show mpoa client statistics

To display all the statistics collected by an MPC, use the **show mpoa client statistics** command in EXEC mode.

show mpoa client [**name** *mpc-name*] **statistics**

Syntax Description

name *mpc-name*	(Optional) Specifies the name of the MPC.

Command Modes

EXEC

Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

Usage Guidelines

This command displays all the statistics collected by an MPC.

Examples

The following is sample output from the **show mpoa client statistics** command for the MPC ip_mpc:

```
show mpoa client name ip_mpc statistics

MPC Name: ip_mpc, Interface: ATM1/0, State: Up
MPC actual operating address: 47.00918100000000613E5A2F01.0010A6943825.00
Shortcut-Setup Count: 1, Shortcut-Setup Time: 1

                            Transmitted       Received
MPOA Resolution Requests              2              0
MPOA Resolution Replies               0              2
MPOA Cache Imposition Requests        0              0
MPOA Cache Imposition Replies         0              0
MPOA Cache Purge Requests             0              0
MPOA Cache Purge Replies              0              0
MPOA Trigger Request                  0              0
NHRP Purge Requests                   0              0


Invalid MPOA Data Packets Received: 0
```

show mpoa default-atm-addresses

To display the default ATM addresses for the MPC, use the **show mpoa default-atm-addresses** command in EXEC mode.

show mpoa default-atm-addresses

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

Examples

The following is sample output from the **show mpoa default-atm-addresses** command when the switch prefix is NOT available:

```
show mpoa default-atm-addresses

interface ATM1/0:
MPOA Server: ...006070174824.**
MPOA Client: ...006070174825.**
note: ** is the MPS/MPC instance number in hex

interface ATM2/0:
MPOA Server: ...006070174844.**
MPOA Client: ...006070174845.**
note: ** is the MPS/MPC instance number in hex
```

The following is sample output from the **show mpoa default-atm-addresses** command when the switch prefix is available:

```
show mpoa default-atm-addresses

interface ATM1/0:
MPOA Server: 47.00918100000000613E5A2F01.006070174824.**
MPOA Client: 47.00918100000000613E5A2F01.006070174825.**
note: ** is the MPS/MPC instance number in hex

interface ATM2/0:
MPOA Server: 47.100000000000000000000000.006070174844.**
MPOA Client: 47.100000000000000000000000.006070174845.**
note: ** is the MPS/MPC instance number in hex
```

Table 70 describes the fields shown in the example output.

Table 70 show mpoa default-atm-addresses Field Descriptions

Field	Description
interface ATM1/0	Specified interface.
MPOA Server	ATM address of the MPOA server on the interface.
MPOA Client	ATM address of the MPOA client on the interface.

show mpoa server

To display information about any specified MPS or all MPSs in the system, depending on whether the name of the required MPS is specified, use the **show mpoa server** command in EXEC mode.

show mpoa server [**name** *mps-name*]

Syntax Description

name *mps-name*	(Optional) Specifies the name of the MPOA server.

Command Modes

EXEC

Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

Usage Guidelines

This command displays information about any specified MPS or all MPSs in the system, depending on whether the name of the required MPS is specified. The command displays information about server configuration parameters. It also displays information about LAN Emulated Clients (LECs) that are bound to the MPOA server neighbors (both MPC and MPS).

Examples

The following is sample output from the **show mpoa server** command, with a specified name:

```
show mpoa server name ip_mps

MPS Name: ip_mps, MPS id: 0, Interface: ATM1/0, State: up
network-id: 1, Keepalive: 25 secs, Holding time: 1200 secs
Keepalive lifetime: 75 secs, Giveup time: 40 secs
MPS actual operating address: 47.00918100000000613E5A2F01.006070174824.00
Lane clients bound to MPS ip_mps: ATM1/0.1 ATM1/0.2
Discovered neighbours:
MPC 47.00918100000000613E5A2F01.00000C5A0C5D.00 vcds: 39(R,A)
MPC 47.00918100000000613E5A2F01.0010A6943825.00 vcds: 40(R,A)
```

Table 71 describes the fields shown in the display.

Table 71 show mpoa server Field Descriptions

Field	Description
MPS Name	Name of the MPOA server.
MPS id	ID of the MPOA server.
Interface	Interface to which the MPS is attached.
State	State of the MPOA server: up or down.
network-id	Network ID used for partitioning.
Keepalive	Keepalive time value.
Holding time	Holding time value.

Table 71 show mpoa server Field Descriptions (continued)

Field	Description
Keepalive lifetime	Keepalive lifetime value.
Giveup time	Minimum time to wait before giving up on a pending resolution request.
MPS actual operating address	Actual control address of this MPS.
Lane clients bound to MPS ip_mps	List of LANE clients served by the MPS.
Discovered neighbors	MPOA devices discovered by the clients bound to this MPS.

Related Commands

Command	Description
clear mpoa server name	Clears the ingress and egress cache entries of one or all MPCs.

show mpoa server cache

To display ingress and egress cache entries associated with a server, use the **show mpoa server cache** command in EXEC mode.

show mpoa server [**name** *mps-name*] **cache** [**ingress** | **egress**] [**ip-address** *ip-address*]

Syntax Description

name *mps-name*	(Optional) Specifies the name of a MPOA server.
ingress	(Optional) Displays ingress cache entries associated with a server.
egress	(Optional) Displays egress cache entries associated with a server.
ip-address *ip-address*	(Optional) Displays the entries that match the specified IP address.

Command Modes

EXEC

Command History

Release	Modification
12.0	This command was introduced.

Usage Guidelines

This command displays ingress and egress cache entries associated with an MPS.

Examples

The following is sample output from the **show mpoa server cache** command, with a name specified:

```
show mpoa server name ip_mps cache

MPS Name: ip_mps, MPS id: 0, Interface: ATM1/0, State: up
network-id: 1, Keepalive: 25 secs, Holding time: 1200 secs
Keepalive lifetime: 75 secs, Giveup time: 40 secs
MPS actual operating address: 47.00918100000000613E5A2F01.006070174824.00
Number of Ingress cache entries: 1
Ingress Cache information:
  IP address      Ingress MPC ATM Address                       Remaining Time
  20.20.20.1      47.00918100000000613E5A2F01.0010A6943825.00   19:07
Number of Egress cache entries: 1
Egress Cache information:
  Dst IP address  Ingress MPC ATM Address                       Remaining Time
  20.20.20.1      47.00918100000000613E5A2F01.0010A6943825.00   19:06
  src IP 20.20.20.2, cache Id 1
```

Table 72 describes the fields shown in the display.

Table 72 show mpoa server cache Field Descriptions

Field	Description
MPS Name	Name of the MPOA server.
MPS id	ID of the MPOA server.
Interface	Interface to which the MPS is attached.

Table 72 show mpoa server cache Field Descriptions (continued)

Field	Description
State	State of the MPOA server: up or down.
network-id	Network ID used for partitioning.
Keepalive	Keepalive time value.
Holding time	Holding time value.
Keepalive lifetime	Keepalive lifetime value.
Giveup time	Minimum time to wait before giving up on a pending resolution request.
MPS actual operating address	Actual control address of this MPS.
Number of Ingress cache entries	Number of entries in the ingress cache.
Ingress Cache information	Information of ingress cache.
IP address	IP address of the MPC.
Ingress MPC ATM Address	ATM address of the ingress MPC.
Remaining Time	Time for which the cache entry is valid.
Number of Egress cache entries	Number of entries in the egress cache.
Egress Cache information	Information of egress cache.
Dst IP address	IP address of the destination.
src IP	IP address of the source MPS which originated the NHRP resolution request.
cache Id	Cache identifier.

show mpoa server statistics

To display all the statistics collected by an MPS, use the **show mpoa server statistics** command in EXEC mode.

show mpoa server [**name** *mps-name*] **statistics**

Syntax Description

name *mps-name*	(Optional) Specifies the name of a MPOA server.

Command Modes

EXEC

Command History

Release	Modification
12.0	This command was introduced.

Usage Guidelines

This command will display all the statistics collected by an MPS. The statistics pertains to the ingress /egress cache entry creation, deletion, and failures.

Examples

The following is a sample output from the **show mpoa server statistics** command, with a name specified:

```
show mpoa server name ip_mps statistics

MPS Name: ip_mps, MPS id: 0, Interface: ATM1/0, State: up
network-id: 1, Keepalive: 25 secs, Holding time: 1200 secs
Keepalive lifetime: 75 secs, Giveup time: 40 secs
MPS actual operating address: 47.00918100000000613E5A2F01.006070174824.00
Opcode                          Transmitted    Received
-----------------------------------------------------------
MPOA Resolution Requests                              2
MPOA Resolution Replies                    2
MPOA Cache Imposition Requests             1
MPOA Cache Imposition Replies                         1
MPOA Egress Cache Purge Requests                      0
MPOA Egress Cache Purge Replies            0
NHRP Resolution Requests                   0          0
NHRP Resolution Replies                    0          0
NHRP Purge Requests                        0          0
```

Table 73 describes the fields shown in the upper part of this display.

Table 73 show mpoa server statistics Field Descriptions

Field	Description
MPS Name	Name of the MPOA server.
MPS id	ID of the MPOA server.
Interface	Specified interface.

Table 73 show mpoa server statistics Field Descriptions (continued)

Field	Description
State	State of the MPOA server: up or down.
network-id	Network ID used for partitioning.
Keepalive	Keepalive time value.
Holding time	Holding time value.
Keepalive lifetime	Keepalive lifetime value.
Giveup time	Minimum time to wait before giving up on a pending resolution request.
MPS actual operating address	Actual control address of this MPS.

show route-map ipc

To display counts of the one-way route map IPC messages sent from the RP to the VIP when NetFlow policy routing is configured, use the **show route-map ipc** command in EXEC mode.

show route-map ipc

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
12.0(3)T	This command was introduced.

Usage Guidelines

This command displays the counts of one-way route map IPC messages from the RP to the VIP when NetFlow policy routing is configured. If you execute this command on the RP, the messages are shown as "Sent." If you execute this command on the VIP console, the IPC messages are shown as "Received."

Examples

The following is sample output of the **show route-map ipc** command when it is executed on the RP:

```
show route-map ipc

Route-map RP IPC Config Updates Sent
Name: 4
Match access-list: 2
Match length: 0
Set precedence: 1
Set tos: 0
Set nexthop: 4
Set interface: 0
Set default nexthop: 0
Set default interface: 1
Clean all: 2
```

The following is sample output of the **show route-map ipc** command when it is executed on the VIP:

```
show route-map ipc

Route-map LC IPC Config Updates Received
Name: 4
Match access-list: 2
Match length: 0
Set precedence: 1
Set tos: 0
Set nexthop: 4
Set interface: 0
Set default nexthop: 0
Set default interface: 1
Clean all: 2
```

Table 74 describes the significant fields in the first display.

Table 74 show route-map ipc Field Descriptions

Field	Description
Route-map RP IPC Config Updates Sent	Indicates that IPC messages are being sent from the RP to the VIP.
Name:	Number of IPC messages sent about the name of the route map.
Match access-list:	Number of IPC messages sent about the access list.
Match length	Number of IPC messages sent about the length to match.
Set precedence:	Number of IPC messages sent about the precedence.
Set tos:	Number of IPC messages sent about the type of service (TOS).
Set nexthop:	Number of IPC messages sent about the next hop.
Set interface:	Number of IPC messages sent about the interface.
Set default nexthop:	Number of IPC messages sent about the default next hop.
Set default interface:	Number of IPC messages sent about the default interface.
Clean all:	Number of IPC messages sent about clearing the policy routing configuration from the VIP. When DCEF is disabled and reenabled, the configuration related to policy routing must be removed (cleaned) from the VIP before the new information is downloaded from the RP to the VIP.

show tag-switching atm-tdp bindings

To display the requested entries from the ATM LDP label binding database, use the **show tag-switching atm-tdp bindings** command in privileged EXEC mode. The ATM LDP database contains LIB entries for label VCs on TC-ATM interfaces.

show tag-switching atm-tdp bindings [*network* {*mask* | *length*}] [**local-tag** *vpi vci*][**remote-tag** *vpi vci*] [**neighbor** *interface*]

Syntax Description

network	(Optional) Destination network number.
mask	Network mask in the form A.B.C.D (destination prefix).
length	Mask length (1 to 32).
local-tag *vpi vci*	(Optional) Select label (tag) VC value assigned by this router.
remote-tag *vpi vci*	(Optional) Select label (tag) values assigned by the other router.
neighbor *interface*	(Optional) Select label (tag) values assigned by neighbor on a specified interface.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.1 CT	This command was introduced.

Usage Guidelines

The display output can show entries from the entire database, or it can be limited to a subset of entries based on prefix, VC label value, and/or an assigning interface.

Examples

The following is router sample output from the **show tag-switching atm-tdp bindings** command:

```
show tag-switching atm-tdp bindings

Destination: 10.16.0.16/32
    Tailend Router ATM1/0.1 1/35 1/34 Active, VCD=2
Destination: 10.24.0.0/24
    Tailend Router ATM1/0.1 1/39 Active, VCD=3
Destination: 10.15.0.15/32
    Tailend Router ATM1/01 1/33 Active, VCD=4
Destination: 10.23.0 0/24
    Tailend Router ATM1/01 1/37 Active, VCD=5
```

Table 75 describes the significant fields in this display.

Table 75 show tag-switching atm-tdp bindings Field Descriptions

Field	Description
Destination:	Destination (network/mask).
Tailend Router	Types of VC options are: • Tailend—VC that terminates at this router. • Headend—VC that originates at this router. • Transit—VC that passes through a switch.
ATM1/0.1	Interface.
1/35	VPI/VCI.
Active	TVC state: • Active—Set up and working. • Bindwait—Waiting for response. • Remote Resource Wait—Waiting for resources (VPI/VCI space) to be available on the downstream device. • Parent Wait—Transit VC input side waiting for output side to become active.
VCD=2	Virtual circuit descriptor number.

The following is ATM switch sample output from the **show tag-switching atm-tdp bindings** command:

```
show tag-switching atm-tdp bindings

Destination: 6.6.6.6/32
    Tailend Switch ATM0/0/3 1/34 Active -> Terminating Active
 Destination: 150.0.0.0/16
    Tailend Switch ATM0/0/3 1/35 Active -> Terminating Active
 Destination: 4.4.4.4/32
    Transit ATM0/0/3 1/33 Active -> ATM0/1/1 1/33 Active
```

Related Commands

Command	Description
show tag-switching atm-tdp summary	Displays summary information on ATM label bindings.

show tag-switching atm-tdp capability

To display the ATM LDP label capabilities, use the **show tag-switching atm-tdp capability** command in privileged EXEC mode.

show tag-switching atm-tdp capability

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.1 CT	This command was introduced.

Examples

The following example shows the display from the **show tag-switching atm-tdp capability** command:

```
show tag-switching atm-tdp capability

VPI           VCI           Alloc   Odd/Even  VC Merge
ATM0/1/0       Range         Range         Scheme  Scheme    IN   OUT
  Negotiated   [100 - 101]   [33 - 1023]   UNIDIR            -    -
  Local        [100 - 101]   [33 - 16383]  UNIDIR            EN   EN
  Peer         [100 - 101]   [33 - 1023]   UNIDIR            -    -

               VPI           VCI           Alloc   Odd/Even  VC Merge
ATM0/1/1       Range         Range         Scheme  Scheme    IN   OUT
  Negotiated   [201 - 202]   [33 - 1023]   BIDIR             -    -
  Local        [201 - 202]   [33 - 16383]  UNIDIR  ODD       NO   NO
  Peer         [201 - 202]   [33 - 1023]   BIDIR   EVEN      -    -
```

Table 76 lists the significant fields in this display.

Table 76 show tag-switching atm-tdp capability Field Descriptions

Field	Description
VPI Range	Minimum and maximum number of VPIs supported on this interface.
VCI Range	Minimum and maximum number of VCIs supported on this interface.

Table 76 show tag-switching atm-tdp capability Field Descriptions (continued)

Field	Description
Alloc Scheme	UNIDIR—Unidirectional capability indicates that the peer device can, within a single VPI, support binding of the same VCI to different prefixes on different directions of the link. BIDIR—Bidirectional capability indicates that within a single VPI, a single VCI can appear in one binding only. In this case, one peer device allocates bindings in the even VCI space, and the other in the odd VCI space. The system with the lower LDP identifier will assign even-numbered VCIs. The negotiated allocation scheme is UNIDIR, if and only if, both peer devices have UNIDIR capability. Otherwise it is BIDIR.
Odd/Even Scheme	Indicates whether the local device or the peer device is assigning an odd- or even-numbered VCI when the negotiated scheme is BIDIR. It does not display any information when the negotiated scheme is UNIDIR.
VC Merge	Indicates the type of VC merge support on this interface. IN—Indicates input interface merge capability. IN accepts the following values: • EN—The hardware interface supports VC merge and VC merge is enabled on the device. • DIS—The hardware interface supports VC merge and VC merge is disabled on the device. • NO—The hardware interface does not support VC merge. OUT—Indicates output interface merge capability. OUT accepts the same values as the input merge side. The VC merge capability is meaningful only on ATM switches. It is not negotiated.
Negotiated	Set of options that both LDP peer devices have agreed to share on this interface. For example, the VPI or VCI allocation on either peer device remains within the negotiated ranges.
Local	Options supported locally on this interface.
Peer	Options supported by the remote LDP peer device on this interface.

Related Commands

Command	Description
tag-switching atm control-vc	Configures the VPI and VCI to be used for the initial link to the Label Switching peer device.
tag-switching atm vc-merge	Controls whether vc-merge (multipoint-to-point) is supported for unicast label VCs.
tag-switching atm vpi	Configures the range of values to use in the VPI field for label VCs.

show tag-switching atm-tdp summary

To display summary information on ATM label bindings, use the **show tag-switching atm-tdp summary** command in privileged EXEC mode.

show tag-switching atm-tdp summary

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.1 CT	This command was introduced.

Examples

The following is sample output from the **show tag-switching atm-tdp summary** command:

```
show tag-switching atm-tdp summary

Total number of destinations: 788

TC-ATM bindings summary
interface   total     active    bindwait  local     remote    other
ATM0/0/0    594       592       1         296       298       1
ATM0/0/1    590       589       0         294       296       1
ATM0/0/2    1179      1178      0         591       588       1
ATM0/0/3    1177      1176      0         592       585       1
ATM0/1/0    1182      1178      4         590       588       0
Waiting for bind on ATM0/0/0 10.21.0.0/24
```

Table 77 describes the significant fields in this display.

Table 77 show tag-switching atm-tdp summary Field Descriptions

Field	Description
Total number of destinations	The number of known destination address prefixes.
interface	The name of an interface that has associated ATM label bindings.
total	The total number of ATM labels on this interface.
active	The number of ATM labels in an “active” state that are ready to use for data transfer.
bindwait	The number of bindings that are waiting for a label assignment from the neighbor LSR.
local	The number of ATM labels assigned by this LSR on this interface.
remote	The number of ATM labels assigned by the neighbor LSR on this interface.

Table 77 show tag-switching atm-tdp summary Field Descriptions (continued)

Field	Description
other	The number of ATM labels in a state other than “active” or “bindwait.”
Waiting for bind on ATM0/0/0	A list of the destination address prefixes (on a particular interface) that are waiting for ATM label assignment from the neighbor LSR.

Related Commands

Command	Description
show isis database verbose	Displays the requested entries from the ATM LDP label binding database.

show tag-switching cos-map

To display the CoS map used to assign a quantity of label VCs (LVCs) and an associated class of service of those LVCs, use the **show tag-switching cos-map EXEC** command in EXEC mode.

show tag-switching cos-map

Command Modes

EXEC

Command History

Release	Modification
12.0(5)T	This command was introduced.

Examples

The following example shows output from this command:

```
show tag-switching cos-map

cos-map 2    class  tag-VC
             3      control
             2      control
             1      available
             0      available
```

Table 78 lists the fields displayed.

Table 78 show tag-switching cos-map Field Descriptions

Field	Description
cos-map	Configures a class map, which specifies how classes map to MPLS VCs when combined with a prefix map.
class	The IP precedence.
tag-VC	An ATM virtual circuit that is set up through ATM LSR label distribution procedures.

Related Commands

Command	Description
class (MPLS)	Configures an MPLS CoS map that specifies how classes map to LVCs when combined with a prefix map.
tag-switching cos-map	Creates a class map that specifies how classes map to LVCs when combined with a prefix map.

show tag-switching forwarding-table

To display the contents of the Label Forwarding Information Base (LFIB), use the **show tag-switching forwarding-table** command in privileged EXEC mode.

show tag-switching forwarding-table [{*network* {*mask* | *length*} | **tags** *tag* [**-** *tag*] | **interface** *interface* | **next-hop** *address* | **tsp-tunnel** [*tunnel-id*]}] [**detail**]

Syntax Description

network	(Optional) Destination network number.
mask	(Optional) IP address of destination mask whose entry is to be shown.
length	(Optional) Number of bits in mask of destination.
tags *tag - tag*	(Optional) Shows entries with specified local labels only.
interface *interface*	(Optional) Shows entries with specified outgoing interface only.
next-hop *address*	(Optional) Shows entries with specified neighbor as next hop only.
tsp-tunnel [*tunnel-id*]	(Optional) Shows entries with specified LSP tunnel only, or all LSP tunnel entries.
detail	(Optional) Displays information in long form (includes length of encapsulation, length of MAC string, maximum transmission unit (MTU), and all labels).

Command Modes

Privileged EXEC

Command History

Release	Modification
11.1 CT	This command was introduced.

Usage Guidelines

The optional parameters allow specification of a subset of the entire LFIB.

Examples

The following is sample output from the **show tag-switching forwarding-table** command:

```
show tag-switching forwarding-table

Local Outgoing      Prefix            Bytes tag Outgoing       Next Hop
tag   tag or VC     or Tunnel Id      switched  interface
26    Untagged      10.253.0.0/16     0         Et4/0/0        172.27.32.4
28    1/33          10.15.0.0/16      0         AT0/0.1        point2point
29    Pop tag       10.91.0.0/16      0         Hs5/0          point2point
      1/36          10.91.0.0/16      0         AT0/0.1        point2point
30    32            10.250.0.97/32    0         Et4/0/2        10.92.0.7
      32            10.250.0.97/32    0         Hs5/0          point2point
34    26            10.77.0.0/24      0         Et4/0/2        10.92.0.7
      26            10.77.0.0/24      0         Hs5/0          point2point
35    Untagged  [T] 10.100.100.101/32 0         Tu301          point2point
36    Pop tag       168.1.0.0/16      0         Hs5/0          point2point
      1/37          168.1.0.0/16      0         AT0/0.1        point2point

[T]     Forwarding through a TSP tunnel.
        View additional tagging info with the 'detail' option
```

The following is sample output from the **show tag-switching forwarding-table** command when the **detail** keyword is specified:

```
show tag-switching forwarding-table detail

Local Outgoing      Prefix            Bytes tag Outgoing       NextHop
tag   tag or VC     or Tunnel Id      switched  interface
26    Untagged      10.253.0.0/16     0         Et4/0/0        172.27.32.4
        MAC/Encaps=0/0, MTU=1504, Tag Stack{}
28    1/33          10.15.0.0/16      0         AT0/0.1        point2point
        MAC/Encaps=4/8, MTU=4470, Tag Stack{1/33(vcd=2)}
        00020900 00002000
29    Pop tag       10.91.0.0/16      0         Hs5/0          point2point
        MAC/Encaps=4/4, MTU=4474, Tag Stack{}
        FF030081
      1/36          10.91.0.0/16      0         AT0/0.1        point2point
        MAC/Encaps=4/8, MTU=4470, Tag Stack{1/36(vcd=3)}
        00030900 00003000
30    32            10.250.0.97/32    0         Et4/0/2        10.92.0.7
        MAC/Encaps=14/18, MTU=1500, Tag Stack{32}
        006009859F2A00E0F7E984828847 00020000
      32            10.250.0.97/32    0         Hs5/0          point2point
        MAC/Encaps=4/8, MTU=4470, Tag Stack{32}
        FF030081 00020000
34    26            10.77.0.0/24      0         Et4/0/2        10.92.0.7
        MAC/Encaps=14/18, MTU=1500, Tag Stack{26}
        006009859F2A00E0F7E984828847 0001A000
      26            10.77.0.0/24      0         Hs5/0          point2point
        MAC/Encaps=4/8, MTU=4470, Tag Stack{26}
        FF030081 0001A000
35    Untagged      10.100.100.101/32 0         Tu301          point2point
        MAC/Encaps=0/0, MTU=1504, Tag Stack{}, via Et4/0/2
36    Pop tag       168.1.0.0/16      0         Hs5/0          point2point
        MAC/Encaps=4/4, MTU=4474, Tag Stack{}
        FF030081
      1/37          168.1.0.0/16      0         AT0/0.1        point2point
        MAC/Encaps=4/8, MTU=4470, Tag Stack{1/37(vcd=4)}
        00040900 00004000
```

Table 79 describes the significant fields in this display.

Table 79 show tag-switching forwarding-table Field Descriptions

Field	Description
Local tag	Label (tag) assigned by this router.
Outgoing tag or VC	Label (tag) assigned by next hop, or VPI/VCI used to get to next hop. Some of the entries you can have in this column are: • [T]—Forwarding through a LSP tunnel. • Untagged—There is no label for the destination from the next hop, or Label Switching is not enabled on the outgoing interface. • Pop tag—The next hop advertised an implicit NULL label for the destination, and this router popped the top label.
Prefix or Tunnel Id	Address or tunnel to which packets with this label are going.
Bytes tag switched	Number of bytes switched with this incoming label.
Outgoing interface	Interface through which packets with this label are sent.
NextHop	IP address of neighbor that assigned the outgoing label.
Mac/Encaps	Length in bytes of Layer 2 header, and length in bytes of packet encapsulation, including Layer 2 header and label header.
MTU	Maximum transmission unit (MTU) of labeled packet.
Tag Stack	All the outgoing labels. If the outgoing interface is TC-ATM, the VCD is also shown.
00020900 00002000	The actual encapsulation in hexadecimal form. There is a space shown between Layer 2 and label header.

show tag-switching forwarding vrf

To display label forwarding information for advertised VRF routes, use the **show tag-switching forwarding vrf** command in EXEC mode. To disable the display of label forwarding information, use the **no** form of this command.

show tag-switching forwarding vrf *vrf-name* [*ip-prefix/length* [*mask*]] [**detail**] [*output-modifiers*]

no show tag-switching forwarding vrf *vrf-name* [*ip-prefix/length* [*mask*]] [**detail**] [*output-modifiers*]

Syntax Description

vrf-name	Displays NLRIs associated with the named VRF.
ip-prefix/length	(Optional) IP prefix address (in dotted decimal format) and length of mask (0 to 32).
mask	(Optional) Destination network mask, in dotted decimal format.
detail	(Optional) Displays detailed information on the VRF routes.
output-modifiers	(Optional) For a list of associated keywords and arguments, use context-sensitive help.

Defaults

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
12.0(5)T	This command was introduced.

Usage Guidelines

Use this command to display label forwarding entries associated with a particular VRF or IP prefix.

Examples

The following example shows label forwarding entries that correspond to the VRF called vpn1:

```
show tag-switching forwarding vrf vrf1 detail
```

Related Commands

Command	Description
show tag-switching forwarding vrf	Displays label forwarding information for advertised VRF routes.
show ip cef vrf	Displays the CEF forwarding table associated with a VRF.

show tag-switching interfaces

To display information about one or more interfaces that have the MPLS feature enabled, use the **show tag-switching interfaces** command in EXEC mode.

show tag-switching interfaces [*interface*] [**detail**]

Syntax Description

interface	(Optional) The interface about which to display MPLS information.
detail	(Optional) Displays information in long form.

Defaults

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
11.1 CT	This command was introduced.

Usage Guidelines

You can show information about the requested interface or about all interfaces on which the MPLS feature is enabled.

Examples

The following example shows the interface in multi-VC LVC mode

```
show tag-switching interfaces detail

Interface ATM3/0/0.1:
        IP tagging enabled
        TSP Tunnel tagging not enabled
        Tagging operational
        Tagswitching feature vector
        MTU = 4470
        ATM tagging: Tag VPI = 1, Control VC = 0/32, multi-vc tag-vc mode
```

Table 80 lists the fields displayed in this example.

Table 80 show tag-switching interfaces detail Field Descriptions

Field	Description
Interface	Interface type and number.
IP tagging enabled	Status of IP MPLS on an interface.
TSP Tunnel tagging not enabled	Status of label lsp-tunnels on the interface.
Tagging operational	Operational status of MPLS on an interface.
Tagswitching feature vector	Specifies the MPLS feature vector on an interface.

Table 80 show tag-switching interfaces detail Field Descriptions (continued)

MTU	Maximum number of data bytes per labeled packet that will be transmitted.
ATM tagging	The interface uses TC-ATM procedures.

Related Commands

Command	Description
tag-switching ip interface	Enables label switching of IPv4 packets on an interface.

show tag-switching prefix-map

To show the prefix map used to assign a CoS map to network prefixes matching a standard IP access list, use the **show tag-switching prefix-map** command in EXEC mode.

show tag-switching prefix-map [*prefix-map*]

Syntax Description

prefix-map	Specifies the prefix-map number.

Defaults

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
12.0(5)T	This command was introduced.

Examples

The following is sample output from the **show tag-switching prefix-map** command:

```
show tag-switching prefix-map

prefix-map 2 access-list 2 cos-map 2
```

Table 81 lists the fields displayed.

Table 81 show tag-switching prefix-map Field Description

Field	Description
prefix-map	Unique number of a prefix map.
access-list	Unique number of an access list.
cos- map	Unique number of a CoS map.

Related Commands

Command	Description
tag-switching prefix-map	Displays the prefix map used to assign a CoS map to network prefixes matching a standard IP access list.

show tag-switching tdp bindings

To display the contents of the label information base (LIB), use the **show tag-switching tdp bindings** command in privileged EXEC mode.

show tag-switching tdp bindings [*network* {*mask* | *length*} [**longer-prefixes**]] [**local-tag** *tag* [**-** *tag*]] [**remote-tag** *tag* [**-** *tag*]] [**neighbor** *address*] [**local**]

Syntax Description

network	(Optional) Destination network number.
mask	(Optional) Network mask written as A.B.C.D.
length	(Optional) Mask length (1 to 32 characters).
longer-prefixes	(Optional) Selects any prefix that matches *mask* with *length* to 32.
local-tag *tag* **-** *tag*	(Optional) Displays entries matching local label values by this router. Use the **-** *tag* argument to indicate label range.
remote-tag *tag* **-** *tag*	(Optional) Displays entries matching label values assigned by a neighbor router. Use the **-** *tag* argument to indicate label range.
neighbor *address*	(Optional) Displays label bindings assigned by selected neighbor.
local	(Optional) Displays local label bindings.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.1 CT	This command was introduced.

Usage Guidelines

A request can specify that the entire database be shown, or it or can be limited to a subset of entries. A request to show a subset of entries can be based on the prefix, on input or output label values or ranges, and/or on the neighbor advertising the label.

Examples

The following is sample output from the **show tag-switching tdp bindings** command. This form of the command causes the contents of the entire LIB (TIB) to be displayed.

```
show tag-switching tdp bindings

Matching entries:
  tib entry: 10.92.0.0/16, rev 28
        local binding:  tag: imp-null(1)
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 10.102.0.0/16, rev 29
        local binding:  tag: 26
        remote binding: tsr: 172.27.32.29:0, tag: 26
  tib entry: 10.105.0.0/16, rev 30
        local binding:  tag: imp-null(1)
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 10.205.0.0/16, rev 31
        local binding:  tag: imp-null(1)
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 10.211.0.7/32, rev 32
        local binding:  tag: 27
        remote binding: tsr: 172.27.32.29:0, tag: 28
  tib entry: 10.220.0.7/32, rev 33
        local binding:  tag: 28
        remote binding: tsr: 172.27.32.29:0, tag: 29
  tib entry: 99.101.0.0/16, rev 35
        local binding:  tag: imp-null(1)
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 100.101.0.0/16, rev 36
        local binding:  tag: 29
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 171.69.204.0/24, rev 37
        local binding:  tag: imp-null(1)
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 172.27.32.0/22, rev 38
        local binding:  tag: imp-null(1)
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 210.10.0.0/16, rev 39
        local binding:  tag: imp-null(1)
  tib entry: 210.10.0.8/32, rev 40
        remote binding: tsr: 172.27.32.29:0, tag: 27
```

The following is sample output from the **show tag tdp bindings 10.0.0.0 8 longer-prefixes neighbor 172.27.32.29** variant of the command; it displays labels learned from LSR (TSR) 172.27.32.29 for network 10.0.0.0 and any of its subnets. The use of the **neighbor** option suppresses the output of local labels and labels learned from other neighbors.

```
show tag tdp bindings 10.0.0.0 8 longer-prefixes neighbor 172.27.32.29

  tib entry: 10.92.0.0/16, rev 28
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 10.102.0.0/16, rev 29
        remote binding: tsr: 172.27.32.29:0, tag: 26
  tib entry: 10.105.0.0/16, rev 30
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 10.205.0.0/16, rev 31
        remote binding: tsr: 172.27.32.29:0, tag: imp-null(1)
  tib entry: 10.211.0.7/32, rev 32
        remote binding: tsr: 172.27.32.29:0, tag: 28
  tib entry: 10.220.0.7/32, rev 33
        remote binding: tsr: 172.27.32.29:0, tag: 29
```

Table 82 describes the significant fields in this display.

Table 82 show tag-switching tdp bindings Field Descriptions

Field	Description
tib entry	Indicates that the following lines are the LIB (TIB) entry for a particular destination (network/mask). The revision number is used internally to manage label distribution for this destination.
remote binding	A list of outgoing labels for this destination learned from other Label Switching Routers (LSRs). Each item on this list identifies the LSR from which the outgoing label was learned and the label itself. The LSR is identified by its LDP identifier.
imp-null	The implicit null label. This label value instructs the upstream router to pop the label entry off the label stack before forwarding the packet.

Related Commands

Command	Description
show tag-switching forwarding-table	Displays the contents of the LFIB.
show tag-switching tdp neighbors	Displays the status of LDP sessions.