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LANE and CES (Using PVCs) in Unshaped VP Tunnels

Document ID: 10494

Introduction

Prerequisites

- Requirements
- Components Used
- Conventions

Configure

- Network Diagram
- Configurations

Verify

- Verify 5500–asp–e
- Show Commands for VPs and VCs within the VP
- Verify 5500–asp–f
- 8540–MSR

Troubleshoot

Related Information

Introduction

This document provides a sample configuration for LAN emulation (LANE) and circuit emulation service (CES) with the use of permanent virtual circuits (PVCs) in unshaped virtual path (VP) tunnels.

Prerequisites

Requirements

These sample configurations are based on these prerequisites:

- You need to transport CES and LANE across the WAN. Therefore, Cisco recommends ASP–PFQ on the LS1010 to ensure good clocking operations. Cisco also recommends RP–NetClock–3 on the 8540–MSR for the same reason.
- This example uses unshaped VP tunnels.
- Because LANE uses unspecified bit rate (UBR) SVCs, CES uses constant bit rate (CBR) PVCs. Also, since this configuration uses regular VP tunnels, you must have two VP tunnels (one for each service category: CBR and UBR). You might use only one VP tunnel if you used the hierarchical type.
- Since unshaped tunnels can be of any service category, this example has a CBR VP tunnel that can only contain CBR VCs. It is used for CES CBR PVCs (labeled **VPI1** in the network diagram).

Note: The VPI number is locally significant to the switch port. Therefore, you can have the same VPI number on the same switch, but two different switch ports.

- Because a CBR VP tunnel cannot transport non–CBR VCs, you must create another VP tunnel for LANE (which uses UBR service category VCs). Therefore, the second VP tunnel (labeled **VPI2** in the network diagram) is a UBR VP tunnel with UBR LANE SVCs that pass through it.
- You need to purchase two VPs from the service provider. These are CBR and UBR.

- In this example, it is assumed that the CBR VP has a peak cell rate (PCR) of 10 Mbps and a cell delay variation tolerance (CDVT) of 500 cells.
- Device 5500-asp-f is for VP switching. The service provider typically performs this function.
- LANE services are defined on 8540-MSR. LAN Emulation Clients (LECs) are on 8540-MSR and 5500-asp-e.

Note: LANE services are placed on the ATM switch in this example for simplicity. However, that is not the optimal location for LANE services.

- The two private branch exchanges (PBXs) in the diagram use a CES CBR circuit. For details on how to configure circuit emulation, refer to the CES documentation.

Components Used

This document is not restricted to specific software and hardware versions.

Conventions

For more information on document conventions, refer to Cisco Technical Tips Conventions.

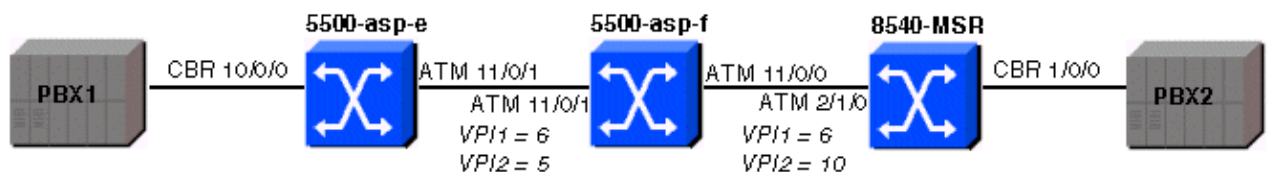
Configure

In this section, you are presented with the information to configure the features described in this document.

Note: To find additional information on the commands used in this document, use the Command Lookup Tool (registered customers only).

Network Diagram

This document uses this network setup:



Configurations

This document uses these configurations:

- 5500-asp-e
- 5500-asp-f
- 8540-MSR

5500-asp-e
5500-asp-e# show running-config Building configuration...

Current configuration:

```
!  
version 11.3  
no service pad  
service timestamps debug datetime msec  
service timestamps log uptime  
no service password-encryption  
!  
hostname 5500-asp-e  
!  
boot system flash slot0:ls1010-wp-mz.120-3c.W5.9.bin  
!  
ip host-routing  
!  
atm connection-traffic-table-row index 64000 cbr pcr 10240 cdvt 500  
atm lecs-address-default 47.0091.8100.0000.0090.2144.8401.0090.2144.8405.00 1  
atm address 47.0091.8100.0000.0050.537e.1401.0050.537e.1401.00  
atm router pnni  
no aesa embedded-number left-justified  
node 1 level 56 lowest  
redistribute atm-static  
!  
!  
!  
interface CBR10/0/0  
no ip address  
ces circuit 0 circuit-name test  
ces pvc 0 interface ATM11/0/1.6 vpi 6 vci 100  
!  
interface ATM11/0/1  
no atm signalling enable  
no ip address  
atm pvp 5  
atm pvp 6 rx-cttr 64000 tx-cttr 64000  
!  
interface ATM11/0/1.5 point-to-point  
!  
interface ATM11/0/1.6 point-to-point  
!  
interface ATM13/0/0  
no ip address  
atm maxvp-number 0  
!  
interface ATM13/0/0.1 multipoint  
ip address 100.100.100.2 255.255.255.0  
lane client ethernet test  
!  
interface Ethernet13/0/0  
no ip address  
!  
no ip classless  
!  
logging buffered 16000 debugging  
!  
line con 0  
line aux 0  
line vty 0 4  
login  
!  
end
```

5500-asp-f

!--- The switch is configured for VP switching.

```
5500-asp-f# show running-config
```

```
Building configuration...
```

```
Current configuration:
```

```
!  
version 11.3  
no service pad  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
  
!  
hostname 5500-asp-f  
!  
!  
!  
atm connection-traffic-table-row index 64000 cbr pcr 10240 cdvt 500  
atm address 47.0091.8100.0000.0050.5308.2401.0050.5308.2401.00  
atm router pnni  
no aesa embedded-number left-justified  
node 1 level 56 lowest  
redistribute atm-static  
!  
!  
!  
interface ATM11/0/0  
no ip address  
!  
interface ATM11/0/1  
no ip address  
atm pvp 5 interface ATM11/0/0 10  
atm pvp 6 rx-cttr 64000 tx-cttr 64000 interface ATM11/0/0 6  
!  
interface ATM13/0/0  
no ip address  
atm maxvp-number 0  
!  
interface Ethernet13/0/0  
no ip address  
!  
ip classless  
!  
!  
line con 0  
line aux 0  
line vty 0 4  
login  
!  
end
```

8540-MSR

```
8540-MSR# show running-config
```

```
Building configuration...
```

```

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 8540-MSR
!
logging buffered 4096 debugging
!
redundancy
main-cpu
    sync config startup
    sync config running
facility-alarm core-temperature major 53
facility-alarm core-temperature minor 45
ip subnet-zero
!
atm connection-traffic-table-row index 63999 cbr pcr 10240 cdvt 500
atm lecs-address-default 47.0091.8100.0000.0090.2144.8401.0090.2144.8405.00 1
atm address 47.0091.8100.0000.0090.2144.8401.0090.2144.8401.00
atm router pnni
    no aesa embedded-number left-justified
    node 1 level 56 lowest
    redistribute atm-static
!
!
lane database PVP
    name test server-atm-address 47.009181000000009021448401.009021448403.01
!
!
interface CBR1/0/0
    no ip address
    no ip directed-broadcast
    ces circuit 0 circuit-name test
    ces pvc 0 interface ATM2/1/0.6 vpi 6 vci 100
!
interface ATM2/1/0
    no atm signalling enable
    no ip address
    no ip directed-broadcast
    atm pvp 6 rx-cttr 63999 tx-cttr 63999
    atm pvp 10
!
interface ATM2/1/0.6 point-to-point
    no ip directed-broadcast
!
interface ATM2/1/0.10 point-to-point
    no ip directed-broadcast
!
interface ATM0
    no ip address
    no ip directed-broadcast
    atm maxvp-number 0
    lane config auto-config-atm-address
    lane config database PVP
!
interface ATM0.1 multipoint
    ip address 100.100.100.1 255.255.255.0
    no ip directed-broadcast
    lane server-bus ethernet test

```

```

lane client ethernet test
!
interface Ethernet0
  no ip address
  no ip directed-broadcast
!
!
ip classless
!
!
line con 0
  transport input none
line aux 0
line vty 0 4
!
end

```

Verify

Verify 5500-asp-e

This section provides information you can use to confirm your configuration is working properly.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only), which allows you to view an analysis of **show** command output.

- **show atm vp** Used to verify that the VP tunnel is up.

```
5500-asp-e# show atm vp
```

Interface	VPI	Type	X-Interface	X-VPI	Status
ATM11/0/1	5	PVP	TUNNEL		
ATM11/0/1	6	PVP	TUNNEL		

```
5500-asp-e#
```

- **show atm vc interface atmx/y/z.n** Used to verify that the LANE SVCs are established through the UBR VP tunnel.

```
5500-asp-e# show atm vc interface atm11/0/1.5
```

Interface	VPI	VCI	Type	X-Interface	X-VPI	X-VCI	Encap	Status
ATM11/0/1.5	5	3	PVC	ATM13/0/0	0	68	SNAP	UP
ATM11/0/1.5	5	4	PVC	ATM13/0/0	0	69	SNAP	UP
ATM11/0/1.5	5	5	PVC	ATM13/0/0	0	67	QSAAL	UP
ATM11/0/1.5	5	16	PVC	ATM13/0/0	0	66	ILMI	UP
ATM11/0/1.5	5	18	PVC	ATM13/0/0	0	72	PNNI	UP
ATM11/0/1.5	5	43	SVC	ATM13/0/0	0	94	LANE	UP
ATM11/0/1.5	5	44	SVC	ATM13/0/0	0	95	LANE	UP
ATM11/0/1.5	5	45	SVC	ATM13/0/0	0	96	LANE	UP
ATM11/0/1.5	5	46	SVC	ATM13/0/0	0	97	LANE	UP
ATM11/0/1.5	5	47	SVC	ATM13/0/0	0	103	LANE	UP

- **show atm pnni neighbor** If LANE SVCs do not come up through the VP tunnel, use this command to verify that the PNNI neighbors are in full state.

```
5500-asp-e# show atm pnni neighbor
```

```

Neighbors For Node (Index 1, Level 56)
Neighbor Name: 8540-MSR, Node number: 9
Neighbor Node Id: 56:160:47.009181000000009021448401.009021448401.00

```

```

Neighboring Peer State: Full
Link Selection Set To: minimize blocking of future calls
  Port          Remote Port Id  Hello state
  ATM11/0/1.6   ATM2/1/0.6      2way_in
  ATM11/0/1.5   ATM2/1/0.10     2way_in      (Flooding Port)

```

```
5500-asp-e#
```

- **show lane client** Used to verify that the LEC is operational.

```
5500-asp-e# show lane client
```

```

LE Client ATM13/0/0.1 ELAN name: test Admin: up State: operational
Client ID: 2          LEC up for 1 hour 7 minutes 39 seconds
ELAN ID: 0
Join Attempt: 17
Last Fail Reason: Config VC being released
HW Address: 0050.537e.1402 Type: ethernet Max Frame Size: 1516
ATM Address: 47.0091810000000050537E1401.0050537E1402.01
VCD  rxFrames  txFrames  Type      ATM Address
  0      0          0  configure 47.009181000000009021448401.009021448405.00
  94     1          6  direct   47.009181000000009021448401.009021448403.01
  95     9          0  distribute 47.009181000000009021448401.009021448403.01
  96     0          70 send      47.009181000000009021448401.009021448404.01
  97     5          0  forward   47.009181000000009021448401.009021448404.01
  103   11         14  data      47.009181000000009021448401.009021448402.01

```

```
5500-asp-e#
```

- **show atm vc interface atm x/y/z.n** Used to verify that the CES PVC goes through the CBR VP tunnel.

```
5500-asp-e# show atm vc interface atm11/0/1.6
```

Interface	VPI	VCI	Type	X-Interface	X-VPI	X-VCI	Encap	Status
ATM11/0/1.6	6	3	PVC	ATM13/0/0	0	100	SNAP	UP
ATM11/0/1.6	6	4	PVC	ATM13/0/0	0	101	SNAP	UP
ATM11/0/1.6	6	5	PVC	ATM13/0/0	0	99	QSAAL	UP
ATM11/0/1.6	6	16	PVC	ATM13/0/0	0	98	ILMI	UP
ATM11/0/1.6	6	18	PVC	ATM13/0/0	0	102	PNNI	UP
ATM11/0/1.6	6	100	PVC	ATM-P10/0/3	0	16		UP

```
5500-asp-e#
```

Show Commands for VPs and VCs within the VP

Use the **show** commands in this section to view details about each VP and VC within the VP.

In this example, in order to ensure that the signalling VCs go through both VPs, signalling is disabled on the main interface. The command used to do this is **no atm signalling enable**. The same has been done on the 8540-MSR.

Well known VCs change their VPI number from zero to the VPI number of the VP tunnel. Well known VCs are also of the same service category as the VP tunnel. Therefore, for one VP tunnel the signalling VC is UBR, and the other is CBR. Use the **show atm vp interface atm x/y/z n m** and **show atm vc interface atm x/y/z.n n m** commands to view information about the service categories.

```
5500-asp-e# show atm vp interface atm11/0/1 5
```

```

Interface: ATM11/0/1, Type: oc3suni
VPI = 5
Status: TUNNEL

```

```
Time-since-last-status-change: 01:15:49
Connection-type: PVP
Cast-type: point-to-point
Usage-Parameter-Control (UPC): pass
Wrr weight: 2
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Threshold Group: 5, Cells queued: 0
Rx cells: 0, Tx cells: 0
Tx Clp0:0, Tx Clp1: 0
Rx Clp0:0, Rx Clp1: 0
Rx Upc Violations:0, Rx cell drops:0
Rx Clp0 q full drops:0, Rx Clp1 qthresh drops:0
Rx connection-traffic-table-index: 1
Rx service-category: UBR (Unspecified Bit Rate)
Rx pcr-clp01: 7113539
Rx scr-clp01: none
Rx mcr-clp01: none
Rx      cdvt: 1024 (from default for interface)
Rx      mbs: none
Tx connection-traffic-table-index: 1
Tx service-category: UBR (Unspecified Bit Rate)
Tx pcr-clp01: 7113539
Tx scr-clp01: none
Tx mcr-clp01: none
Tx      cdvt: none
Tx      mbs: none
```

```
5500-asg-e# show atm vp interface atm11/0/1 6
```

```
Interface: ATM11/0/1, Type: oc3suni
VPI = 6
Status: TUNNEL
Time-since-last-status-change: 00:06:25
Connection-type: PVP
Cast-type: point-to-point
Usage-Parameter-Control (UPC): pass
Wrr weight: 2
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Threshold Group: 1, Cells queued: 0
Rx cells: 0, Tx cells: 0
Tx Clp0:0, Tx Clp1: 0
Rx Clp0:0, Rx Clp1: 0
Rx Upc Violations:0, Rx cell drops:0
Rx Clp0 q full drops:0, Rx Clp1 qthresh drops:0
Rx connection-traffic-table-index: 64000
Rx service-category: CBR (Constant Bit Rate)
Rx pcr-clp01: 10240
Rx scr-clp01: none
Rx mcr-clp01: none
Rx      cdvt: 500
Rx      mbs: none
Tx connection-traffic-table-index: 64000
Tx service-category: CBR (Constant Bit Rate)
Tx pcr-clp01: 10240
Tx scr-clp01: none
Tx mcr-clp01: none
Tx      cdvt: 500
```

Tx mbs: none

5500-asp-e# show atm vc interface atm11/0/1.6 6 5

```
Interface: ATM11/0/1.6, Type: oc3suni
VPI = 6 VCI = 5
Status: UP
Time-since-last-status-change: 00:10:22
Connection-type: PVC
Cast-type: point-to-point
Packet-discard-option: enabled
Usage-Parameter-Control (UPC): pass
Wrr weight: 15
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Cross-connect-interface: ATM13/0/0, Type: ATM Swi/Proc
Cross-connect-VPI = 0
Cross-connect-VCI = 99
Cross-connect-UPC: pass
Cross-connect OAM-configuration: disabled
Cross-connect OAM-state: Not-applicable
Encapsulation: AALQSAAL
Threshold Group: 6, Cells queued: 0
Rx cells: 131, Tx cells: 134
Tx Clp0:134, Tx Clp1: 0
Rx Clp0:65, Rx Clp1: 66
Rx Upc Violations:0, Rx cell drops:0
Rx pkts:131, Rx pkt drops:0
Rx connection-traffic-table-index: 2
Rx service-category: CBR (Constant Bit Rate)
Rx pcr-clp01: 424
Rx scr-clp01: none
Rx mcr-clp01: none
Rx cdvt: 1024 (from default for interface)
Rx mbs: none
Tx connection-traffic-table-index: 2
Tx service-category: CBR (Constant Bit Rate)
Tx pcr-clp01:
424
Tx scr-clp01: none
Tx mcr-clp01: none
Tx cdvt: none
Tx mbs: none
Crc Errors:0, Sar Timeouts:0, OverSizedSDUs:0
BufSzOvfl: Small:0, Medium:0, Big:0, VeryBig:0, Large:0
```

5500-asp-e# show atm vc interface atm11/0/1.5 5 5

```
Interface: ATM11/0/1.5, Type: oc3suni
VPI = 5 VCI = 5
Status: UP
Time-since-last-status-change: 01:09:56
Connection-type: PVC
Cast-type: point-to-point
Packet-discard-option: enabled
Usage-Parameter-Control (UPC): pass
```

```

Wrr weight: 15
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Cross-connect-interface: ATM13/0/0, Type: ATM Swi/Proc
Cross-connect-VPI = 0
Cross-connect-VCI = 67
Cross-connect-UPC: pass
Cross-connect OAM-configuration: disabled
Cross-connect OAM-state: Not-applicable
Encapsulation: AALQSAAL
Threshold Group: 6, Cells queued: 0
Rx cells: 917, Tx cells: 921
Tx Clp0:921, Tx Clp1: 0
Rx Clp0:449, Rx Clp1: 468
Rx Upc Violations:0, Rx cell drops:0
Rx pkts:909, Rx pkt drops:0
Rx connection-traffic-table-index: 6
Rx service-category: UBR (Unspecified Bit Rate)
Rx pcr-clp01: 424
Rx scr-clp01: none
Rx mcr-clp01: none
Rx      cdvt: 1024 (from default for interface)
Rx      mbs: none
Tx connection-traffic-table-index: 6
Tx service-category: UBR (Unspecified Bit Rate)
Tx pcr-clp01: 424
Tx scr-clp01: none
Tx mcr-clp01: none
Tx      cdvt: none
Tx      mbs: none
Crc Errors:0, Sar Timeouts:0, OverSizedSDUs:0
BufSzOvfl: Small:2, Medium:0, Big:0, VeryBig:0, Large:0

```

Use the **show atm interface resource atmx/y/z.n** command to see what resources are available in each tunnel and which resources are reserved by VCs that go through the tunnel.

```
5500-asp-e# show atm interface resource atm11/0/1.5
```

```

Resource Management configuration:
  Service Categories supported: ubr
  Link Distance: 0 kilometers
  Best effort connection limit: disabled 0 max connections
  Max traffic parameters by service (rate in Kbps, tolerance in cell-times):
    Peak-cell-rate RX: none ubr
    Peak-cell-rate TX: none ubr
    Minimum-cell-rate RX: none ubr
    Minimum-cell-rate TX: none ubr
    CDVT RX: none ubr
    CDVT TX: none ubr
Resource Management state:
  Best effort connections: 5 pvcs, 5 svcs

```

```
5500-asp-e# show atm interface resource atm11/0/1.6
```

```

Resource Management configuration:
  Service Categories supported: cbr
  Link Distance: 0 kilometers
  Best effort connection limit: disabled 0 max connections
  Max traffic parameters by service (rate in Kbps, tolerance in cell-times):

```

```

Peak-cell-rate RX: none cbr,
Peak-cell-rate TX: none cbr,
Minimum-cell-rate RX:
Minimum-cell-rate TX:
CDVT RX: none cbr,
CDVT TX: none cbr,
Resource Management state:
  Available bit rates (in Kbps):
    7986 cbr RX, 7986 cbr TX, 0 vbr RX, 0 vbr TX,
    0 abr RX, 0 abr TX, 0 ubr RX, 0 ubr TX
  Allocated bit rates:
    1741 cbr RX, 1741 cbr TX, 0 vbr RX, 0 vbr TX,
    0 abr RX, 0 abr TX, 0 ubr RX, 0 ubr TX

```

Verify 5500-asp-f

This section provides information you can use to confirm your configuration is working properly.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

- **show atm vp** Used to verify that VP is operational.

```

5500-asp-f# show atm vp

Interface      VPI      Type      X-Interface    X-VPI      Status
ATM11/0/0      6        PVP       ATM11/0/1      6          UP
ATM11/0/0      10       PVP       ATM11/0/1      5          UP
ATM11/0/1      5        PVP       ATM11/0/0      10         UP
ATM11/0/1      6        PVP       ATM11/0/0      6          UP

```

```
5500-asp-f#
```

- **show atm interface resource atmx/y/z** Used to see resources reserved by these two VPs on an interface.

```

5500-asp-f# show atm interface resource atm11/0/1

Resource Management configuration:
  Service Classes:
    Service Category map: c1 cbr, c2 vbr-rt, c3 vbr-nrt, c4 abr, c5 ubr
    Scheduling: RS c1 WRR c2, WRR c3, WRR c4, WRR c5
    WRR Weight: 8 c2, 1 c3, 1 c4, 1 c5
    Pacing: disabled 0 Kbps rate configured, 0 Kbps rate installed
    Service Categories supported: cbr,vbr-rt,vbr-nrt,abr,ubr
    Link Distance: 0 kilometers
  Controlled Link sharing:
    Max aggregate guaranteed services: none RX, none TX
    Max bandwidth: none cbr RX, none cbr TX, none vbr RX, none vbr TX,
                  none abr RX, none abr TX, none ubr RX, none ubr TX
    Min bandwidth: none cbr RX, none cbr TX, none vbr RX, none vbr TX,
                  none abr RX, none abr TX, none ubr RX, none ubr TX
  Best effort connection limit: disabled 0 max connections
  Max traffic parameters by service (rate in Kbps, tolerance in cell-times):
    Peak-cell-rate RX: none cbr, none vbr, none abr, none ubr
    Peak-cell-rate TX: none cbr, none vbr, none abr, none ubr
    Sustained-cell-rate: none vbr RX, none vbr TX
    Minimum-cell-rate RX: none abr, none ubr
    Minimum-cell-rate TX: none abr, none ubr
    CDVT RX: none cbr, none vbr, none abr, none ubr
    CDVT TX: none cbr, none vbr, none abr, none ubr
    MBS: none vbr RX, none vbr TX

```

Resource Management state:

Available bit rates (in Kbps):

137503 cbr RX, 137503 cbr TX, 137503 vbr RX, 137503 vbr TX,
137503 abr RX, 137503 abr TX, 137503 ubr RX, 137503 ubr TX

Allocated bit rates:

10240 cbr RX, 10240 cbr TX, 0 vbr RX, 0 vbr TX,
0 abr RX, 0 abr TX, 0 ubr RX, 0 ubr TX

Best effort connections: 1 pvcs, 0 svcs

5500-asp-f#

8540-MSR

This section provides information you can use to confirm your configuration is working properly.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only), which allows you to view an analysis of **show** command output.

- **show atm vp** Used to verify that the VP tunnel is up.

8540-MSR# **show atm vp**

Interface	VPI	Type	X-Interface	X-VPI	Status
ATM2/1/0	6	PVP	TUNNEL		
ATM2/1/0	10	PVP	TUNNEL		

- **show atm vc interface atmx/y/z.n** Used to verify that the CES PVC is going through the CBR VP tunnel.

8540-MSR# **show atm vc interface atm2/1/0.10**

Interface	VPI	VCI	Type	X-Interface	X-VPI	X-VCI	Encap	Status
ATM2/1/0.10	10	3	PVC	ATM0	0	140	SNAP	UP
ATM2/1/0.10	10	4	PVC	ATM0	0	141	SNAP	UP
ATM2/1/0.10	10	5	PVC	ATM0	0	139	QSAAL	UP
ATM2/1/0.10	10	16	PVC	ATM0	0	138	ILMI	UP
ATM2/1/0.10	10	18	PVC	ATM0	0	142	PNNI	UP
ATM2/1/0.10	10	43	SVC	ATM0	0	149	LANE	UP
ATM2/1/0.10	10	44	SVC	ATM0	0	132	LANE	UP
ATM2/1/0.10	10	45	SVC	ATM0	0	150	LANE	UP
ATM2/1/0.10	10	46	SVC	ATM0	0	136	LANE	UP

8540-MSR# **show atm vc interface atm2/1/0.6**

Interface	VPI	VCI	Type	X-Interface	X-VPI	X-VCI	Encap	Status
ATM2/1/0.6	6	3	PVC	ATM0	0	153	SNAP	UP
ATM2/1/0.6	6	4	PVC	ATM0	0	154	SNAP	UP
ATM2/1/0.6	6	5	PVC	ATM0	0	152	QSAAL	UP
ATM2/1/0.6	6	16	PVC	ATM0	0	151	ILMI	UP
ATM2/1/0.6	6	18	PVC					
ATM0	0	155	PNNI	UP				
ATM2/1/0.6	6	100	PVC	ATM-P1/0/3	0	16		UP

- **show atm vp interface atmx/y/z n m** Used to view service category information.

8540-MSR# **show atm vp interface atm2/1/0 10**

Interface: ATM2/1/0, Type: oc3suni
VPI = 10

```
Status: TUNNEL
Time-since-last-status-change: 01:25:46
Connection-type: PVP
Cast-type: point-to-point
Usage-Parameter-Control (UPC): pass
Wrr weight: 2
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Threshold Group: 5, Cells queued: 0
Rx cells: 0, Tx cells: 0
Tx Clp0:0, Tx Clp1: 0
Rx Clp0:0, Rx Clp1: 0
Rx Upc Violations:0, Rx cell drops:0
Rx Clp0 q full drops:0, Rx Clp1 qthresh drops:0
Rx connection-traffic-table-index: 1
Rx service-category: UBR (Unspecified Bit Rate)
Rx pcr-clp01: 7113539
Rx scr-clp01: none
Rx mcr-clp01: none
Rx      cdvt: 1024 (from default for interface)
Rx      mbs: none
Tx connection-traffic-table-index: 1
Tx service-category: UBR (Unspecified Bit Rate)
Tx pcr-clp01: 7113539
Tx scr-clp01: none
Tx mcr-clp01: none
Tx      cdvt: none
Tx      mbs: none
```

```
8540-MSR# show atm vp interface atm2/1/0 6
```

```
Interface: ATM2/1/0, Type: oc3suni
VPI = 6
Status: TUNNEL
Time-since-last-status-change: 01:04:52
Connection-type: PVP
Cast-type: point-to-point
Usage-Parameter-Control (UPC): pass
Wrr weight: 2
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Threshold Group: 1, Cells queued: 0
Rx cells: 0, Tx cells: 0
Tx Clp0:0, Tx Clp1: 0
Rx Clp0:0, Rx Clp1: 0
Rx Upc Violations:0, Rx cell drops:0
Rx Clp0 q full drops:0, Rx Clp1 qthresh drops:0
Rx connection-traffic-table-index: 63999
Rx service-category: CBR (Constant Bit Rate)
Rx pcr-clp01: 10240
Rx scr-clp01: none
Rx mcr-clp01: none
Rx      cdvt: 500
Rx      mbs: none
Tx connection-traffic-table-index: 63999
Tx service-category: CBR (Constant Bit Rate)
Tx pcr-clp01: 10240
Tx scr-clp01: none
Tx mcr-clp01: none
```

```
Tx      cdvt: 500
Tx      mbs: none
```

- **show atm interface resource atm x/y/z.n** Used to see what resources are available in each tunnel and which resources are reserved by VCs that go through the tunnel.

```
8540-MSR# show atm interface resource atm 2/1/0.6
```

```
Resource Management configuration:
  Service Categories supported: cbr
  Link Distance: 0 kilometers
  Best effort connection limit: disabled 0 max connections
  Max traffic parameters by service (rate in Kbps, tolerance in cell-times):
    Peak-cell-rate RX: none cbr,
    Peak-cell-rate TX: none cbr,
    Minimum-cell-rate RX:
    Minimum-cell-rate TX:
    CDVT RX: none cbr,
    CDVT TX: none cbr,
Resource Management state:
  Available bit rates (in Kbps):
    7986 cbr RX, 7986
cbr
TX, 0 vbr RX, 0 vbr TX,
  0 abr RX, 0 abr TX, 0 ubr RX, 0 ubr TX
  Allocated bit rates:
    1741 cbr RX, 1741 cbr TX, 0 vbr RX, 0 vbr TX,
    0 abr RX, 0 abr TX, 0 ubr RX, 0 ubr TX
```

```
8540-MSR# show atm interface resource atm 2/1/0.10
```

```
Resource Management configuration:
  Service Categories supported: ubr
  Link Distance: 0 kilometers
  Best effort connection limit: disabled 0 max connections
  Max traffic parameters by service (rate in Kbps, tolerance in cell-times):
    Peak-cell-rate RX: none ubr
    Peak-cell-rate TX: none ubr
    Minimum-cell-rate RX: none ubr
    Minimum-cell-rate TX: none ubr
    CDVT RX: none ubr
    CDVT TX: none ubr
Resource Management state:
  Best effort connections: 5 pvcs, 4 svcs
```

- **show atm pnni neighbor** Used to verify that the PNNI neighbors are in full state.

```
8540-MSR# show atm pnni neighbor
```

```
Neighbors For Node (Index 1, Level 56)
  Neighbor Name: 5500-asp-e, Node number: 10
  Neighbor Node Id: 56:160:47.0091810000000050537E1401.0050537E1401.00
  Neighboring Peer State: Full
  Link Selection Set To: minimize blocking of future calls
  Port          Remote Port Id      Hello state
  ATM2/1/0.6    ATM11/0/1.6         2way_in
  ATM2/1/0.10   ATM11/0/1.5         2way_in (Flood Port)
```

- **show lane** Used to display detailed information for all LANE components configured on an interface or any of its subinterfaces, on a specified subinterface, or on an emulated LAN (ELAN).

```
8540-MSR# show lane
```

```

LE Config Server ATM0 config table: PVP
Admin: up State: operational
LECS Mastership State: active master
list of global LECS addresses (23 seconds to update):
47.009181000000009021448401.009021448405.00 <----- me
ATM Address of this LECS: 47.009181000000009021448401.009021448405.00 (auto)
  vcd  rxCnt  txCnt  callingParty
  128   3     3     47.009181000000009021448401.009021448403.01 LES test 0 active
cumulative total number of unrecognized packets received so far: 0
cumulative total number of config requests received so far: 6
cumulative total number of config failures so far: 0

```

```

LE Server ATM0.1, Elan name: test, Admin: up, State: operational
Type: ethernet, Max Frame Size: 1516
locally set elan-id: not set
elan-id obtained from LECS: not set
ATM address: 47.009181000000009021448401.009021448403.01
LECS used: 47.009181000000009021448401.009021448405.00 connected, vcd 126
control distribute: vcd 132, 2 members, 17 packets
proxy/ (ST: Init, Conn, Waiting, Adding, Joined, Operational, Reject, Term)

```

lecid ST

```

vcd    pkts Hardware Addr  ATM Address
  1P O  131          9 0090.2144.8402 47.009181000000009021448401.009021448402.01
  2P O  149          9 0050.537e.1402 47.0091810000000050537E1401.0050537E1402.01

```

```

LE BUS ATM0.1 ELAN name: test Admin: up State: operational
type: ethernet Max Frame Size: 1516
ATM address: 47.009181000000009021448401.009021448404.01
data forward: vcd 136, 2 members, 34 packets, 3 unicasts

```

```

lecid  vcd    pkts  ATM Address
  1    135     93 47.009181000000009021448401.009021448402.01
  2    150     79 47.0091810000000050537E1401.0050537E1402.01

```

```

LE Client ATM0.1 ELAN name: test Admin: up State: operational
Client ID: 1 LEC up for 1 hour 28 minutes 44 seconds
ELAN ID: 0
Join Attempt: 8
Last Fail Reason: Locally deactivate
HW Address: 0090.2144.8402 Type: ethernet Max Frame Size: 1516
ATM Address: 47.009181000000009021448401.009021448402.01

```

```

VCD  rxFrames  txFrames  Type      ATM Address
  0      0         0  configure 47.009181000000009021448401.009021448405.00
 130      1         9  direct   47.009181000000009021448401.009021448403.01
VCD  rxFrames  txFrames  Type      ATM Address
 133      17         0  distribute 47.009181000000009021448401.009021448403.01
 134       0        93  send      47.009181000000009021448401.009021448404.01
 137      17         0  forward

```

47.009181000000009021448401.009021448404.01

• **show ces circuit** Used to display detailed circuit information for the CBR interface.

8540-MSR# **show ces circuit**

```

Interface  Circuit  Circuit-Type  X-interface  X-vpi  X-vci  Status
CBR1/0/0   0        HardPVC      ATM2/1/0.6   6      100   UP

```

```
5500-asp-e# show ces circuit
```

Interface	Circuit	Circuit-Type	X-interface	X-vpi	X-vci	Status
CBR10/0/0	0	HardPVC	ATM11/0/1.6	6	100	UP

- **show atm connection-traffic-table** Use the connection traffic table to specify different service categories and traffic parameters. Once you specify the parameters, use the index to configure VC and VP category and traffic parameters. To view the connection traffic table settings, use the **show atm connection-traffic-table** command.

```
8540-MSR# show atm connection-traffic-table
```

Row	Service-category	pcr	scr/mcr	mbs	cdvt
1	ubr	7113539	none		none
2	cbr	424			none
3	vbr-rt	424	424	50	none
4	vbr-nrt	424	424	50	none
5	abr	424	0		none
6	ubr	424	none		none
63999	cbr	10240			500
64000	cbr	1741			none
2147483637	ubr	149760	none		none
2147483638	ubr	149760	none		none
2147483639	ubr	149760	none		none
2147483640	ubr	149760	none		none
2147483645*					
ubr	0	none		none	
2147483646*	ubr	1	none		none
2147483647*	ubr	7113539	none		none

```
5500-asp-e# show atm connection-traffic-table
```

Row	Service-category	pcr	scr/mcr	mbs	cdvt
1	ubr	7113539	none		none
2	cbr	424			none
3	vbr-rt	424	424	50	none
4	vbr-nrt	424	424	50	none
5	abr	424	0		none
6	ubr	424	none		none
63999	cbr	1741			none
64000	cbr	10240			500
2147483637	ubr	149760			
none		none			
2147483638	ubr	149760	none		none
2147483639	ubr	149760	none		none
2147483640	ubr	149760	none		none
2147483645*					
ubr	0	none		none	
2147483646*	ubr	1	none		none
2147483647*	ubr	7113539	none		none

5500-asp-f# **show atm connection-traffic-table**

Row	Service-category	pcr	scr/mcr	mbs	cdvt
1	ubr	7113539	none		none
2	cbr	424			none
3	vbr-rt	424	424	50	none
4	vbr-nrt	424	424	50	none
5	abr	424	0		none
6	ubr	424			
	none	none			
64000	cbr	10240			500
2147483645*	ubr	0	none		none
2147483646*	ubr	1	none		none
2147483647*	ubr	7113539	none		none

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

Related Information

- [ATM Support Resources](#)
 - [Technical Support – Cisco Systems](#)
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