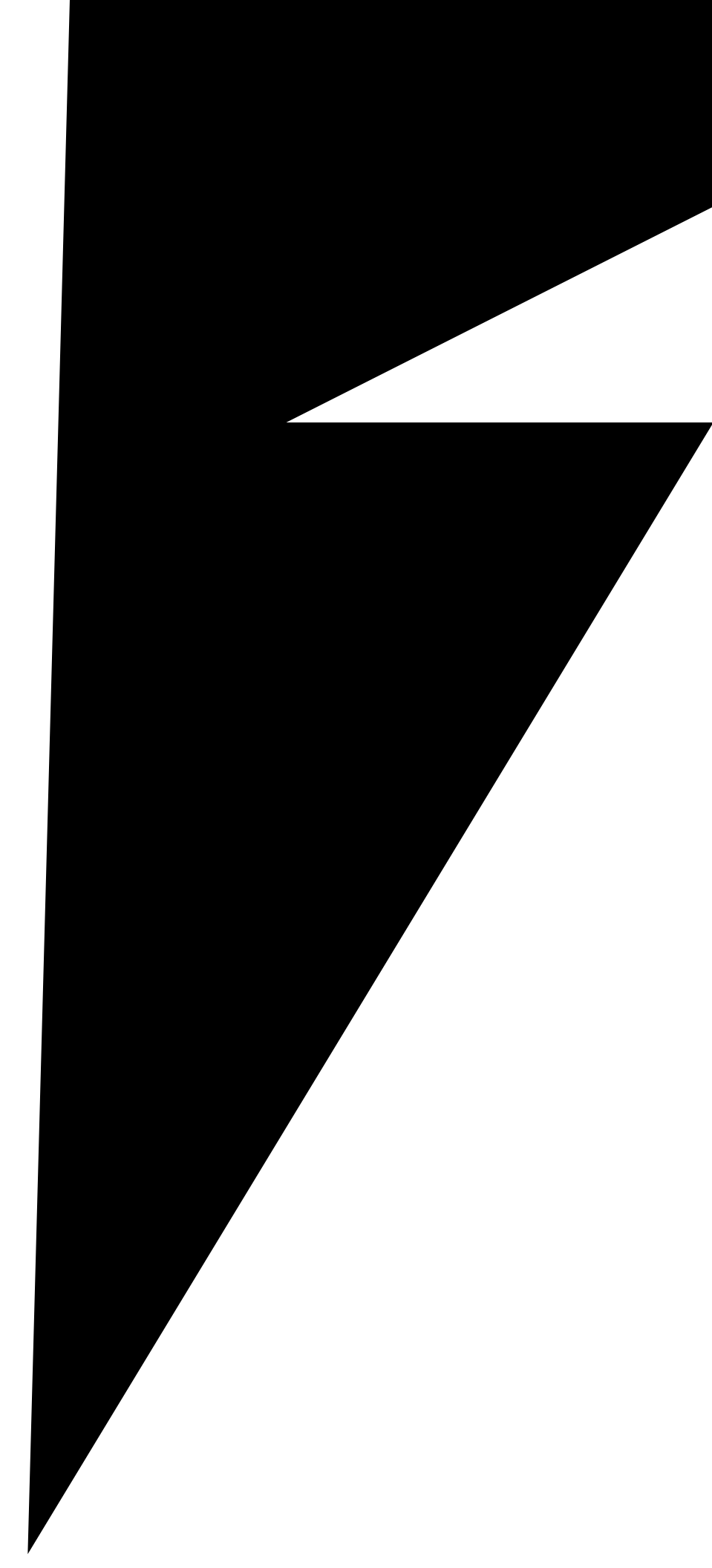
gvrp registration

T

Related Commands

gvrp timer

To set period timers that are used in General Attribute Registration



hw-module slot (ASR 1000 Series)

Usage Guidelines

The **jufofwunqv** command

The

instance (VLAN)

To map a

I2protocol forward

To process or forward layer 2 Bridge Protocol Data Units (BPDU), use the `ip2protocol forward` command in the interface configuration mode. To disable the command, use the `no ip2protocol forward` form of this

- [rep block port](#), page 203
- [rep lsl-ageout timer](#), page 207
- [rep lsl-retries](#), page 209
- [rep preempt delay](#), page 211
- [rep preempt segment](#), page 213
- [rep segment](#), page 215
- [rep](#)

mac access-group

To use

Examples

The

mac access-list extended

To create an extended MAC access control list (ACL) and define its access control entries (ACEs), use the

When you enter the ACL name, follow these naming conventions:

- Maximum of 31 characters and may include a-z, A-Z, 0-9, the dash character (-), the underscore character (_), and the

- **xkpgu/kr** --EtherType: VINES IP
- **xvr** --VTP packets
- **zpu/kfr** --EtherType: XNS IDP

When you enter the *ute/occeocum* or *fguv/occeocum*value, o

ke - c- «

mac-address-table aging-time

To configure the

Examples

The following

mac-address-table dynamic

To

Cisco 2600 Series, Cisco 3600 Series, and

Command History

mac-address-table evc-xconnect l2pt-forward-all

To forward the Layer 2 Control Protocol (L2CP) frames at the hardware level except the CFM frames, use the `mac-address-table evc-xconnect l2pt-forward-all` command in global configuration mode. In addition

mac-address-table learning

To

Examples

This example shows how to enable MAC-address learning on a switch-port interface on all modules:

```
Router(config)# oce/cfftguu/vcdng ngctpkpi xncp 322  
Router(config)#
```

This example shows how to enable MAC-address learning on a switch-port interface on a specified module:

```
Router(config)# oce/cfftguu/vcdng ngctpkpi xncp 322 oqfwng 6  
Router(config)#
```

This example shows how to disable MAC-address learning on a specified switch-port interface for all modules:

```
Router(config)# pq oce/cfftguu/vcdng ngctpkpi xncp 322  
Router(config)#
```

This example shows how to enable MAC-address learning on a routed interface on all modules:

```
Router(config)# oce/cfftguu/vcdng ngctpkpi xncp 322  
Router(config)#
```

This example shows how to enable MAC-address learning on a routed interface for a specific module:

```
Router(config)# oce/cfftguu/vcdng ngctpkpi kpvgtgthceg HcuvGvjgtpgv 516: oqfwng 6  
Router(config)#
```

This example shows how to disable MAC-address learning for all modules on a specific routed interface:

```
Router(config)# pq oce/cfftguu/vcdng ngctpkpi kpvgtgthceg HcuvGvjgtpgv 516:  
Router(config)#
```

Related Commands

Command	Description
ujqy o ce/cfftguu/vcdng ngctpkpi	Displays the MAC-address learning state.

mac-address-table limit

To enable the MAC limiting functionality and set the limit to be imposed, use the `mac-address-table limit` command in global configuration mode. T

Command Default

The defaults are as follows:

- **oczowo** *pwd* is **722**

mac-address-table notification change

mac-address-table notification mac-move

To enable MAC-move notification, use the `mac-move enable` command in global configuration mode. To disable MAC-move

Examples

This example shows how to enable MAC-move notification:

```
Router(config)# oce/cfftguu/vcdng pqvkhkecvkqp oce/oqxg  
This
```

mac-address-table secure

To add secure addresses to the MAC address table, u

mac-address-table unicast-flood

To enable unicast-flood protection, use the `o ce/c f t g u / v c d n g w p k e c u v / h n q q f` command in global

- Set the

match (VLAN access-map)



mls rp ip (interface)

To enable the external systems to enable Multilayer Switching

mls rp ip multicast

To enable IP multicast multilayer switching (MLS) (hardware switching) on an

mls rp ip multicast management-interface

To assign a different interface (other than the default) to act as the management interface for Multilayer Switching (MLS), use the

Examples

The following example shows how to configure the Fast Ethernet interface as the management interface "

mls rp ipx (global)

To enable the router as a multilayer switching (MLS) IPX Route Processor (RP), or to allow the external systems to enable MLS IPX to P

Related Commands

mls rp ipx (interface)

To enable multilayer switching (MLS) Internetwork Packet Exchange (IPX) on a

mls rp locate ipx

To display information about all switches currently shortcutting for the specified Internetwork Packet Exchange (IPX) flows, use the **mls rp locate ipx** command in privileged EXEC mode.

mls

mls rp management-interface

To specify an interface as the management interface, use the `mls rp management-interface interface` command in interface configuration mode. To remove an interface as the management interface, use the `no` form of this

mls rp nde-address

To specify a NetFlow Data

- *kr/cfftlo cumdkvu* --Simplified long subnet address format. The mask bits specify the number of bits of the network masks. For example, 172.22.252.00/22 indicates a 22-bit subnet address. The *kr/cfft* is a

mls rp vlan-id

To assign a VLAN identification number to an interface, use the

mls switching

To

mls switching unicast

To enable

```
mode dot1q-in-dot1q access-gateway
```

To enable a Gigabit Ethernet W

In Cisco IOS Release 12.2(18)SXE and later releases, you can also combine

```
Router(config-if)# oqfg fqv3s/kp/fqv3s ceeguu/icvgyc{  
% interface GE-WAN3/0 has IM
```


monitor session

To start a new Switched Port Analyzer (SPAN) session or add interfaces for an existing SPAN session, use the `monitor session` command in global configuration mode. To remove

Table 3: Supervisor Engine 720 Local SPAN, RSPAN, and ERSPAN Source and Destination Limits

Table 4: Supervisor Engine 2 Local SPAN and RaI SP

Examples

Examples

The following example shows how to add a destination VLAN to an existing SPAN session:

```
Router(config)# oqpkvqt uguukqp 3 fguvkpcvkqp kpvgtthceg hcuvGvjgtpgv 412
```

Examples

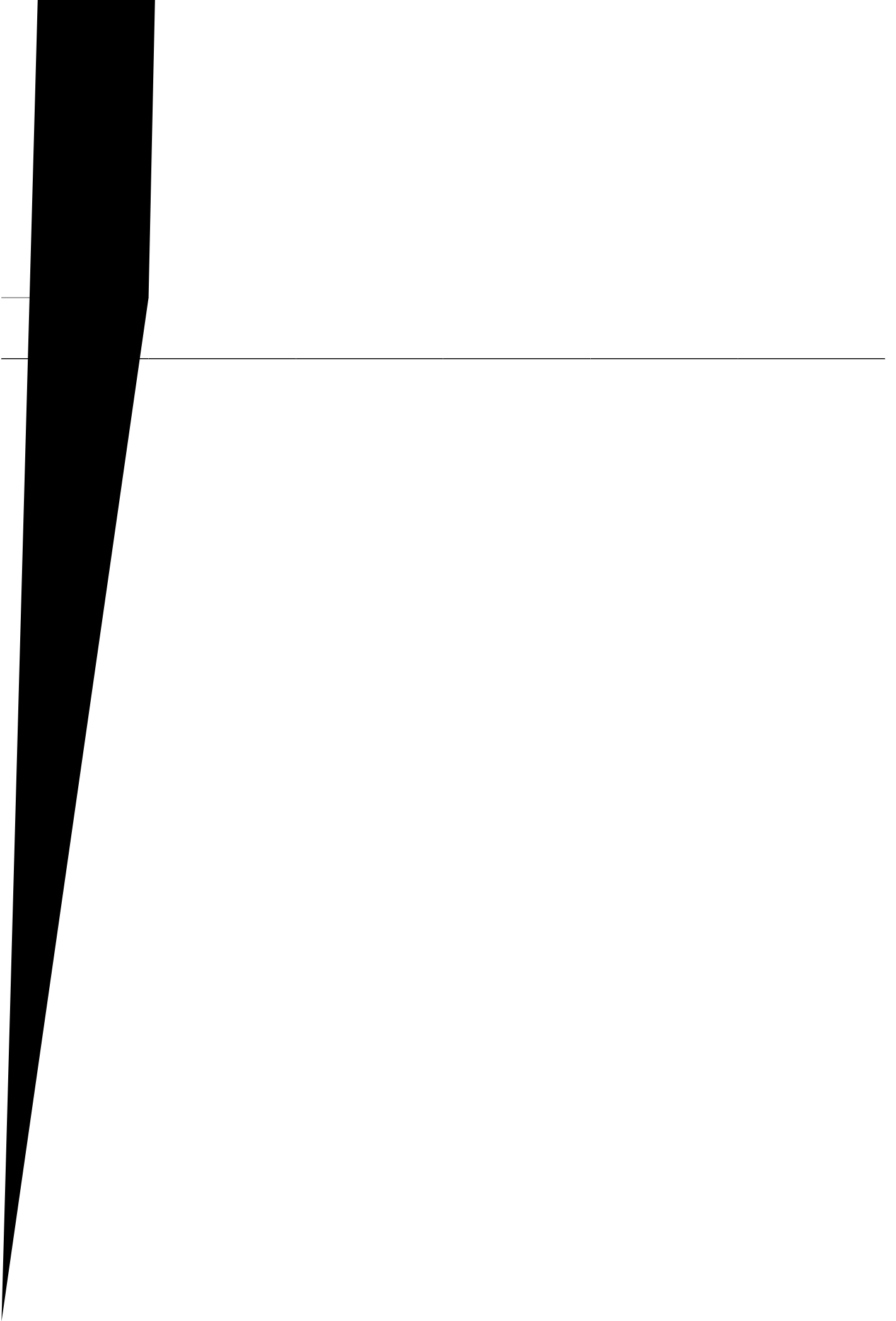
This example shows how to clear the configuration for all sessions:

monitor session (VLAN)

Command History

You can configure up to 64

You cannot share the destination interfaces among SPAN sessions. For example, a single destination interface can



This example shows how to configure an RSP

mvr

To enable Multicast VLAN Registration (MVR) on the router, use the `mvr` command in global configuration mode.

mvr group

To configure a Multicast VLAN Registration

```
F R Q P Q P Q D Q I G 1 0 0 1 197.560.396.374 T m ( F L Q ) T j 1 0 0 1 4000656.342 293 ( 0 J J O R Q E Q D Q
```


mvr immediate

To enable the immediate leave feature of Multicast VLAN Registration (MVR) on the port, use the **no mvr immediate** command in interface configuration mode. To restore the default configuration, use the **mvr immediate** command.

mvr max-groups

mvr querytime

To configure the Multicast

mvr type

To configure a switch port as a Multicast VLAN Registration (MVR) receiver or source port, use the **oxt**

Related Commands



mvr vlan

T

mvrp global

To enable Multiple VLAN Registration Protocol (MVRP) globally on a device and on a specified interface, use the **oxtr**

Command	Description
debug mvrp	Displays MVRP debugging information.
	Enables MVRP to

mvrp mac-learning

To enable automatic learning of dynamic

mvrp registration

To set the registrars in a Multiple Registration Protocol (MRP) Attribute Declaration (MAD) instance associated with an interface, use the `oxtgikvtevkqp` command in global configuration mode. To

```
Router(config-if)# oxtr tgikuvtcvkqp hkzgf  
Router(config-if)# kpvgthceg hcuvgvjgtpgv414  
Router(config-if)# oxtr tgikuvtcvkqp hqtdkffgp  
Router(config-if)# kpvgthceg hcuvgvjgtpgv415  
Router(config-if)# pq oxtr tgikuvtcvkqp
```

Related Commands

mvrp timer

To set period timers that are used in Multiple VLAN Registration Protocol (MVRP) on a given interface, use the `oxtr vlogt` command in interface configuration mode. To

Usage Guidelines

The **pq o x t r v k o g t**

mvrp vlan creation

To

name (MST)

To set the name of a Multiple Spanning Tree (MST) region, use the **pc og** command in MST configuration submode. T

platform vfi provision vlan

To provision virtual circuits (VCs) for a VLAN, use the **platform vfi provision vlan** command in global configuration mode. To disable

Table 10: *show mpls l2transport vc* Field Description

pagp port-priority

To

pagp rate

To select the rate at which packets

pagp timer

platform port-channel local-significance

To allow more than one port-channel subinterface to use the same dot1q VLAN

port-channel load-defer

To configure the port load share deferral interval for all port channels, use the **port-channel load-defer**

```
rqtv/ejcppgn nqcf/fghgt 82  
Router(config)#
```

This example shows how to verify the configuration oi

port-channel port load-defer

To enable the temporary deferral of port load sharing during the connection or

Examples

This example shows how to enable the load share deferral feature on port channel

private-vlan

To configure private VLANs (PVLANS), use the **rtkxvlg/xncp** command in VLAN configuration mode. To remove the PVLAN configuration, use the **pq** form of this command.

```
rtkxvlg/xncp {kuqncvgf-
```




If you enter the **ujwfy p** command and then the **pqujwfy p** command in the VLAN configuration mode on a PVLAN (primary or secondary), the PVLAN type and association info

The following example shows how to configure VLAN 233 as a primary LAN:

```
Router# eqphkiwtg vgtokpcn  
Router(config)# xncp 455  
Router(config-vlan)# rtkxcvg/xncp rtkoct{  
Router(config-vlan)# gpf
```

The following example shows how to

Related Commands

private-vlan mapping

To

private-vlan synchronize

To map the secondary

Related Commands

rep admin vlan

To configure a Resilient Ethernet Protocol (REP) administrative VLAN for REP to transmit hardware

The administrative VLAN cannot be the RSP

rep block port

To configure Resilient

VLANs 1 to 100. The alternate port is identified by its port ID, shown in bold in the output of the `show ip arp` command for the Router A port.



rep lsl-ageout timer

To configure the Resilient Ethernet Protocol (REP) link status layer (LSL)

rep Isl-retries

new

rep preempt segment

To manually start

Examples

This example shows how to manually trigger

rep segment

To enable Resilient Ethernet Protocol (REP) on the interface and to assign a segment ID to the interface, use the **tpg rep segment**

Command Modes

Interface configuration (config-if)

Command History

This example shows how to enable REP on

rep stcn

To configure a Resilient Ethernet Protocol (REP) edge port

You use

revision

To set the revision number for the Multiple Spanning Tree



set port flow control through show udd

service instance trunk

To configure the Resilient Ethernet Protocol

set vlan

To group ports into a virtual LAN (VLAN), use the `set vlan` command in privileged EXEC mode.

```
set vlan <vlan-id> <port-list>
```

```
set vlan <vlan-id> <port-list> [add] [name <vlan-name>] [priority <priority>]
```

- MTU for TRBRFs and TRCRFs : 4472.
- State: Active.
- **ctg o czjqr**<7
- **uv g o czjqr**<7.

set vlan mapping

Y

show

To verify the Multiple Spanning Tree (MST)

1121-4000

Router(config-mst)#

This example shows how to display the current configuration:

```
Router(config-mst)# ujqy ewttgpv
```

```
Current MST configuration
```

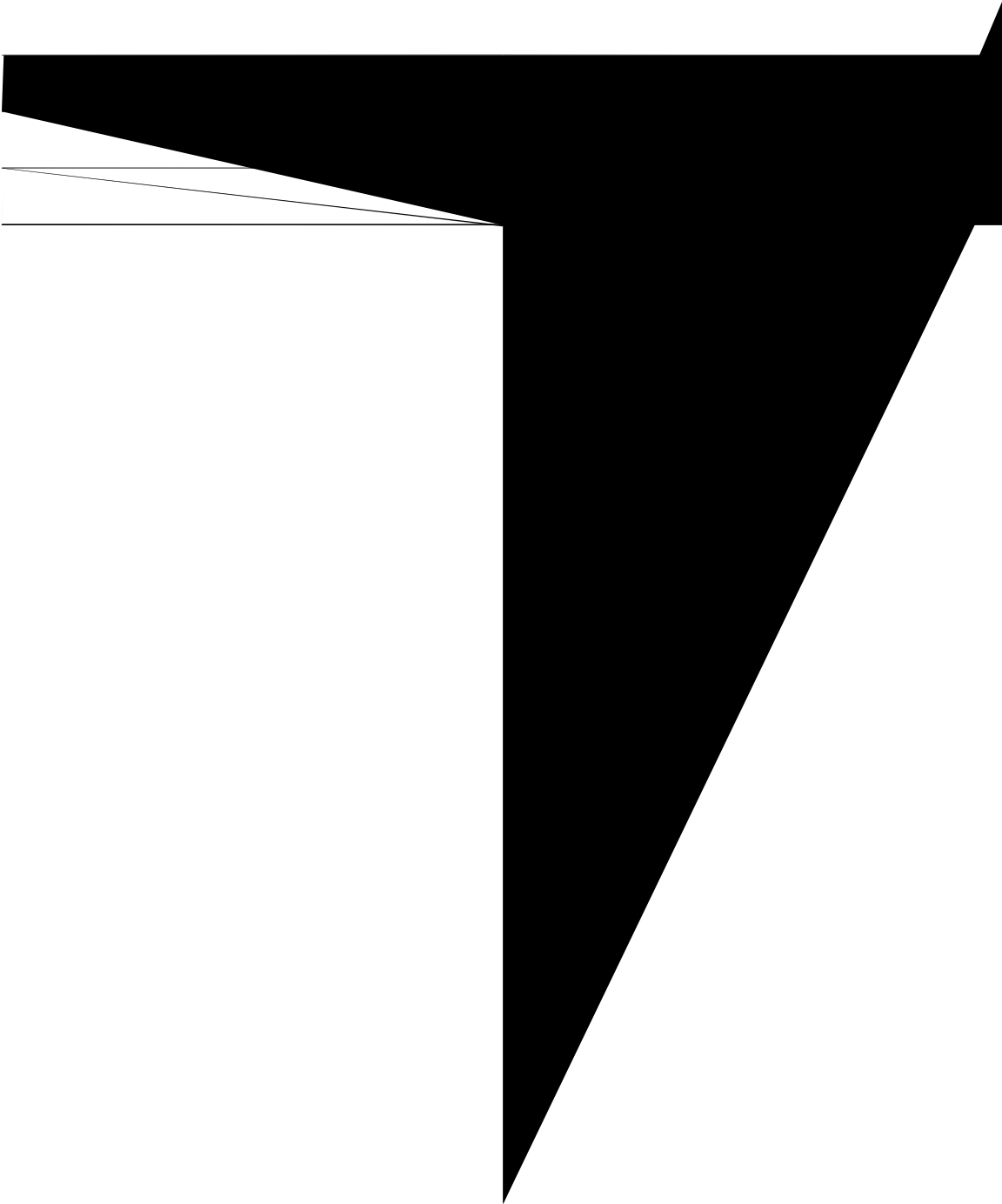
```
Name []
```

```
Revision 0
```

```
Instance Vlans mapped
```

```
0 1-4094
```

Related Commands



show controllers fastethernet

To display information about initialization block,

Command Modes

User EXEC (>) Privileged EXEC (#)

Command History



tx_no_carrier=1, tx_late_collision=10, tx_excess_collP,

Entry= 0: Addr=0100.0CCC.CCCC
Entry= 1: Addr=0300.0000.0001
Entry= 2: Addr=0100.0C00.0000
Entry= 3: Addr=FFFF.FFFF.FFFF
Entry= 4: Addr=FFFF.FFFF.FFFF
Entry= 5: Addr=FFFF.FFFF.FFFF
Entry= 6: Addr=FFFF.FFFF.FFFF
Entry= 7: Addr=FFFF.FFFF.FFFF
Entry= 8: Addr=FFFF.FFFF.FFFF
Entry= 9: Addr=FFFF.FFFF.FFFF
Entry=10: Addr=FFFF.FFFF.FFFF
Entry=11: Addr=FFFF.FFFF.FFFF
Entry=12: Addr=FFFF.FFFF.FFFF
Entry=13: Addr=FFFF.FFFF.FFFF
Entry=14: Addr=FFFF.FFFF.FFFF

Table 12: show controllers Command Field Descriptions--MAC Counters Section

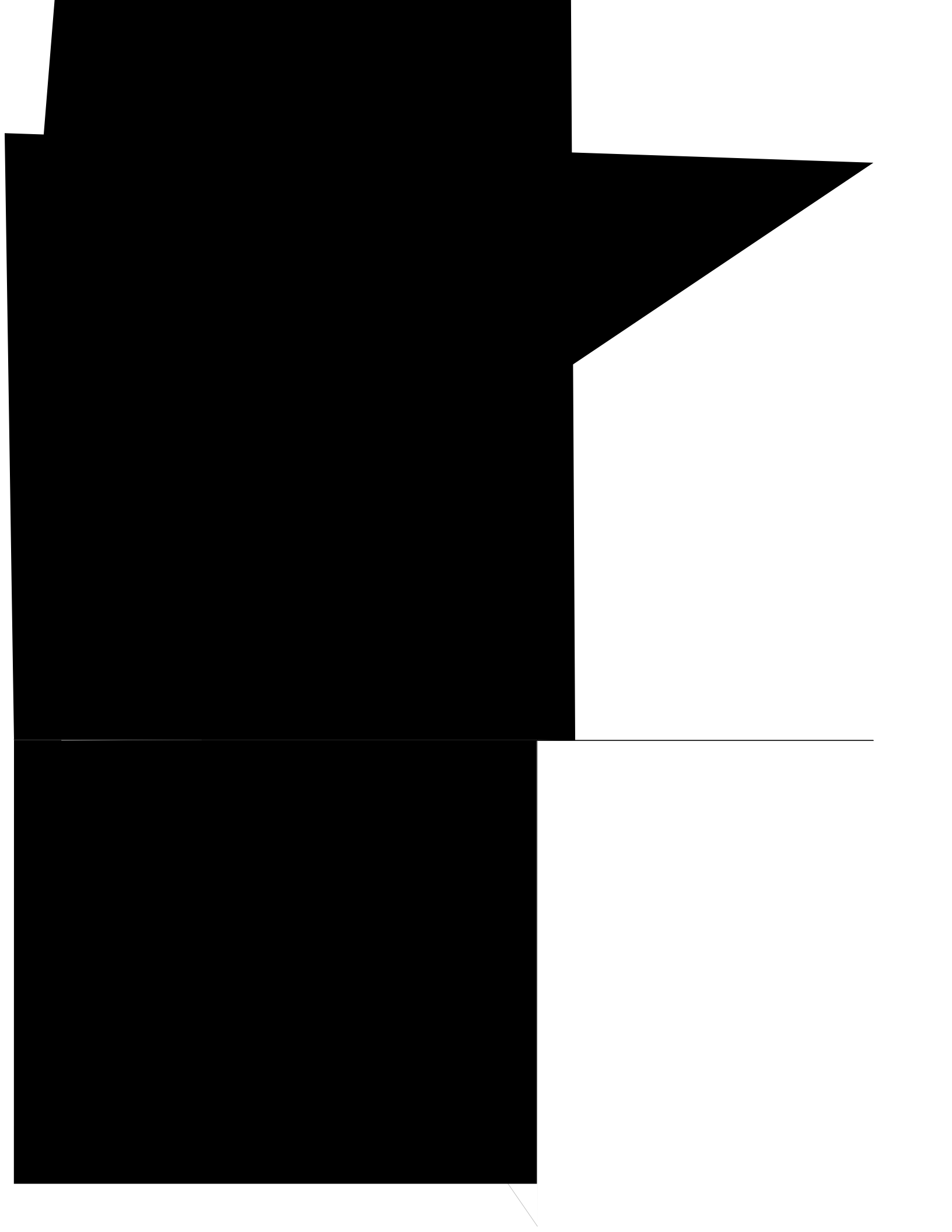
Field	Description
	Total number of packets and bytes received by the MAC device for the interface since it was activated or

Field	Description
	Total number of packets dropped by the FPGA

	Description

Table 15: show controllers Command Field Descriptions--SPA Error Counters Section

The table below describes the



Related Commands

show cwan

To display the WAN statistics and information

The following sample output displays the hidden VLAN-to-WAN interface mappings:

```
Router# ujqy eycp xncpu

Hidden VLAN swidb->if_number Interface
-----
1017 75 ATM2/0/0
1018 90 ATM2/0/0.54
1019 92 ATM2/0/0.56
1020 93 ATM2/0/0.57
1021 94 ATM2/0/0.100
1022 95 ATM2/0/0.101
1023 96 ATM2/0/0.102
1024 97 ATM2/0/0.103
1025 98 ATM2/0/0.110
1026 99 ATM2/0/0.111
1027 100 ATM2/0/0.112
1028 101 ATM2/0/0.113
1029 102 ATM2/0/0.120
1030 103 ATM2/0/0.200
1031 104 ATM2/0/0.201
1032 105 ATM2/0/0.202
1033 106 ATM2/0/0.203
1067 76 POS4/1
1068 77 POS4/2
1071 79 GE-WAN5/2
1072 80 GE-WAN5/3
1073 81 GE-WAN5/4
Recycled VLAN Interface
-----
Pending recycle holdtime(ms) Interface
-----
Router#
```

The following table describes the significant fields shown in the displays.

The `ujqeycps` command shows a summary of the QinQ translations

show cwan qinq bridge-domain

To display the provider-edge

Port-channell, group 1, total_rate 21
Router

Examples

This example shows the output from the **ujqyeycpskps**

```
.  
.   
.   
Router#
```


show cwan qinq load-balance

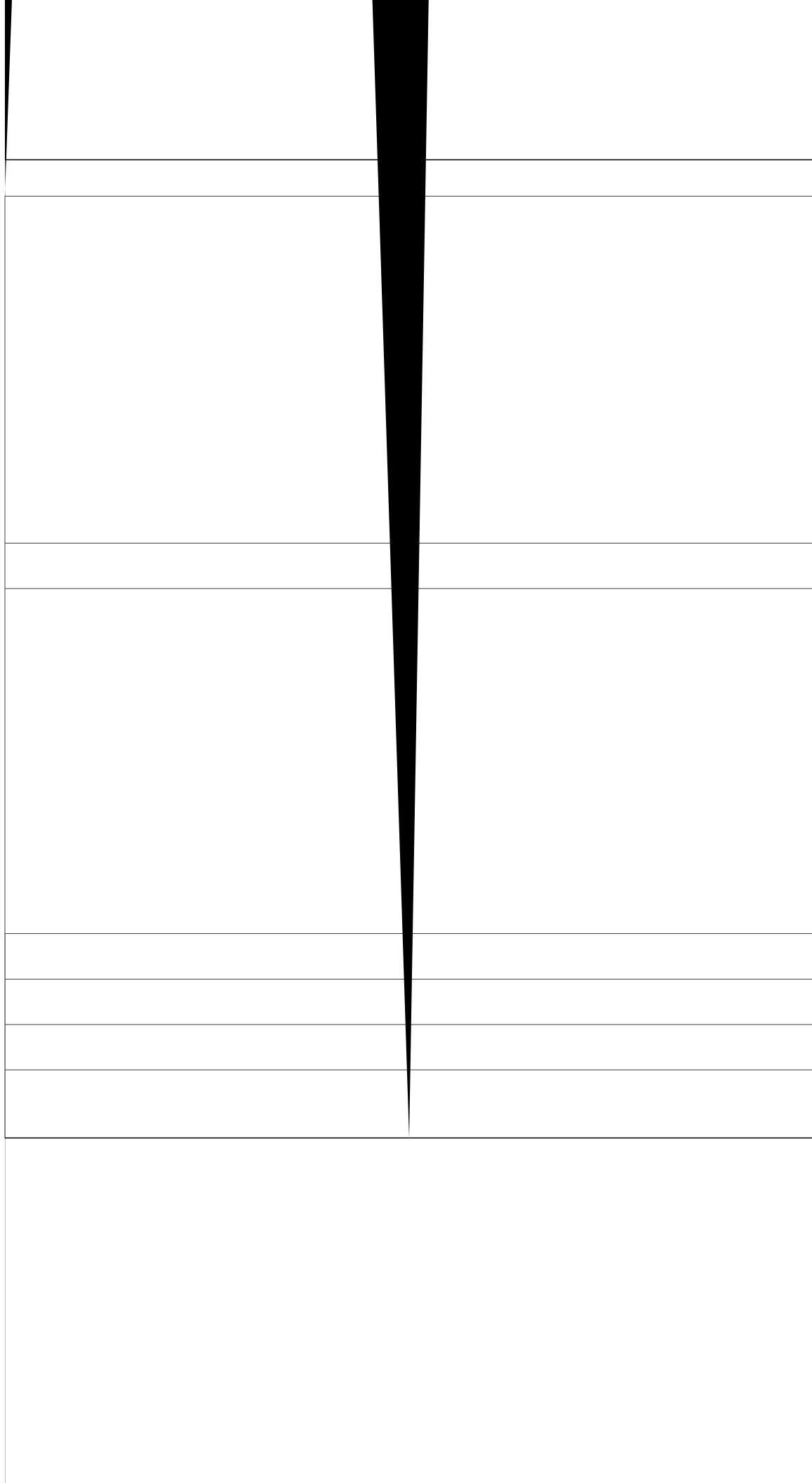
To display load-balancing statistics for IEEE 802.1Q-in-802.1Q (QinQ)

Related Commands

show cwtlc qinq

To display the information that is related to IEEE 802.1Q-in-802.1Q (QinQ) translation and is

OSMs



show dot1q-tunnel

To

Interface

Po10

Related Commands

show errdisable flap-values

show gvrp interface

To display Generic VLAN Registration (GVRP) interface states, use the **show gvrp interface** command in privileged EXEC mode.

show gvrp interface

Syntax	Description
	This command has no arguments or

show gvrp summary

To

show mac-address-table

To display the

Examples

```
1004    ffff.ffff.ffff    system
1005    ffff.ffff.ffff    system
Fa6/1   ffff.ffff.ffff    system Switch,Fa6/1
Fa6/2   ffff.ffff.ffff    system Switch,Fa6/2
```

Examples

The following is sample output from the `show ip`

fvfd

```

-----
*100      300
200      1000

```

The following example shows how to display the entry count for a specific slot:

```

Switch# ujqy oce/cfftguu/vcdng eqwpv oqfwng 3

MAC Entries on slot 1 :
Dynamic Address Count:          4
Static Address (User-defined) Count: 25
Total MAC Addresses In Use:     29
Total MAC Addresses Available:  131072

```

The following example shows how to display the information about the MAC address table for a specific interface with a Supervisor Engine 720:

```

Switch# ujqy oce/cfftguu/vcdng kpvgtthceg hcuvgvjgtpgv 8167

Legend: * - primary entry
        age - seconds since last seen
        n/a - not available

```

vlan	mac address	type	learn	age	ports
* 45	00e0.f74c.842d	dynamic	Yes	5	Fa6/45



Note A leading asterisk (*) indicates entries from a MAC address that was learned from a packet coming from an outside device to a specific module.

The following example shows how to display the limit information for a specific slot:

```

Switch# ujqy oce/cfftguu/vcdng nkokv xncp 3 oqfwng 3

vlan  switch  module  action  maximum  Total  entries  flooding
-----+-----+-----+-----+-----+-----+-----
1      1         7      warning  500      0      enabled
1      1         11     warning  500      0      enabled
1      1         12     warning ed 500 ed  0      enabled ed

Router# ujqy oce/cfftguu/vcdng nkokv xncpgp x/K ujf

```


The following example shows

```
100 0050.3e8d.6400 static assigned -- Router
100 0050.7312.0cff dynamic ip -- Fa5/9
100 0080.1c93.8040 dynamic ip -- Fa5/9
100 0050.3e8d.6400 static ipx
```


show mac-address-table aging-time

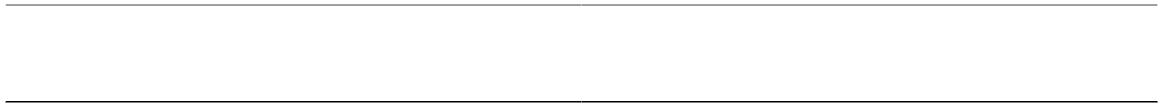
To display the MAC address aging time, use the `show mac-address-table aging-time` command in privileged EXEC mode.

Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers

`show mac-address-table aging-time`

Catalyst Switches

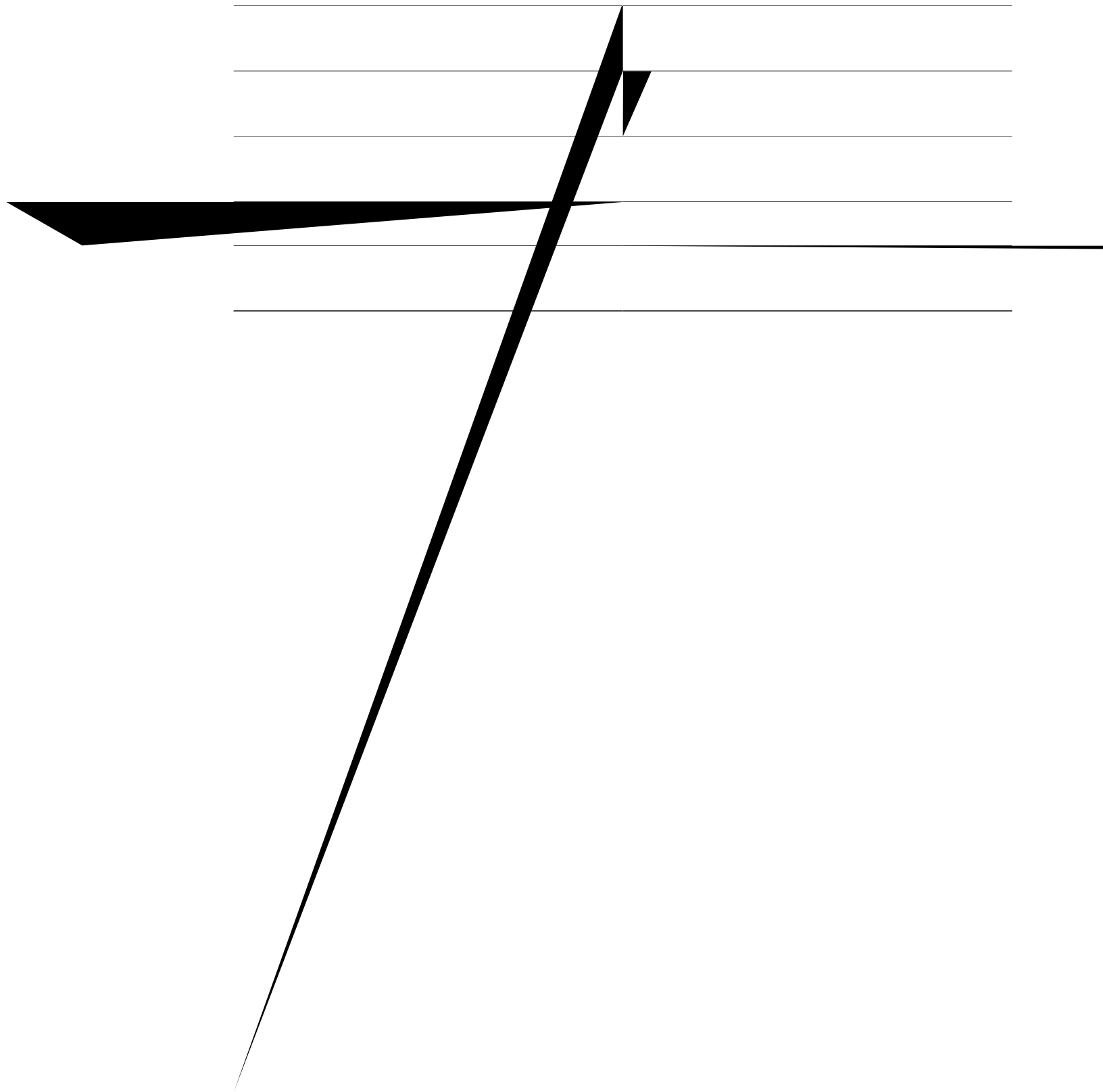
Modification



show mac-address-table dynamic

To display dynamic MAC d

ss



- **kr** --Specifies IP protocol
- **krz** --Specifies Internetwork

DYNAMIC NO NO YES NO

show mac-address-table learning

To display the MAC-address learning state, use the `show mac-address-table learning` command in user EXEC mode.

`show mac-address-table learning [xcp]`

Syntax Description

This example shows how to display the status of MAC-address learning on all the existing VLANs on a single supervisor engine or a DFC:

show mls df-table

To display information about the multilayer switching (MLS) Don't Fragment (DF) table, use the **show mls df-table** command in privileged EXEC mode.

show mls df-table *uvc tv/xmcp gpf/xmcp*

Syntax Description

show mls masks

To display the details of the access control parameters



You can configure

show mls rp

To display multilayer


```
mac 00e0.fefc.6000
  vlan id(s)
    1    10   91   92   93   95  100
router currently aware of following 1 switch(es):
  switch id 0010.1192.b5ff
```

show mls rp interface

To display Internetwork Packet Exchange (IPX) multilayer switching (MLS) details for the route processor (RP), including specific information about

The following is sample output of

show mls rp ipx

To display details for all


```
show mls rp vtp-domain
```

```
14 15 88 99
mac 0090.6dfc.5800
vlan id(s)
20 21
18 mac-vlan(s)
```


show mmls msc

To display information about Multicast Multilayer Switching (MMLS), use the `show mmls msc` command in privileged

ICROIF CACHE:

UPDATE TLV Received
INPUT

0

show mvr

To display the

show mvr groups

To display the Multicast VLAN Registration (MVR) group configuration, use the **ujqy oxt itqwr** command in Privileged EXEC mode.

ujqy oxt itqwr

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

show mvr interface

show mvr members

To display details of all the Multicast VLAN Registration (MVR) members and number of MVR members in all active MVR groups on a particular VLAN or port, use the `show mvr members` command in Privileged EXEC

show mvr receiver-ports

To

show mvr source-ports

To display all source ports that are members of any IP multicast group or those on the specified interface port, use the **show mvr source-ports** command in Privileged EXEC mode.

show mvr source-ports

Syntax Description

show mvrp interface

To display Multiple VLAN Registration Protocol (MVRP) interface states, use the **show mvrp interface** command in privileged EXEC mode.

```
show mvrp interface
```

show mvrp module

show mvrp summary

To display the Multiple VLAN Registration Protocol (MVRP) configuration at the device level, use

show port flowcontrol

To display per-port status information and statistics related to flow

show rep topology

To display Resilient Ethernet Protocol (REP) topology information for a segment or for all segments, including the primary and secondary edge ports in the segment, use the **show rep topology** command in privileged EXEC mode.

show rep

```
Neighbor Number: 4 / [-7]
repc_4_12cs, Gi0/2 (Intermediate)
Alternate Port, some vlans blocked
Bridge MAC: 001a.a19d.7c80
Port Number: 002
Port Priority: 040
Neighbor Number: 5 / [-6]
<output truncated>
```

This example shows output from the `ujqy tgr vqrqni{ ugi o gpv ctejkxg` command:

Examples

The following is sample output from the `ujqurcppki/vtggdtkgheq o o cpf<`

The following is sample output from the `show ip interface` command:

```
Router# show ip interface  
Interface Fa0/3 (port
```

```
Timers: hello 0, topology change 0, notification 0  
Router#
```

This example shows how to display the status of spanning-tree BackboneFast:

```
Router# ujqy urcppkpi/vtgg dcemdqpghcuv  
BackboneFast is enabled
```

```
BackboneFast
```

Configured hello time 2, max age 20, forward delay 15
Current root

This example

show spanning-tree mst

To display the information about the Multiple Spanning Tree (MST) protocol, use the **show spanning-tree mst** command in privileged EXEC mode.

```
show spanning-tree mst [instance-id] [interface] [detail]
```

Release

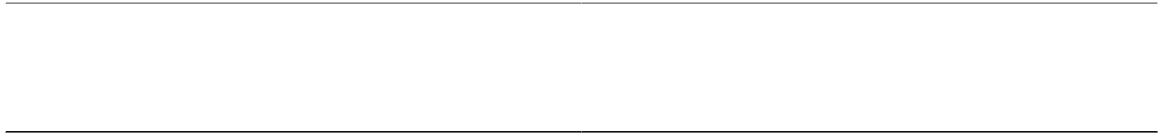
Modification

This command was modified. The changes were as follows:

- The range of valid values for

primary VLAN. The display

```
FastEthernet4/1 of MST03 is designated forwarding
Port info port id 128.193 priority 128 cost
200000
Designated root address
```

The maximum length of the channel port list is 47. The space in the Port(s) column might not be

Table 39: show spantree Field Descriptions

Related Commands

Command	Description
uun/rtqz{ o qfwng cmq ygf/xncp	Adds the VLANs allowed over the trunk to the SSL Services Module.

show udd

To display the administrative and operational

```
Current neighbor state: Bidirectional
Device name: 0050e2826000
Port ID: 2/1
Neighbor echo 1 device: SAD03160954
Neighbor echo 1 port: Gi1/1
Message interval: 5
CDP Device name: 066527791
```

The following example shows how to view the neighbor information. The fields shown in the display are



show vlan through spanning-tree vlan

- snmp trap mac-notification change,

- [storm-control](#), page 502

show vlan

To display VLAN information, use the **show vlan** command in privileged EXEC mode.

show vlan


```
VLAN Ifindex
---- -
10   37
Router#
```

The table below describes the fields that are shown in the example.

Table 40: show vlan Command Output Fields

show vlan access-log config

T

show vlan access-log flow

To display VLAN access control list (VACL) flow table contents, use the **show vlan access-log flow** command in privileged EXEC mode.

```
show vlan access-log flow
```

Examples

The following example shows how to display the VACL flow table contents.

```
Router# ujqy xncp ceeguu/nqi hnqy 39 3940420320332 47704770202 3940420320327  
47704770202  
id  prot  src_ip          dst_ip          sport  dport  vlan  port  count  total  lastlog  
-----
```


Command	Description
	Configures VACL logging properties, ropee

Command	Description
	Configures VACL

show vlan access-map

To display the contents of a VLAN-access

show vlan all-ports

To display VLAN information for trunk and access ports, use the `show vlan all-ports` command in privileged EXEC mode.

`show vlan all-ports`

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXH	This command was introduced.

Examples

The following example shows how to display VLAN information for trunk



show vlan counters

```
L3-Out-Unicast-Octets 6  
L2-NonUnicast-Octets + L3-In-NonUnicast-Octets 6  
L3-Out-NonUnicast-Octets 6  
Router#
```

Related Commands



show vlan dot1q tag native

To display native VLAN-tagging information, use the

show vlan filter

To display information about

In the output for VLAN access control

show vlan free

To

show vlan free summary

To display the usage summary of all the free VLANs in the system, use the **ujqy htgg**

show vlan internal free summary

To display the summary information of all the internal free VLANs, use the `show vlan internal free summary` command in

show vlan internal usage

To display information about the internal VLAN allocation, use the **qpXNCP**

1026 -
1027 -
1028 -
102:

show vlan port provisioning

To display the VLAN port provisioning status, use the `show vlan port provisioning` command in privileged EXEC mode.


```
Vlan Type
-----
202 primary
303 community
304 community
305 community
306 community
307 community
308 normal
309 community
440 isolated
Router#
```

The table below describes the fields that are shown in the example.

Table 43: show vlan private-vlan Command Output Fields

show vlan remote-span

To display a list of remote

show vlan virtual-port

This example shows how to display the number of logical virtual ports that are required for

show vlan-range

To display the VLAN range, use the **show vlan-range** command in privileged EXEC mode.

show vlan-range

Syntax Description	Description
	This command has no arguments or keywords.

Command Modes	Privileged EXEC (#)

Command History	Release	Modification
		This command was

Command History

1012 packets,

The following sample output from the `uqyxcpu3s` command displays the

Related Commands

show vlans tokenring

To display Token Ring VLANs, use the **show vlans tokenring** command in user EXEC or privileged EXEC mode.

show vlans tokenring

Syntax Description This command has no arguments or keywords.

Command Modes User EXEC (>) Privileged EXEC (#)

<u>Command History</u>	Release	Modification
		This command was

Fa4/16, Fa4/17, Fa4/18, Fa4/19
Fa4/20, Fa4/21, Fa4/22, Fa4/23
Fa4/24, Fa4/25, Fa4/26, Fa4/27
Fa4/28, Fa4/29, Fa4/30, Fa4/31
Fa4/32, Fa4/33, Fa4/34, Fa4/35
Gi4/0, Gi4/1, Po1

2	VLAN0002	active
3	VLAN0003	active

show vtp

To display general information about the VLAN Trunking Protocol (VTP) management domain, status, and counters,

Field	Description
VTP Operating Mode	

Maximum number of existing VLANs : 5
Configuration Revision : 1
MD5 digest : 0x92 0xF1 0xE8 0x52 0x2E 0x5C 0x36 0x10

shutdown vlan

snmp trap mac-notification change

To enable the Simple Network

Related Commands

	Specifies the Serial interface. 6 S H F L I L

spanning-tree backbonefast

Related Commands

spanning-tree bpdufilter

To enable bridge protocol data unit (BPDU) filtering on the interface,

Entering the `spanning-tree bpduguard enable` command to enable BPDU filtering overrides the PortFast configuration.

When configuring Layer 2-protocol tunneling on

- `no bpdu guard` -- Unconditionally disables BPDU guard on the

spanning-tree bridge assurance

To enable Bridge Assurance on all

spanning-tree cost

To set the path cost of

Release	Modification
	This command was integrated into Cisco o

spanning-tree etherchannel guard misconfig

To display an error message when a loop due to a channel misconfiguration is detected, use the `urcplpi/vtggvjgtejcppgn`

```
Router(config)# urcippi/vtggvjgtejcppgni wctf o kueqphi
```

```
Router(config)#
```

Related Commands

spanning-tree extend system-id

To enable the extended-system ID feature on chassis that support 1024

spanning-tree guard

To enable or disable the guard mode, use the `stp guard mode` command in interface configuration and template configuration mode. To return to the default

Device(config)# **vgorncvg**

spanning-tree link-type

To configure a link type for a port,

Examples

This example shows how to configure the port as a shared link:

```
Device(config-if)# urcppkpi/vtgg nkpm/v{rg ujctgf  
Device(config-if)#
```

The following example shows how to configure the port as a shared link using an interface template:

```
Device# eqphkiwtg vgtokpcn  
Device(config)# vgorncvg wugt/vgorncvg3  
Device(config-template)# urcppkpi/vtgg nkpm/v{rg ujctgf  
Device(config-template)# gpf
```


spanning-tree loopguard default

To enable loop

spanning-tree mode

To switch between Per-VLAN Spanning Tree+ (PVST+), Rapid-PVST+,

Examples

This example shows how to set the interface path cost:

```
Router(config-if)#  
urcppkpi/vtgg ouv 2 equv 39253;92  
Router(config-if)#
```

This example shows how to set the interface priority:

```
Router(config-if)#  
urcppkpi/vtgg ouv 2 rqtv/rtkqtkv{ 86
```

spanning-tree mst configuration

To enter MST-configuration submode, use the **urc ppp i/vtgg o uv eqphkiwtcvkqp** command in global configuration mode. To return to the default settings, use the **pq** form of this command.

urc ppp i/vtgg o uv eqphkiwtcvkqp

pq urc ppp i/vtgg o uv eqphkiwtcvkqp

Syntax Description

This command has no arguments or keywords.

spanning-tree mst forward-time

To set the forward-delay timer for all the iq

spanning-tree mst hello-time

To set the hello-time delay timer for all the

spanning-tree mst max-age

T

spanning-tree mst max-hops

Examples

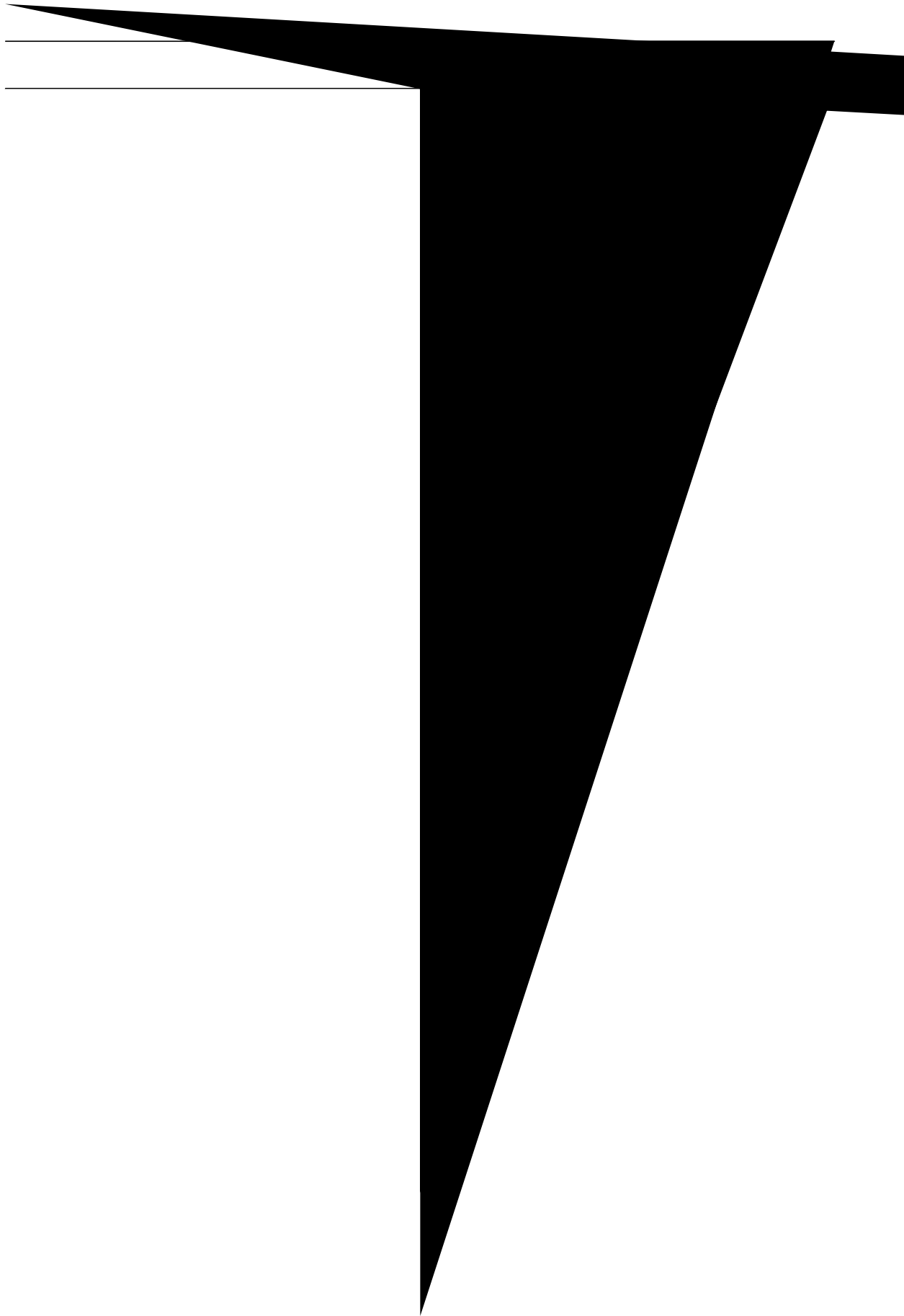
This example shows how to configure a port to transmit only prestandard BPDUs:

```
Router(config-if)#
```

spanning-tree mst priority

To set the bridge

Related Commands



spanning-tree mst root

To designate the primary and secondary root switch and set the timer value for an instance, use the `spanning-tree mst root` command in global configuration mode. To return to

Command	Description
urc p p i / v t g g r q t v / r t k q t k v {	Sets an interface priority when two bridges vie for position as the root bridge.

spanning-tree mst simulate pvst global

To enable Per-VLAN Spanning Tree

spanning-tree pathcost method

To

spanning-tree portfast (interface)

To enable PortFast mode where the interface is immediately put into the forwarding

Be careful when using the **ppurcplpi/vt**

spanning-tree portfast bpduguard default

To enable bridge protocol data unit (BPDU) guard by default on all PortFast ports, use the **urcpppi/vtgg**

spanning-tree portfast default

To enable PortFast by default on all access ports, use

Be

Usage Guidelines

The priority you set breaks the tie between two bridges to be designated

Related Commands

spanning-tree uplinkfast

To enable UplinkFast, use the **urc** **pp** **i** **/vtgg** **rn** **pm** **hcu** command in global configuration mode. To disable UplinkFast, use the **pq** form of this command.

urc **pp** **i** **/vtgg**

Use the `urcplpi/vtggwrnkpmhcuv o cz/wr fcvg/tcvg` command to enable UplinkFast (if it is not already enabled) and change the rate at which update packets are sent. Use the `pq` form of this command to return to the default rate.

Examples

This example shows how to enable UplinkFast and set the maximum rate to 200 packets per second:

```
Router(config)#  
  urcplpi/vtgg wrnkpmhcuv o cz/wr fcvg/tcvg 422  
Router(config)#
```

Related Commands

spanning-tree vlan

To configure Spanning Tree Protocol (STP) on a per-virtual LAN (VLAN) basis, use the **urcppkpi-vtggxncp** command in global configuration mode. To return to the default settings, use the **pq** form of this command.

```
urcppkpi/vtgg xncp xncp/kf [hqt yct f/vk o g ugeqpfu
```

- **o cz/cig** --20 seconds
- **r tkqtkv{** --The default with IEEE STP enabled is 32768; the default with STP enabled is 128.
- **r tqvqeql** --IEEE
- **tqqv** --No STP root

When you issue

Related Commands

storm-control

To enable broadcast, multicast,

Command Default



On Cisco Catalyst 3750 Series Switches, when the



udld through vtp v2-mode

udld

To enable the aggressive mode or the normal mode in the UniDirectional Link Detection (UDLD) protocol and to set the configurable

Examples

The following example shows how to enable the UDLD in the normal mode on all fiber interfaces:

udld port

To enable the UniDirectional Link Detection (UDLD) protocol on the Ethernet

uddl recovery

To configure the UniDirectional

udld reset

To reset all the ports that are error disabled by the UniDirectional Link Detection (UDLD) protocol and allow traffic to pass through them again (although other features, such as spanning tree, Port Aggregation Protocol [PAgP], and DynamicspanningM

Command	Description
wf n f r q t v	Enables UDLD on the Ethernet interface or enables UDLD in the aggressive mode on the Ethernet interface.
wf n f t	Enables the recovery timer for the UDLD error-disabled state.

vlan (global)

To add a VLAN and enter config-VLAN submode, use the **xlep** command in global configuration mode. To delete the VLAN, use the **pq**

If you define a range of configured VLANS, you are not allowed to set the *xncp/pc o* gargument in config-VLAN



Command History

Release	Modification
	This



Note If the VLAN already exists, no action occurs.

The following example

Usage Guidelines

Due to the rate-limiting function for

- **pq** -- Negates a command or sets its defaults.

Examples

vlan accounting

To configure accounting information about VLAN, use

vlan database



Note The **xncpfvcvdcug** command is not available in Cisco IOS Release 12.2(33)SXI5 and later Cisco IOS 12.2SX releases.

T

Once you are in VLAN

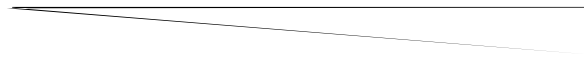
vlan dot1q tag native

Examples

This example shows how to enable dot1q tagging for all VLANs in a trunk:

```
Router(config)#  
xncp fqv3s vci pcvkxg  
Router(config)#
```

Related Commands



vlan filter

To apply a VLAN access map, use the **xncp hknvgt** command in global configuration mode. To clear the VLAN access maps from VLANs or interfaces, use the **pq** form of this command.

```
xncp hknvgt ocr/pcog
```

- If you delete a WAN interface that has a VLAN access control list (VACL) applied, the VACL configuration on the interface is also removed.
- You can apply only one ACL)

vlan ifdescr detail

T

vlan internal allocation policy

To configure the allocation direction of the internal VLAN, use the `vlan internal allocation` command in global configuration mode. To the

Examples

This example

vlan mapping dot1q

To map an 802.1Q VLAN to an Inter-Switch Link (ISL) VLAN, use the **xnp o cr rpi**

vlan port provisioning

To enable VLAN port provisioning verification,

vtp (global)

To configure the global VLAN Trunking Protocol (VTP) state, use the **vtp** command in global configuration mode. T

o uv	Sets the mode for Multiple Spanning-Tree (MST) VTP instance.
wpmrpyr	Sets the mode for unknown VTP features.
xncp	Sets the mode for VLAN VTP instance.
	Specifies the

The **xvrrtwplpi**, **xvrrcuuyqtf**, and **xvrxgtukqp**

If you toggle the version 2 mode, certain default VLAN parameters are modified.

If you enter the **xvr o qfg**

In VTP version 3, there is no longer a restriction to

vtp (interface)

To enable VLAN T

Related Commands

Command	Description
ujqy xvr	Displays VTP statistics and domain information.
	Modifies the name of the VTP configuration

vtp domain

To create the administrative

Examples

The following example shows how to set the device's administrative domain to DomainChandon:

vtp password

To create a Virtual Trunking Protocol

The following example shows how to delete the VTP domain password:

```
Router(vlan)# no vtp domain  
Clearing device VLAN database password.
```

Related Commands

vtp server

To place the device in Virtual Trunking Protocol (VTP) server mode, use the **xvrugtxgt** command in VLAN configuration mode.

xvr ugtxgt

Syntax Description

Examples

The following example shows how to place the device in VTP server mode:

vtp transparent

To place the device in Virtual Trunking Protocol (VTP) transparent mode=

Examples

The following example shows how to place the device in VTP transparent mode:

```
Router(vlan)# xvr vtcpurctgpv
```

The following example shows how to return the device to VTP server mode:

```
Router(vlan)# pq xvr vtcpurctgpv
```

Related Commands

vtp v2-mode

To enable Virtual Trunking Protocol (VTP) version 2 mode, use the `vrx4/ o qfg` command in VLAN configuration mode. T

Examples

The following example shows how to enable version 2 mode in the VLAN database:

```
Router(vlan)# xvr x4/oqfg
```

The following example shows how to disable version 2 mode in the VLAN database:

```
Router(vlan)# pq xvr x4/oqfg
```

Related Commands



