

14 CSM Commands

The following chapter contains information on CSM port configuration commands. Topics include:

- Configuring port traffic parameters
- Creating Virtual Path tunnels
- Viewing basic information on CSM ports
- Configuring CSM profiles

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CSM Port Configuration Commands

csm port address

Command Usage

Modify the 6-byte End Station Identifier (ESI) for a specified CSM port.

Syntax Options

csm port <slot/port> address <esi>

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

esi = specifies the 6-byte, 12 hex-characters End Station Identifier (ESI) for this port

Examples:

atm port 4/2 address 0020da79efbf
address 0020da79efbf

Corresponding UI Command

map

csm port interface

Command Usage

Modify the type of ATM interface that a specified CSM port supports.

Syntax Options

```
csm port <slot/port> interface [type] {Public UNI | Private UNI | PNNI | IISP Network | IISP User}
```

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

type = optional command syntax

Public UNI = Public User-to-Network Interface. This port will be used for connections to public ATM service carrier switches, such as those used by Telcos.

Private UNI = Private User-to-Network Interface. This port is used for private UNI uplinks. Such a port would connect either directly to an ATM workstation, LAN switch, or ATM attached router.

PNNI = Private-Network-to-Network Interface. This port will support PNNI version 1.0 ATM routing, which includes support for a single peer group mapping.

IISP Network = Network Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between networks using the IISP protocol.

IISP User = User Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between users and a networks using the IISP protocol.

Examples:

```
csm port 4/2 interface type Private UNI
```

```
csm port 4/2 interface Private UNI  
interface Private UNI
```

Corresponding UI Command

map

Remarks

If your software version is prior to 4.1, then you *must* reboot the switch when you change the interface type from **PNNI 1.0** to **Pub UNI** or **Priv UNI**.

csm port signaling version

Command Usage

Modify the version of the User-to-Network Interface (UNI) used on this port.

Syntax Options

csm port <slot/port> signaling version {3.0 | 3.1}

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

3.0 = UNI signaling version 3.0

3.1 = UNI signaling version 3.1

Switch Default:

signaling version = **3.0**

Examples:

csm port 4/2 signaling version 3.0

signaling version 3.0

Corresponding UI Command

map

Remarks

If you change the signaling version from UNI 3.0 to UNI 3.1 (or vice versa), then you *must* reboot the switch.

csm port ilmi**Command Usage**

Configure the status of the Integrated Management Interface (ILMI).

Syntax Options

```
csm port <slot/port> ilmi {enable | disable}
```

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

enable = enables ILMI on this port

disable = disables ILMI on this port

Examples:

```
csm port 4/2 ilmi enable
```

```
ilmi enable
```

Corresponding UI Command

map

csm port vpi bits

Command Usage

Modify the maximum number of bits that can be used for Virtual Path Identifiers (VPIs).

Syntax Options

```
csm port <slot/port> vpi bits <bits#>
```

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

bits# = specifies the maximum number of bits that can be used for Virtual Path Identifiers (VPIs) on this CSM port.

Examples:

```
csm port 4/2 vpi bits 4
```

```
vpi bits 4
```

Corresponding UI Command

map

csm port physical media**Command Usage**

Configure the type of physical media standard used for a specified port.

Syntax Options

csm port <slot/port> physical media {SONET | SDH}

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

SONET = Synchronous Optical Network physical media standard

SDH = Synchronous Digital Hierarchy physical media standard

Examples:

csm port 4/2 physical media SDH

physical media SDH

Corresponding UI Command

map

csm port description

Command Usage

Modify the textual description for a specified CSM port.

Syntax Options

```
csm port <slot/port> description <string>
```

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

string = specifies a textual description of this port (can be up to 30 characters long). Description strings with spaces must be enclosed in quotations (e.g., "**CSM PORT**")

Examples:

```
csm port 4/2 description CSMPORT
```

```
description CSMPORT
```

Corresponding UI Command

map

csm port timing mode

Command Usage

Modify clock type the switch will use for a specified CSM port.

Syntax Options

csm port <slot/port> timing mode {Local | Loop}

Definitions:

slot/port = specifies the slot/port of the CSM port you want to modify

Local = the transmit, or internal, clock

Loop = the receive, or external, clock

Switch Default:

Local

Examples:

csm port 4/2 timing mode local

timing mode local

Corresponding UI Command

map

Remarks

If you set a CSM port to loop *and* you are connecting it to an ATM uplink or access port, the ATM uplink or access port must be on an OmniSwitch module.

csm port local

Command Usage

Modify the source a port uses to drive its transmit data.

Syntax Options

csm port <slot/port> local {Osc | Bus}

Definitions:
slot/port = specifies the slot/port of the CSM port you want to modify
Osc = the local oscillator, provides the backplane with a Stratum 4-level clock
Bus = the bus backplane, provides a single reference clock across the network

Examples:
csm port 4/2 local Osc
local Osc

Corresponding UI Command

map

Remarks

This value is only valid if you chose a **Local** timing mode through the **csm port timing mode** command on **page 14-13**.

CSM Connection Command

csm pvc

Command Usage

Create a single Permanent Virtual Circuit (PVC) connection for a physical port and logical vci.

Syntax Options

```
csm pvc <slot/port> <vpi#> <vci#> <outSlot/outPort> [outVpi outVci]
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to set up the virtual circuit

vpi = specifies the Virtual Path Identifier for this virtual connection

vci = specifies the Virtual Channel Identifier for this virtual connection

outSlot = specifies the slot number for the module on which output traffic is forwarded along the virtual circuit path

OutPort = specifies the port number on which output traffic is forwarded along the virtual circuit path

outVpi = specifies the Virtual Path Identifier (VPI) on which output traffic is forwarded along the virtual circuit path.

Optional command syntax.

outVci = specifies the Virtual Channel Identifier (VCI) on which output traffic is forwarded along the virtual circuit path. This value is only valid if you are setting up a Virtual Channel Connection; a VCI is not required if you are setting up just a Virtual Path. Optional command syntax.

Switch Defaults:

outVpi = incoming values

outVci = incoming values

Examples:

```
csm pvc 5/1 2 100 5/1 2 100
```

Corresponding UI Command

cvc

no csm pvc

Command Usage

Delete a PVC connection.

Syntax Options

| |
|---|
| csm pvc <i><slot/port></i> <i><vpi#></i> <i><vci#></i> |
|---|

Definitions:

slot/port = specifies the slot/port of the virtual connection you want to delete

vpi# = specifies the Virtual Path Identifier for this virtual connection

vci# = specifies the Virtual Channel Identifier for this virtual connection

Examples:

no csm pvc 5/1 1 200

Corresponding UI Command

dvc

csm pvc profile**Command Usage**

Create multiple PVC connections using a CSM profile.

Syntax Options

```
csm pvc <slot/port> <vpi> <vci1-vci2> <outSlot/outPort> <outVpi> <outVci1-outVci2> profile
<profile_name>
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to set up the multiple virtual circuits

vpi = specifies the Virtual Path Identifier for these virtual connections

vci1-vci2 = specifies the Virtual Channel Identifier for this virtual connection

outSlot/OutPort = specifies the slot and port numbers for the module on which output traffic is forwarded along the virtual circuit path

outVPI = specifies the Virtual Path Identifier (VPI) on which output traffic is forwarded along the virtual circuit path (optional)

outVCI = specifies the Virtual Channel Identifier (VCI) on which output traffic is forwarded along the virtual circuit path. This value is only valid if you are setting up a Virtual Channel Connection; a VCI is not required if you are setting up just a Virtual Path.

outVci1-outVci2 = specifies the range of Virtual Channel Identifiers (VCIs) on which output traffic is forwarded along the vectorial circuit path. These values are only valid if you are setting up a Virtual Channel Connection; VCIs are not required if you are setting up just a Virtual Path.

profile_name = the description string of the profile to be used for this PVC connection

Examples:

```
csm pvc 5/1 1 100-300 4/1 1 100-300 profile video_traffic
```

Remarks

For more information on CSM profiles, see *CSM Profile Commands* on page 14-96.

csm pvc outgoing port

Command Usage

Modify the port number on which traffic is forwarded along the virtual circuit path.

Syntax Options

csm pvc <slot/port> <vpi> <vci> outgoing port <slot/port>

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a PVC

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

slot/port = specifies the new slot/port on which traffic is to be forwarded

Examples:

csm pvc 5/1 2 100 outgoing port 4/2

outgoing port 4/2

Corresponding UI Command

mvc

csn pvc outgoing vc**Command Usage**

Modify the virtual circuit path on which output traffic is forwarded.

Syntax Options

csn pvc *<slot/port>* *<vpi>* *<vci>* **outgoing vc** *<vpi#>* *<vci#>*

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a PVC

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

vpi# = specifies the new VPI on which output traffic is to be forwarded

vci# - specifies the new VCI on which output traffic is to be forwarded

Examples:

csn pvc 5/1 2 100 outgoing vc 50 200

outgoing vc 50 200

Corresponding UI Command

mvc

csm pvc bidirectional traffic

Command Usage

Modify whether you want to use the same traffic parameters for the transmit and receive sides of a specified virtual circuit.

Syntax Options

```
csm pvc <slot/port> <vpi> <vci> bidirectional traffic {off | on}
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a PVC

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

off = turns off bidirectional traffic.

on = turns on bidirectional traffic (Tx parameters will match the Rx traffic parameters).

Examples:

```
csm pvc 5/1 2 100 bidirectional traffic on
```

```
bidirectional traffic on
```

Corresponding UI Command

mvc

csm pvc qos class tx**Command Usage**

Modify the Quality of Service (QoS) for cells transmitted (from source to destination) on this VPI or VPI/VCI.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **qos class tx** {Unspecified | 1 | 2 | 3 | 4}

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

Unspecified = Best Effort for data traffic (UBR)

1 = Class 1. QoS Class 1. Circuit Emulation, Constant Bit Rate Traffic (CBR)

2 = Class 2. Variable Bit Rate for Audio and Video Traffic (rt-VBR)

3 = Class 3. VBR for Connection-Oriented Protocols Such as Frame Relay (nrt-VBR)

4 = Class 4. Available Bit Rate for Connectionless Data Protocols Such as IP (ABR)

Examples:

csm pvc 5/1 2 100 qos class tx 1

qos class tx 1

Corresponding UI Command

mvc

csm pvc best effort tx

Command Usage

Modify whether you want to use the Peak Cell Rate (PCR) setting (specified through either the **csm pvc pcr Clp01 tx** command on page 14-24 or the **csm pvc Clp0 tx** command on page 14-25) to determine the amount of bandwidth allocated or to use all available bandwidth for transmitted cells.

Syntax Options

csm pvc <slot/port> <vpi> <vci> best effort tx {enable | disable | on | off}

Definitions:
slot/port = specifies the slot/port of the PVC you want to modify
vpi = specifies the Virtual Path Identifier for the virtual connection
vci = specifies the Virtual Channel Identifier for the virtual connection
enable = enables best effort for transmitted cells
disable = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.
on = enables best effort for transmitted cells
off = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

Examples:
csm pvc 5/1 1 100 best effort tx enable
csm pvc best effort tx enable

Corresponding UI Command

mvc

csm pvc traffic descriptor tx

Command Usage

Modify the traffic descriptor bundle for traffic transmitted from this connection.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **traffic descriptor tx** {none | clp | scr | tag | clp scr | clp tag | scr tag | clp scr tag}

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

none = specifies no traffic enforcement imposed

clp = specifies cell loss priority traffic enforcement parameter

scr = specifies sustained cell rate traffic enforcement parameter

tag = specifies tagging traffic enforcement parameter

clp scr = specifies cell loss priority *and* sustained cell rate traffic enforcement parameters

clp tag = specifies cell loss priority *and* tagging traffic enforcement parameters

scr tag = specifies sustained cell rate *and* tagging traffic enforcement parameters

clp scr tag = specifies cell loss priority, sustained cell rate *and* tagging traffic enforcement parameters

Examples:

csm pvc 5/1 2 200 traffic descriptor tx none

csm pvc 5/1 2 200 traffic descriptor tx clp

csm pvc 5/1 2 200 traffic descriptor tx clp scr

traffic descriptor tx scr tag

traffic descriptor tx clp scr tag

Corresponding UI Command

mvc

csm pvc pcr Clp01 tx

Command Usage

Modify the Peak Cell Rate (PCR), in cells per second, allowed for transmitted traffic on a specified virtual circuit.

Syntax Options

```
csm pvc <slot/port> <vpi> <vci> pcr Clp01 tx <pcr#>
```

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Switch Default:

pcr# = **3**

Examples:

```
csm pvc 5/1 2 200 pcr Clp01 tx 10000
```

```
pcr Clp01 tx 10000
```

Corresponding UI Command

mvc

Remarks

If the PCR value that you specify exceeds the amount of actual bandwidth, then the switch will use the maximum available bandwidth.

csm pvc pcr Clp0 tx**Command Usage**

Modify the Peak Cell Rate (PCR), in cells per second, allowed for transmitted traffic on a specified virtual circuit.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **pcr Clp0 tx** *<pcr#>*

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Switch Default:

pcr# = **3**

Examples:

csm pvc 5/1 2 200 pcr Clp0 tx 10000

pcr Clp0 tx 10000

Corresponding UI Command

mvc

Remarks

If the PCR value that you specify exceeds the amount of actual bandwidth, then the command will not work.

csn pvc scr tx

Command Usage

Modify the the Sustaining Cell Rate (SCR), in cells per second, allowed for transmitted traffic on a specified virtual circuit.

Syntax Options

```
csn pvc <slot/port> <vpi> <vci> scr tx <scr#>
```

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

scr# = the Sustained Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

```
csn pvc 5/1 2 200 scr tx 2
```

```
scr tx 2
```

Corresponding UI Command

mvc

csm pvc maximum burst size tx**Command Usage**

Modify the Maximum Burst Size (MBS), in cells, allowed for transmitted traffic on a specified virtual circuit.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **maximum burst size tx** *<mbs#>*

Definitions:

slot/port = specifies the slot/port of the port you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the logical virtual channel identifier on this port

mbs# = specifies the MBS, in cells per second, acceptable for traffic received on this VCC

Examples:

csm pvc 5/1 2 200 maximum burst size tx 1

maximum burst size tx 1

Corresponding UI Command

mvc

csm pvc qos class rx

Command Usage

Modify the Quality of Service (QoS) for cells received from the destination at the source on this VPI or VPI/VCI.

Syntax Options

```
csm pvc <slot/port> <vpi> <vci> qos class rx {Unspecified | 1 | 2 | 3 | 4}
```

Definitions:

description = specifies the slot/port of the PVC you want to modify

Unspecified = Best Effort for data traffic (UBR)

1 = Class 1. Circuit Emulation, Constant Bit Rate Traffic (CBR)

2 = Class 2. Variable Bit Rate for Audio and Video Traffic (rt-VBR)

3 = Class 3. VBR for Connection-Oriented Protocols Such as Frame Relay (nrt-VBR)

4 = Class 4. Available Bit Rate for Connectionless Data Protocols Such as IP (ABR)

Examples:

```
csm pvc 5/1 2 100 qos class rx 1
```

```
qos class rx 1
```

Corresponding UI Command

mvc

csm pvc best effort rx

Command Usage

Modify whether you want to use the Peak Cell Rate (PCR) setting (specified through either the **csm pvc pcr Clp01 rx** or **csm pvc Clp0 rx** command) to determine the amount of bandwidth allocated or to use all available bandwidth for transmitted cells.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **best effort rx** {enable | disable | on | off}

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

enable = enables best effort for transmitted cells

disable = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

on = enables best effort for transmitted cells

off = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

Examples:

csm pvc 5/1 best effort rx enable

best effort rx enable

Corresponding UI Command

mvc

csm pvc traffic descriptor rx

Command Usage

Modify the traffic descriptor bundle for traffic received at this connection.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **traffic descriptor rx** {*none* | *clp* | *scr* | *tag* | *clp scr* | *clp tag* | *scr tag* | *clp scr tag*}

Definitions:
slot/port = specifies the slot/port of the PVC you want to modify
vpi# = specifies the Virtual Path Identifier for the virtual connection
vci# = specifies the Virtual Channel Identifier for the virtual connection
none = specifies no traffic enforcement imposed
clp = specifies cell loss priority traffic enforcement parameter
scr = specifies sustained cell rate traffic enforcement parameter
tag = specifies tagging traffic enforcement parameter
clp scr = specifies cell loss priority *and* sustained cell rate traffic enforcement parameters
clp tag = specifies cell loss priority *and* tagging traffic enforcement parameters
scr tag = specifies sustained cell rate *and* tagging traffic enforcement parameters
clp scr tag = specifies cell loss priority, sustained cell rate *and* tagging traffic enforcement parameters

Examples:
csm pvc 5/1 2 200 traffic descriptor rx none
csm pvc 5/1 2 200 traffic descriptor rx clp
csm pvc 5/1 2 200 traffic descriptor rx clp scr
csm pvc traffic descriptor rx scr tag
traffic descriptor rx clp scr tag

Corresponding UI Command

mvc

csm pvc pcr Clp01 rx**Command Usage**

Modify the Peak Cell Rate (PCR), in cells per second, allowed for traffic received on a specified virtual circuit.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **pcr Clp01 rx** *<pcr#>*

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Switch Default:

pcr# = **3**

Examples:

csm pvc 5/1 2 200 pcr Clp01 rx 10000

pcr Clp01 rx 10000

Corresponding UI Command

mvc

Remarks

If the PCR value that you specify exceeds the amount of actual bandwidth, then the command will not work.

csn pvc pcr Clp0 rx

Command Usage

Modify the Peak Cell Rate (PCR), in cells per second, allowed for traffic received on a specified virtual circuit.

Syntax Options

```
csn pvc <slot/port> <vpi> <vci> pcr Clp0 rx <pcr#>
```

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Switch Default:

pcr# = **3**

Examples:

```
csn pvc 5/1 2 200 pcr Clp0 rx 10000
```

```
pcr Clp0 rx 10000
```

Corresponding UI Command

mvc

Remarks

If the PCR value that you specify exceeds the amount of actual bandwidth, then the command will not work.

csn pvc scr rx**Command Usage**

Modify the the Sustaining Cell Rate (SCR), in cells per second, allowed for traffic received on a specified virtual circuit.

Syntax Options

csn pvc *<slot/port>* *<vpi>* *<vci>* **scr rx** *<scr#>*

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

scr# = the Sustained Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csn pvc 5/1 2 200 scr rx 2

scr rx 2

Corresponding UI Command

mvc

csm pvc maximum burst size rx

Command Usage

Modify the Maximum Burst Size (MBS), in cells, allowed for traffic received on a specified virtual circuit.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **maximum burst size rx** *<mbs#>*

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

mbs# = the Maximum Burst Size (in cells) allowed for traffic received on this virtual circuit

Examples:

csm pvc 5/1 2 200 maximum burst size rx 1

maximum burst size rx 1

Corresponding UI Command

mvc

csm pvc channel type**Command Usage**

Modify the type of connection supported by a specified channel.

Syntax Options

```
csm pvc <slot/port> <vpi> <vci> channel type {nni | uni}
```

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

nni = Network-to-node interface connection

uni = User-to-Network interface connection

Examples:

```
csm pvc 5/1 2 200 channel type nni
```

```
channel type nni
```

Corresponding UI Command

mvc

csm pvc transport priority

Command Usage

Modify the type of traffic and its priority on this connection.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **transport priority** {**cbr** | **cbr prs** | **vbr rt** | **vbr nrt** | **abr** | **ubr**}

Definitions:
slot/port = specifies the slot/port of the PVC you want to modify
vpi = specifies the Virtual Path Identifier for the virtual connection
vci = specifies the Virtual Channel Identifier for the virtual connection
cbr = Continuous Bit Rate
cbr prs = Continuous Bit Rate with Primary Reference Source
vbr rt = Variable Bit Rate, Real Time
vbr nrt = Variable Bit Rate, Non-Real Time
abr = Available Bit Rate
ubr = Unspecified Bit Rate

Examples:
csm pvc 5/1 2 200 transport priority cbr
transport priority cbr

Corresponding UI Command

mvc

csm pvc multicast status**Command Usage**

Modify the multicast, or point-to-multipoint, virtual circuits on a specified primary virtual circuit.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **multicast status** {**disable** | **enable** | **on** | **off**}

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

disable = disables multicast circuits on this primary virtual circuit

enable = enables multicast circuits on this primary virtual circuit

on = enables multicast circuits on this primary virtual circuit

off = disables multicast circuits on this primary virtual circuit

Examples:

csm pvc 5/1 2 200 multicast status enable

multicast status enable

Corresponding UI Command

mvc

csm pvc multicast

Command Usage

Modify the identifier values (VPI or VPI/VCI) for multicast virtual circuits.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **multicast** *<slot/port>* *<vpi#>* *<vci#>*

Definitions:
slot/port = specifies the slot/port of the PVC you want to modify
vpi = specifies the Virtual Path Identifier for the virtual connection
vci = specifies the Virtual Channel Identifier for the virtual connection
slot/port = specifies the new slot/port for multicast virtual circuits
vpi# = specifies the new Virtual Path Identifier for multicast virtual circuits
vci# = specifies the Virtual Channel Identifier for multicast virtual circuits

Examples:
csm pvc 5/1 2 200 multicast 4/1 2 100
multicast 4/1 2 100

Corresponding UI Command

mvc

Remarks

The values configured through this command are only valid if you enabled multicast support through the **csm pvc multicast status** command page 14-37.

csm pvc aal5 discard status**Command Usage**

Modify whether or not to discard AAL5 PDU cells during times of congestion.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **aal5 discard status** {**disable** | **enable** | **on** | **off**}

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

disable = disables AAL5 discard

enable = enables AAL5 discard

on = enables AAL5 discard

off = disables AAL5 discard

Switch Default:

disable

off

Examples:

csm pvc 5/1 2 200 aal5 discard status enable

aal5 discard status enable

Corresponding UI Command

mvc

csm pvc user priority

Command Usage

Modify the priority level assigned to this virtual circuit.

Syntax Options

csm pvc *<slot/port>* *<vpi>* *<vci>* **user priority** *<priority>*

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

priority = specifies User priority level

Examples:

csm pvc 5/1 2 200 user priority 4
user priority 4

Corresponding UI Command

mvc

Remarks

Priority level is used to decide which virtual circuit's traffic is discarded first in a situation where congestion occurs. The priority level for a virtual circuit can range from 0 to 15, with 0 being the highest priority and 15 being the lowest. The following defaults are supplied for each traffic type:

Traffic Type and Priority

| Traffic Type | Default Priority Level |
|---------------------|-------------------------------|
| CBR | 4 |
| VBR | 8 |
| ABR | 8 |
| UBR | 15 |

csm pvc cell delay variation**Command Usage**

Modify the Cell Delay Variation, or “jitter,” in mircoseconds.

Syntax Options

***csm pvc* <slot/port> <vpi> <vci> cell delay variation <cdv#>**

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi = specifies the Virtual Path Identifier for the virtual connection

vci = specifies the Virtual Channel Identifier for the virtual connection

cdv# = specifies the cell delay variation in microseconds

Examples:

csm pvc 5/1 2 200 cell delay variation 1000

cell delay variation 1000

Corresponding UI Command

mvc

CSM Virtual Path Tunnel Commands

csm tunnel

Command Usage

Create a Virtual Path (VP) Tunnel on a CSM port.

Syntax Options

```
csm tunnel <slot/port> <tunnelVpi#> {Public UNI | Private UNI | PNNI | IISP Network | IISP user}
```

Definitions:

slot/port = specifies the slot/port on which you want to set up the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are creating. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

Public UNI = Public User-to-Network interface type. This virtual path will be used for connections to public ATM service carrier switches, such as those used by Telcos.

Private UNI = Private User-to-Network interface type. The virtual path is used for private UNI uplinks. Such a VP would connect either directly to an ATM workstation, LAN switch, or ATM attached router.

PNNI = Private Network-to-Network interface type. The virtual path will support PNNI version 1.0 ATM routing, which includes support for a single peer group mapping.

IISP Network = Network Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between networks using the IISP protocol.

IISP Network = Network Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between networks using the IISP protocol.

IISP User = User Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between users and a networks using the IISP protocol.

Examples:

```
csm tunnel 8/1 1 Public UNI
```

Corresponding UI Command

cvpt

Remarks

If your software version is prior to 4.1, then you *must* reboot the switch when you change the interface type from **PNNI 1.0** to **Pub UNI** or **Priv UNI**.

no csm tunnel

Command Usage

Delete a Virtual Path (VP) Tunnel.

Syntax Options

csm tunnel *<slot/port>* *<tunnelVpi#>* **vpi** *<vpi#>*

Definitions:

slot/port = specifies the slot/port on which you want to modify the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

vpi# = the new Virtual Path Identifier for the VP tunnel

Examples:

csm tunnel 8/1 1 vpi 2
vpi 2

Corresponding UI Command

dvpt

csm tunnel vpi

Command Usage

Modify the Virtual Path Identifier (VPI) for a specified VP Tunnel on a CSM port.

Syntax Options

```
csm tunnel <slot/port> <tunnelVpi#> vpi <vpi#>
```

Definitions:

slot/port = specifies the slot/port on which you want to modify the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

vpi# = the new Virtual Path Identifier for the VP tunnel

Examples:

```
csm tunnel 8/1 1 vpi 2  
vpi 2
```

Corresponding UI Command

mvpt

csm tunnel interface

Command Usage

Modify the type of ATM interface that a specified VP tunnel supports.

Syntax Options

csm tunnel <slot/port> <tunnelVpi#> interface [type] {Public UNI | Private UNI | PNNI | IISP Network | IISP user}

Definitions:
slot/port = specifies the slot/port on which you want to modify the VP tunnel
tunnelVPI# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.
type = optional command syntax
Public UNI = Public User-to-Network interface type. This virtual path will be used for connections to public ATM service carrier switches, such as those used by Telcos.
Private UNI = Private User-to-Network interface type. The virtual path is used for private UNI uplinks. Such a VP would connect either directly to an ATM workstation, LAN switch, or ATM attached router.
PNNI = Private Network-to-Network interface type. The virtual path will support PNNI version 1.0 ATM routing, which includes support for a single peer group mapping.
IISP Network = Network Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between networks using the IISP protocol.
IISP User = User Interim Interswitch Signaling Protocol. Typically an IISP virtual path would be part of an intermediate ATM node that did not support the PNNI routing protocol. IISP Network is used primarily for establishing static routes between users and a networks using the IISP protocol.

Examples:
csm tunnel 8/1 1 interface type Public UNI
csm tunnel 8/1 1 interface Public UNI
interface Public UNI

Corresponding UI Command

mvpt

Remarks

If your software version is prior to 4.1, then you *must* reboot the switch when you change the interface type from **PNNI 1.0** to **Pub UNI** or **Priv UNI**.

csm tunnel signaling

Command Usage

Modify whether or not you want to enable the Service-Specific-Connection-Oriented-Protocol (SSCOP).

Syntax Options

csm tunnel <slot/port> <tunnelVpi#> signaling {disable | enable}

Definitions:
slot/port = specifies the slot/port on which you want to modify the VP tunnel
tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.
disable = disables signaling on this VP tunnel
enable = enables signaling on this VP tunnel

Examples:
csm tunnel 8/1 1 signaling enable
signaling enable

Corresponding UI Command

mvpt

csm tunnel signaling version

Command Usage

Modify the version of the User-to-Network Interface (UNI) used on this virtual path.

Syntax Options

csm tunnel <slot/port> <tunnelVpi#> signaling version {3.0 | 3.1}

Definitions:

slot/port = specifies the slot/port on which you want to modify the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

3.0 = UNI version 3.0

3.1 = UNI version 3.1

Examples:

csm tunnel 8/1 1 signaling version 3.0

signaling version 3.0

Corresponding UI Command

mvpt

Remarks

If you change your signaling version from 3.0 to 3.1 *and* your software version is prior to 4.1, then you *must* reboot the switch.

csm tunnel ilmi

Command Usage

Modify whether or not you want to enable the Integrated Local Management Interface (ILMI).

Syntax Options

```
csm tunnel <slot/port> <tunnelVpi#> ilmi {disable | enable}
```

Definitions:

slot/port = specifies the slot/port on which you want to modify the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

disable = disables ILMI

enable = enables ILMI

Examples:

```
csm tunnel 8/1 1 ilmi enable
```

```
ilmi enable
```

Corresponding UI Command

mvpt

csm tunnel status

Command Usage

Modify the administrative status for a specified VP tunnel.

Syntax Options

csm tunnel <slot/port> <tunnelVpi#> status {disable | enable}

Definitions:

slot/port = specifies the slot/port on which you want to modify the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

disable = disables the administrative status for this VP tunnel

enable = enables the administrative status for this VP tunnel

Examples:

csm tunnel 8/1 1 status enable

status enable

Corresponding UI Command

mvpt

Remarks

When first configuring your network, you may want to create a VP tunnel and disable it until it is ready for live operation. The VP tunnel will not be available for traffic flow until the status is set to **Enable**.

csm tunnel description

Command Usage

Modify the textual description of a specified VP Tunnel.

Syntax Options

```
csm tunnel <slot/port> <tunnelVpi#> description <string>
```

Definitions:

slot/port = specifies the slot/port on which you want to modify the VP tunnel

tunnelVpi# = specifies the Virtual Path Identifier (VPI) for the VP tunnel you are modifying. If this VPI will be used over a public network, then it should match the VPI assigned by your carrier.

string = the new textual description (up to 30 characters) for this VP Tunnel. Description strings with spaces must be enclosed in quotations (e.g., **"VP Tunnel 2"**)

Examples:

```
csm tunnel 8/1 1 description "VP Tunnel 2"  
description "VP Tunnel 2"
```

Corresponding UI Command

mvpt

no csm spvc

Command Usage

Delete a soft PVC.

Syntax Options

```
no csm spvc <slot/port> <vpi#> <vci#>
```

slot/port = specifies the slot/port of the port for which you want to remove a soft PVC

vpi# = specifies the Virtual Path Identifier for these virtual connections

vci# = specifies the Virtual Channel Identifier for this virtual connection

Examples:

```
no csm spvc 5/1 1 100
```

Corresponding UI Command

dvc

csm spvc outgoing vc

Command Usage

Modify the virtual circuit path on which output traffic is forwarded on a soft PVC.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> outgoing vc <vpi#> <vci#>
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

vpi# = specifies the new VPI on which output traffic is to be forwarded

vci# - specifies the new VCI on which output traffic is to be forwarded

Examples:

```
csm spvc 5/1 2 100 outgoing vc 50 200
```

```
outgoing vc 50 200
```

Corresponding UI Command

scvc

csn spvc channel type**Command Usage**

Modify the type of connection supported by a soft PVC.

Syntax Options

csn spvc *<slot/port>* *<vpi#>* *<vci#>* **channel type** {nni | uni}

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

nni = Network-to-node interface connection

uni = User-to-Network interface connection

Examples:

csn spvc 5/1 2 200 channel type nni

channel type nni

Corresponding UI Command

scvc

csm spvc transport priority

Command Usage

Modify the type of traffic and its priority on a soft PVC.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> transport priority {cbr | cbr prs | vbr rt | vbr nrt | abr | ubr}

Definitions:

- slot/port* = specifies the slot/port of the soft PVC you want to modify
- vpi#* = specifies the Virtual Path Identifier for the virtual connection
- vci#* = specifies the Virtual Channel Identifier for the virtual connection
- cbr** = Continuous Bit Rate
- cbr prs** = Continuous Bit Rate with Primary Reference Source
- vbr rt** = Variable Bit Rate, Real Time
- vbr nrt** = Variable Bit Rate, Non-Real Time
- abr** = Available Bit Rate
- ubr** = Unspecified Bit Rate

Examples:

csm spvc 5/1 2 200 transport priority cbr
transport priority cbr

Corresponding UI Command

scvc

csm spvc point to multipoint**Command Usage**

Modify whether or not to enable multicast, or point-to-point, soft PVCs on a primary virtual circuit.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **point to multipoint** {disable | enable}

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

disable = disables multicast soft PVCs on this primary virtual circuit

enable = enables multicast soft PVCs on this primary virtual circuit

Examples:

csm pvc 5/1 2 200 point to multipoint enable

point to multipoint enable

Corresponding UI Command

scvc

csm spvc aal5 discard status

Command Usage

Modify whether or not to discard AAL5 PDU cells during times of congestion.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> aal5 discard status {disable | enable}
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

disable = disables AAL5 discard

enable = enables AAL5 discard

Switch Default:

disable

Examples:

```
csm spvc 5/1 2 200 aal5 discard status enable
```

```
aal5 discard status enable
```

Corresponding UI Command

scvc

csm spvc no multipoint

Command Usage

Remove multicast circuit from a primary soft PVC.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> no multipoint <endpt#>
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

endpt# = specifies the endpoint ID for this soft PVC. This endpoint ID was entered when the soft PVC was initially configured.

Examples:

```
csm spvc 5/1 2 100 no multipoint 4
```

```
no multipoint 4
```

Corresponding UI Command

scvc

csm spvc multipoint retry limit

Command Usage

Modify the maximum number of consecutive unsuccessful call setup attempts that will be made before stopping any further attempts to set up the connection.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **multipoint** *<endpt#>* **retry limit** *<limit#>*

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

endpt# = specifies the endpoint ID for this soft PVC. This endpoint ID was entered when the soft PVC was initially configured.

limit# = the maximum number (0-65535) of consecutive unsuccessful call setup attempts that will be made before stopping any further attempts to set up the connection.

Examples:

csm spvc 5/1 2 100 multipoint 4 retry limit 0

multipoint 4 retry limit 0

Corresponding UI Command

scvc

Remarks

A value of zero (0) indicates that an infinite number of attempts will be made to establish the connection.

csm spvc multipoint retry threshold

Command Usage

Modify the number of call setup attempts that will be made to establish a soft PVC connection before an alarm is generated.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> multipoint <endpt#> retry threshold <threshold#>
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

endpt# = specifies the endpoint ID for this soft PVC. This endpoint ID was entered when the soft PVC was initially configured.

threshold# = the number of call setup attempts (0-65535) that will be made to establish a soft PVC connection before an alarm is generated.

Examples:

```
csm spvc 5/1 2 100 multipoint 4 retry threshold 1
```

```
multipoint 4 retry threshold 1
```

Corresponding UI Command

scvc

Remarks

After this threshold is reached, an alarm will be generated. A value of zero (0) indicates that an infinite number of retries will be attempted before an alarm is generated.

csn spvc multipoint retry interval

Command Usage

Modify the period to wait, in seconds, before attempting to establish another soft PVC connection after the first failed call attempt.

Syntax Options

csn spvc *<slot/port>* *<vpi#>* *<vci#>* **multipoint** *<endpt#>* **retry interval** *<interval#>*

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

endpt# = specifies the endpoint ID for this soft PVC. This endpoint ID was entered when the soft PVC was initially configured.

interval# = the period to wait, in seconds (between 0 and 3600), before attempting to establish another soft PVC connection after the first failed call attempt.

Examples:

csn spvc 5/1 2 100 multipoint 4 retry interval 10

multipoint 4 retry interval 10

Corresponding UI Command

scvc

Remarks

A value of zero (0) indicates that no retries will be attempted before an alarm is generated.

csm spvc description

Command Usage

Modify the textual description of a soft PVC.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> description <string>
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

string = specifies the textual description (30 characters) of this soft PVC. Description strings with spaces must be enclosed in quotations (e.g., "**Multimedia VC**")

Examples:

```
csm spvc 5/1 2 100 description "Multimedia VC"  
description "Multimedia VC"
```

Corresponding UI Command

scvc

csm spvc bidirectional traffic**Command Usage**

Modify whether you want to use the same traffic parameters for the transmit and receive sides of a specified soft PVC.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> bidirectional traffic {off | on}

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

off = turns off bidirectional traffic.

on = turns on bidirectional traffic (Tx parameters will match the Rx traffic parameters).

Examples:

csm spvc 5/1 2 100 bidirectional traffic on

bidirectional traffic on

Corresponding UI Command

scvc

csm spvc qos class tx

Command Usage

Modify the Quality of Service (QoS) for cells transmitted (from source to destination) on this soft PVC.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> qos class tx {Unspecified | 1 | 2 | 3 | 4}
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

Unspecified = Best Effort for data traffic (UBR)

1 = Class 1. Circuit Emulation, Constant Bit Rate Traffic (CBR)

2 = Class 2. Variable Bit Rate for Audio and Video Traffic (rt-VBR)

3 = Class 3. VBR for Connection-Oriented Protocols Such as Frame Relay (nrt-VBR)

4 = Class 4. Available Bit Rate for Connectionless Data Protocols Such as IP (ABR)

Examples:

```
csm spvc 5/1 2 100 qos class tx 1
```

```
qos class tx 1
```

Corresponding UI Command

scvc

csm spvc best effort tx

Command Usage

Modify whether you want to use the Peak Cell Rate (PCR) setting (specified either through the **csm spvc pcr Clp01 tx** or **csm spvc Clp0 tx** command) to determine the amount of bandwidth allocated or to use all available bandwidth for transmitted cells.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> best effort tx {enable | disable | on | off}

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

enable = enables best effort for transmitted cells

disable = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

on = enables best effort for transmitted cells

off = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

Examples:

csm spvc 5/1 1 300 best effort tx enable

best effort tx enable

Corresponding UI Command

scvc

csm spvc traffic descriptor tx

Command Usage

Modify the traffic descriptor bundle for traffic transmitted from this connection.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> traffic descriptor tx {none | clp | scr | tag | clp scr | clp tag | scr tag | clp scr tag}

Definitions:
slot/port = specifies the slot/port of the soft PVC you want to modify
vpi# = specifies the Virtual Path Identifier for the virtual connection
vci# = specifies the Virtual Channel Identifier for the virtual connection
none = specifies no traffic enforcement imposed
clp = specifies cell loss priority traffic enforcement parameter
scr = specifies sustained cell rate traffic enforcement parameter
tag = specifies tagging traffic enforcement parameter
clp scr = specifies cell loss priority *and* sustained cell rate traffic enforcement parameters
clp tag = specifies cell loss priority *and* tagging traffic enforcement parameters
scr tag = specifies sustained cell rate *and* tagging traffic enforcement parameters
clp scr tag = specifies cell loss priority, sustained cell rate *and* tagging traffic enforcement parameters

Examples:
csm spvc 5/1 2 200 traffic descriptor tx none
csm spvc 5/1 2 200 traffic descriptor tx clp
csm spvc 5/1 2 200 traffic descriptor tx clp tag
traffic descriptor tx scr tag
traffic descriptor tx clp scr tag

Corresponding UI Command

scvc

csm spvc pcr Clp01 tx**Command Usage**

Modify the Peak Cell Rate (PCR), in cells per second, allowed for transmitted traffic on a soft PVC.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **pcr Clp01 tx** *<pcr#>*

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm spvc 5/1 2 200 pcr Clp01 tx 3

pcr Clp01 tx 3

Corresponding UI Command

scvc

csm spvc pcr Clp0 tx

Command Usage

Modify the Peak Cell Rate (PCR), in cells per second, allowed for transmitted traffic on a soft PVC.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> pcr Clp0 tx <pcr#>
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

```
csm spvc 5/1 2 200 pcr Clp0 tx 3
```

```
pcr Clp0 tx 3
```

Corresponding UI Command

scvc

csn spvc scr tx**Command Usage**

Modify the the Sustaining Cell Rate (SCR), in cells per second, allowed for transmitted traffic on a soft PVC.

Syntax Options

csn spvc *<slot/port>* *<vpi#>* *<vci#>* **scr tx** *<scr#>*

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

scr# = the Sustained Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csn spvc 5/1 2 200 scr tx 2

scr tx 2

Corresponding UI Command

scvc

csm spvc maximum burst size tx

Command Usage

Modify the Maximum Burst Size (MBS), in cells, allowed for transmitted traffic on a connection.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> maximum burst size tx <mbs#>
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

mbs# = specifies the maximum burst size, in cells per, allowed for traffic transmitted on this soft PVC

Examples:

```
csm spvc 5/1 2 200 maximum burst size tx 1
```

```
maximum burst size tx 1
```

Corresponding UI Command

scvc

csm spvc qos class rx**Command Usage**

Modify the Quality of Service (QoS) for cells received from the destination at the source on a soft PVC.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **qos class rx** {**Unspecified** | **1** | **2** | **3** | **4**}

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

Unspecified = Best Effort for data traffic (UBR)

1 = Class 1. Circuit Emulation, Constant Bit Rate Traffic (CBR)

2 = Class 2. Variable Bit Rate for Audio and Video Traffic (rt-VBR)

3 = Class 3. VBR for Connection-Oriented Protocols Such as Frame Relay (nrt-VBR)

4 = Class 4. Available Bit Rate for Connectionless Data Protocols Such as IP (ABR)

Examples:

csm spvc 5/1 2 100 qos class rx 1

qos class rx 1

Corresponding UI Command

scvc

csm spvc best effort rx

Command Usage

Modify whether you want to use the Peak Cell Rate (PCR) setting (specified either through the **csm spvc pcr Clp01 rx** or **csm spvc Clp0 rx** command) to determine the amount of bandwidth allocated or to use all available bandwidth for transmitted cells.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> best effort rx {enable | disable | on | off}
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

enable = enables best effort for transmitted cells

disable = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

on = enables best effort for transmitted cells

off = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells

Examples:

```
csm spvc 5/1 best effort rx enable
```

```
best effort rx enable
```

Corresponding UI Command

scvc

csm spvc traffic descriptor rx

Command Usage

Modify the traffic descriptor bundle for traffic received at this connection.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **traffic descriptor rx** {none | clp | scr | tag | clp scr | clp tag | scr tag | clp scr tag}

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

none = specifies no traffic enforcement imposed

clp = specifies cell loss priority traffic enforcement parameter

scr = specifies sustained cell rate traffic enforcement parameter

tag = specifies tagging traffic enforcement parameter

clp scr = specifies cell loss priority *and* sustained cell rate traffic enforcement parameters

clp tag = specifies cell loss priority *and* tagging traffic enforcement parameters

scr tag = specifies sustained cell rate *and* tagging traffic enforcement parameters

clp scr tag = specifies cell loss priority, sustained cell rate *and* tagging traffic enforcement parameters

Examples:

csm spvc 5/1 2 200 traffic descriptor rx none

csm spvc 5/1 2 200 traffic descriptor rx clp

csm spvc traffic descriptor rx clp scr

traffic descriptor rx scr tag

traffic descriptor rx clp scr tag

Corresponding UI Command

scvc

csm spvc pcr Clp01 rx

Command Usage

Modify the Peak Cell Rate (PCR), in cells per second, allowed for traffic received on a soft PVC.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> pcr Clp01 rx <pcr#>
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = specifies the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

```
csm spvc 5/1 2 200 pcr CLP01 tx 3
```

```
pcr Clp01 tx 3
```

Corresponding UI Command

scvc

csm spvc pcr Clp0 rx**Command Usage**

Modify the Peak Cell Rate (PCR), in cells per second, allowed for traffic received on a soft PVC.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **pcr Clp0 rx** *<pcr#>*

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm spvc 5/1 2 200 pcr CLP0 rx 3

pcr Clp0 rx 3

Corresponding UI Command

scvc

csn spvc scr rx

Command Usage

Modify the the Sustaining Cell Rate (SCR), in cells per second, allowed for traffic received on a soft PVC.

Syntax Options

```
csn spvc <slot/port> <vpi#> <vci#> scr rx <scr#>
```

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

scr# = the Sustained Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

```
csn spvc 5/1 2 200 scr rx 2
```

```
scr rx 2
```

Corresponding UI Command

scvc

csm spvc maximum burst size rx**Command Usage**

Modify the Maximum Burst Size (MBS), in cells, allowed for transmitted traffic on a soft PVC.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> maximum burst size rx <mbs#>

Definitions:

slot/port = specifies the slot/port of the soft PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

mbs# = the Maximum Burst Size (in cells) allowed on this virtual circuit

Examples:

csm spvc 5/1 2 200 maximum burst size rx 1

maximum burst size rx 1

Corresponding UI Command

scvc

csm spvc user priority

Command Usage

Modify the priority level assigned to a soft PVC.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **user priority** *<priority#>*

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

priority = specifies User priority level (must be a value between 0 and 15)

Examples:

csm spvc 5/1 2 200 user priority level 4

user priority level 4

Corresponding UI Command

scvc

Remarks

This priority is used to decide which virtual circuit's traffic is discarded first in a situation where congestion occurs. The priority level for a virtual circuit can range from 0 to 15, with 0 being the highest priority and 15 being the lowest. The following defaults are supplied for each traffic type:

Traffic Type and Priority

| Traffic Type | Default Priority Level |
|--------------|------------------------|
| CBR | 4 |
| VBR | 8 |
| ABR | 8 |
| UBR | 15 |

csn spvc cell delay variation

Command Usage

Modify the Cell Delay Variation (CDV), or “jitter,” in mircoseconds.

Syntax Options

csn spvc <slot/port> <vpi#> <vci#> cell delay variation <cdv#>

Definitions:

slot/port = specifies the slot/port of the PVC you want to modify

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

cdv# = specifies the cell delay variation in microseconds (must be a value between 10 and 10000)

Examples:

csn spvc 5/1 2 200 cell delay variation 10000

cell delay variation 10000

Corresponding UI Command

scvc

Command Usage

csm spvc retry limit

Command Usage

Modify the maximum number of consecutive unsuccessful call setup attempts that will be made before stopping any further attempts to set up the connection.

Syntax Options

```
csm spvc <slot/port> <vpi#> <vci#> retry limit <limit#>
```

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

limit# = the maximum number (0-65535) of consecutive unsuccessful call setup attempts that will be made before stopping any further attempts to set up the connection

Examples:

```
csm spvc 5/1 2 100 retry limit 0
```

```
retry limit 0
```

Corresponding UI Command

scvc

Remarks

A value of zero (0) indicates that an infinite number of attempts will be made to establish the connection.

csm spvc retry threshold**Command Usage**

Modify the number of call setup attempts that will be made to establish a soft PVC connection before an alarm is generated.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> retry threshold <val>

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

val = the number of call setup attempts (0-65535) that will be made to establish a soft PVC connection before an alarm is generated

Examples:

csm spvc 5/1 2 100 retry threshold 1

retry threshold 1

Corresponding UI Command

scvc

Remarks

A value of zero (0) indicates that an infinite number of retries will be attempted before an alarm is generated.

csm spvc retry interval

Command Usage

Modify the period to wait, in seconds, before attempting to establish another soft PVC connection after the first failed call attempt.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **retry interval** *<interval#>*

Definitions:
slot/port = specifies the slot/port of the port for which you want to modify a soft PVC
vpi# = specifies the Virtual Path Identifier for the virtual connection
vci# = specifies the Virtual Channel Identifier for the virtual connection
interval# = the period to wait, in seconds (between 0 and 3600), before attempting to establish another soft PVC connection after the first failed call attempt

Examples:
csm spvc 5/1 2 100 4 retry interval 10
multipoint 4 retry interval 10

Corresponding UI Command

scvc

Remarks

An interval value of zero (0) indicates that no retries will be attempted.

csm spvc Broadband Bearer traffic**Command Usage**

Modify the broadband traffic type for a soft PVC connection.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> Broadband Bearer traffic {no indication | cbr | vbr}

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

no indication = no traffic type

cbr = Constant Bit Rate traffic

vbr = Variable Bit Rate traffic

Examples:

csm spvc 5/1 2 100 Broadband Bearer traffic cbr

Broadband Bearer traffic cbr

Corresponding UI Command

scvc

csm spvc Broadband Bearer timing

Command Usage

Modify whether end-to-end timing over the broadband link is required.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> Broadband Bearer timing [requirement] {no indication | end to end | no end to end}

Definitions:
slot/port = specifies the slot/port of the port for which you want to modify a soft PVC
vpi# = specifies the Virtual Path Identifier for the virtual connection
vci# = specifies the Virtual Channel Identifier for the virtual connection
requirement = optional command syntax
no indication = no indication specified
end to end = end-to-end timing required
no end to end = no end-to-end timing required

Examples:
csm spvc 5/1 2 100 Broadband Bearer timing requirement end to end
csm spvc 5/1 2 100 Broadband Bearer timing end to end
Broadband Bearer timing end to end

Corresponding UI Command

scvc

csm spvc Broadband Bearer clipping**Command Usage**

Modify whether or not cells on this link can be discarded under congestion conditions.

Syntax Options

csm spvc <slot/port> <vpi#> <vci#> Broadband Bearer clipping [susceptibility] {on | off}

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

susceptibility = optional command syntax

on = enables susceptibility to clipping. Cells discarded under congestion conditions.

off = disables susceptibility to clipping. Cells not discarded under congestion conditions.

Examples:

csm spvc 5/1 2 100 Broadband Bearer clipping susceptibility on

csm spvc 5/1 2 100 Broadband Bearer clipping on

Broadband Bearer clipping on

Corresponding UI Command

scvc

csm spvc Broadband Bearer user plane connection

Command Usage

Modify whether this soft PVC is a standard point-to-point connection or whether it is a point-to-multipoint connection.

Syntax Options

csm spvc *<slot/port>* *<vpi#>* *<vci#>* **Broadband Bearer user plane connection** {point to point | point to multipoint}

Definitions:

slot/port = specifies the slot/port of the port for which you want to modify a soft PVC

vpi# = specifies the Virtual Path Identifier for the virtual connection

vci# = specifies the Virtual Channel Identifier for the virtual connection

point to point = configures this soft PVC to be a point-to-point connection

point to multipoint = configures this soft PVC to be a point-to-multipoint connection

Examples:

csm spvc 5/1 2 100 Broadband Bearer user plane connection point to point
Broadband Bearer user plane connection point to point

Corresponding UI Command

scvc

CSM View Commands

view csm spvc

Command Usage

View information on all soft PVC connections in a switch, on a single CSM board, on a single CSM port, or on a virtual path.

Syntax Options

view csm spvc [*slot/port*] [*vpi#*] [*vci#*]

Definitions:
slot = specifies the slot of the board for which you want to view soft PVC information
slot/port = specifies the slot/port of the port for which you want to view soft PVC information
vpi# = specifies the Virtual Path Identifier for the virtual path for which you want to view soft PVC information
vci# = specifies the Virtual Channel Identifier for the soft PVC connection you want to view

Examples:
view csm spvc
view csm spvc 5
view csm spvc 5/1
view csm spvc 5/1 1
view csm spvc 5/1 1 1

Corresponding UI Command

svvc

Screen Output

A screen similar to the following will be displayed:

CSM Connections

[illegible]

| Slot | Port | VPI | VCI | EndPt Id | Release Cause | Oper Status | Release Diagnostic |
|------|------|-----|-----|-------------|------------------|----------------|-----------------------|
| 5 | 5 | 1 | 1 | 1 | 0 | Other | 00000000 |
| | | | | 2 | 0 | Other | 00000000 |
| | | | | 33 | 0 | Other | 00000000 |
| | | | | 44 | 0 | Other | 00000000 |

Retry Information

| Slot | Port | VPI | VCI | EndPt Id | Retry Intvl | Retry Timer | Retry T'hold | Retry Failures | Retry Limit |
|------|------|-----|-----|-------------|----------------|----------------|-----------------|-------------------|----------------|
| 5 | 5 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 0 |
| | | | | 2 | 2200 | 0 | 2300 | 0 | 25 |
| | | | | 33 | 25 | 0 | 25 | 0 | 25 |
| | | | | 44 | 24 | 0 | 24 | 0 | 24 |

Broadband Bearer Capability Parameters

| Slot | Port | VPI | VCI | Class | Traffic Type | Timing Requirement | Suscept To Clip | User Plane Config |
|------|------|-----|-----|-------|--------------|--------------------|-----------------|-------------------|
| 5 | 5 | 1 | 1 | C | noIndication | noIndication | True | pt2pt |

| Slot | Port | VPI | VCI | User | | Pri. | Statistics Mode |
|------|------|-----|-----|---------------------|---------------------|------|-----------------|
| | | | | Up Time | Down Time | | |
| 5 | 5 | 1 | 1 | MON FEB 03 13:30:08 | MON FEB 03 13:30:08 | 15 | CntGcra.PsCell |

— Output continues on next page —

| Tx Traffic Information | | | | | | | | | |
|------------------------|-------|-------|-------|----------------------------|-------------------|----------------------|------------------------|-----------|----------------|
| Slot | Port | VPI | VCI | Tx Traffic Descrip Type | Peak Cell Rate | Sustain Cell Rate | Maximum Tx Burst Sz | Tx QoS | Best Effort |
| ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| 5 | 5 | 1 | 1 | NoCLP NoSCR | 1 | | | Uns | True |

| Rx Traffic Information | | | | | | | | | |
|------------------------|-------|-------|-------|----------------------------|-------------------|----------------------|------------------------|-----------|----------------|
| Slot | Port | VPI | VCI | Rx Traffic Descrip Type | Peak Cell Rate | Sustain Cell Rate | Maximum Rx Burst Sz | Rx QoS | Best Effort |
| ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| 5 | 5 | 1 | 1 | NoCLP NoSCR | 1 | | | Uns | True |

| Multicast | | | | | | | | | |
|-----------|-------|-------|-------|-----------------|-----------------|--------|---------|-------------|-------|
| Slot | Port | VPI | VCI | gcra a enf mode | gcra benf mode | grp id | enable | ingrs/egrss | |
| ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| 5 | 5 | 1 | 1 | no cong dx clp1 | no cong dx clp1 | 0 | disable | ingress | |

Table Description

Incoming Port. The port number on which input traffic is sent along the virtual circuit path.

Outgoing Port. The port number on which output traffic is forwarded along the virtual circuit path.

Connection Description. A textual description of this virtual circuit.

Chan Type. The type of connection supported by this channel. Normally, this circuit will connect to a user device, such as an ATM workstation, or to another network switch, such as an OmniSwitch. When connected directly to a user device, this connection would be considered a UNI connection. When connected to another ATM switch, this connection would be considered an NNI connection.

Transport Priority. Indicates the type of traffic and its priority on this connection. Some traffic types require higher priority than others because any disruption in the connection will cause unacceptable results. For example, a circuit emulating a private digital line requires a continuous flow of traffic. Circuit emulation requires Continuous Bit Rate (CBR) transport and is given a higher priority than other less sensitive traffic. On the other hand, data connections can tolerate some delay in the connection. Data traffic usually requires Available Bit Rate (ABR) transport.

EndPt Id. An identification number used to keep track of the endpoints within a single soft PVC. This number is used for identification purposes only and does not affect VPI/VCI numbering.

Terminating Atm Address. The ATM address of the output port of the ATM switch at the other end of this soft PVC.

Other End Vpi. The Virtual Path Identifier (VPI) used for this circuit on the ATM switch at the other end of this soft PVC connection. The **Other End VPI** is the VPI used at the destination end of this soft PVC. This field will not display if the **Target Selector Type** field is set to **Any**.

Other End Vci. The Virtual Channel Identifier (VCI) used for this circuit on the ATM switch at the other end of this soft PVC connection. The **Other End VCI** is the VCI used at the destination end of this soft PVC. This field will not display if you are not setting up a Virtual Channel Connection (VCC) or if the **Target Selector Type** field is set to **Any**.

Release Cause. Indicates an internal code that gives information on why this connection was released.

Oper Status. Indicates the current operational status of this soft PVC.

Release Diagnostic. Indicates an internal diagnostic code used for releasing this connection.

Retry Intvl. The period to wait, in seconds, before attempting to establish another soft PVC connection after the first failed call attempt. A value of zero (0) indicates that no retries will be attempted.

Retry T'hold. Indicates the number of call setup attempts that will be made to establish a soft PVC connection before an alarm is generated. After this threshold is reached an alarm will be generated. A value of zero (0) indicates that an infinite number of retries will be attempted before an alarm is generated.

Retry Limit. The maximum number of consecutive unsuccessful call setup attempts that will be made before stopping any further attempts to set up the connection. A value of zero (0) indicates that an infinite number of attempts will be made to establish the connection.

Retry Timer. The current value, in seconds, for the the retry timer on this soft PVC connection.

Retry Failures. The total number of retry failures experienced on this connection.

Traffic Type. The broadband bearer traffic type.

Timing Requirement. Indicates whether end-to-end timing over the broadband link is necessary. End-to-end timing for traffic types sensitive to transit delay, such as CBR traffic, typically require end-to-end timing.

Suscept To Clip. Indicates whether or not cells on this link can be discarded under congestion conditions.

User Plane Config. Indicates whether this soft PVC is a standard point-to-point connection or whether it is a point-to-multipoint connection.

User Pri.. The priority level assigned to this virtual circuit. This priority is used to decide which virtual circuit's traffic is discarded first in a situation where congestion occurs. The priority level for a virtual circuit can range from 0 to 15, with 0 being the highest priority and 15 being the lowest. The following defaults are supplied for each traffic type:

Traffic Type and Priority

| Traffic Type | Default Priority Level |
|--------------|------------------------|
| CBR | 4 |
| VBR | 8 |
| ABR | 8 |
| UBR | 15 |

Statistics Mode.

Tx Traffic Descriptor Type. The traffic descriptor used for traffic transmitted on this connection. If you selected **enable** or **on** through the **atm connection best effort requested** command, then the PCR will not be used to determine traffic flow, and traffic will be transmitted on a best effort basis.

Peak Cell Rate (Tx and Rx). The Peak Cell Rate (PCR), in cells per second, allowed for traffic transmitted or received on this VCC. The PCR is the fastest cell rate allowed on the connection. When using Peak Cell Rate, the bandwidth of an ATM uplink port can be partitioned among multiple connections each with a dedicated bandwidth. The ATM driver calculates the

best rate nearest to the requested rate that the ATM hardware can support. The CLP=0+1 in this field means that both high priority (CLP=0) and low priority (CLP=1) cells are checked for PCR.

Sustain Cell Rate (Tx and Rx). The Sustaining Cell Rate (SCR), in cells per second, allowed for traffic transmitted or received on this VCC. The SCR is highest average cell rate allowed on the circuit. The switch will use the parameter as part of the traffic contract for this virtual circuit. An average cell rate above the rate you indicate here will denote a violation of the traffic contract and the leaky bucket algorithm will determine which enforcement action to take. Note that the SCR will be enforced on CLP=0+1 or CLP=0 cell flows; this prompt indicates which cell flow is checked.

Maximum Burst Size (Tx and Rx). The Maximum Burst Size (MBS), in cells, allowed for traffic transmitted or received on this VCC. The MBS is the largest single burst of cells allowed on the connection. The switch will use this parameter as part of the traffic contract for this virtual circuit. A burst size above the value you indicate here will denote a violation of the traffic contract and the leaky bucket algorithm will determine which enforcement action to take. Note that the MBS will be enforced on CLP=0+1 or CLP=0 cell flows; this prompt indicates which cell flow is checked.

Tx QoS Class. The Quality of Service (QoS) for cells transmitted (from source to destination) on this virtual circuit. For ATM uplink connections to an ATM switch only the Unspecified QoS is supported. This QoS transmits data on a best effort basis; bandwidth is not guaranteed, but as much data as possible will be transmitted as long as bandwidth is available.

Tx Best Effort. Indicates whether this port transmits traffic on a “best effort” basis or uses a Peak Cell Rate (PCR) parameter to transmit traffic. If the value in this field is **True**, then the port transmits traffic if any bandwidth is available on the port. If the value in this field is **False**, then the Peak Cell Rate (PCR) parameter is used to transmit traffic on this VCC. If data cannot be sent at the PCR specified, then no data will be sent on the VCC.

RX Traffic Descriptor. The traffic descriptor used for traffic received on this connection. If you selected **enable** or **on** through the **atm connection best effort requested** command, then the PCR will not be used to determine traffic flow, and traffic will be received on a best effort basis.

Requested Rx QoS Class. The Quality of Service (QoS) for cells received (from destination to source) on this virtual circuit. For ATM uplink connections to an ATM switch only the **Unspecified** QoS is supported. This QoS receives data on a best effort basis; bandwidth is not guaranteed, but as much data as possible will be received as long as bandwidth is available.

Rx Best Effort. Indicates whether this port receives traffic on a “best effort” basis or uses a Peak Cell Rate (PCR) parameter to receive traffic. If the value in this field is **True**, then the port receives traffic if any bandwidth is available on the port. If the value in this field is **False**, then the PCR parameter will be used. If data cannot be received at the PCR specified, then this VCC will not be operational.

gcra a mode, gcra b mode. The type of algorithm used for the Generic Cell Rate Algorithm (GCRA), or “leaky bucket,” with this virtual circuit. By default, this column will read **no congestion clp1**, meaning that only CLP=1 cells will be discarded.

Multicast grp id. The group identification number for this multicast virtual circuit. This number is not user-configurable and is used internally by the switch.

Multicast enable. Indicates whether multicast leaf virtual circuits are associated with this root virtual circuit.

Multicast ingress/egress. Indicates whether this is the ingress or egress point for this multicast virtual circuit.

view csm tunnel**Command Usage**

View virtual path tunnels on a specified CSM port.

Syntax Options

```
view csm tunnel [slot/port]
```

Definitions:

slot/port = specifies the slot/port of the port for the virtual path tunnel you want to view

Examples:

```
view csm tunnel 8/1
```

Corresponding UI Command

lvpt

Screen Output

A screen similar to the following will be displayed:

```

                                CSM VP Tunnel(s)
Index  Slot  Port  Inst  VP Tunnel Descriptor  VP Tun  VPI  Type
=====  =====  =====  =====  =====  =====  =====  =====
      1     8     1     1     test                      1       1    PNNI

                                Status
Index  Slot  Port  Inst  Abs  Oper  SSCOP  ILMI  Enable  Enable  Admin
=====  =====  =====  =====  Port  =====  =====  =====  =====  =====  =====
      1     8     1     1    701  Disabl Down  Down  Disabl  Enable  Enable

                                Status
                                =====
Slt  Prt  Inst  Sscop Up          Sscop Down          Up  Dn  Status
=====  =====  =====  =====  =====  =====  =====  =====  =====
  8    1    1  TUE FEB 23 15:34:41 1999  WED FEB 24 11:42:47 1999  4   5  Down

Slt  Prt  Inst  Ilmi Up          Ilmi Down          Up  Dn  Status
=====  =====  =====  =====  =====  =====  =====  =====  =====
  8    1    1  TUE FEB 23 15:34:29 1999  WED FEB 24 11:42:47 1999  5   1  Down

Slt  Prt  Inst  Phy Up          Phy Down          Up  Dn  Status
=====  =====  =====  =====  =====  =====  =====  =====  =====
  8    1    1  TUE FEB 24 11:45:21 1999  WED FEB 24 11:42:47 1999  2   2  En

```

Table Description

Index. This value is a running total, or counter, of all VP tunnels set up in the switch. It is not related to the VPI value. You can use this value to help interpret displays.

Slot. The slot within the switch where this VP tunnel is set up.

Port. The port on the CSM module where this VP tunnel is set up.

Inst. The instance of this VP tunnel on this particular CSM module port. This value is not the same as the VPI. It is a counter of the number of VP tunnels set up on this CSM port. The physical CSM port has an instance of zero (0).

VP Tunnel Descriptor. The textual description of this VP tunnel.

VP Tun Number. This value is a number assigned by switch software to keep track of VP tunnels. It is not the same as the VPI and is used internally.

VPI. The Virtual Path Identifier (VPI) assigned to this VP tunnel. The VPI identifies a discrete path through the ATM network. Multiple virtual paths can be set up on the same CSM port; the VPI is used to identify each path on a CSM port.

Type. Specifies the type of ATM interface that this VP tunnel supports. Possible types are **PNNI**, **PrUNI** (Private UNI), **PuUNI** (Public UNI), and **IISP** (Interim Interswitch Signalling Protocol). Definitions for each of these types are provided in the command section, *csn tunnel* on page 14-42.

Abs Port. An internal port assignment used by PNNI software to identify specific VP tunnels.

ILMI Enable. Indicates whether the Integrated Local Management Interface (ILMI) has been enabled on this virtual path.

Enable SSCOP. Indicates whether the Service-Specific Connection Oriented Protocol (SSCOP) has been administratively enabled.

Admin Status. Indicates whether this VP tunnel was administratively enabled or disabled. The VP tunnel can not become operational until the **Admin Status** has been set to **Enable**.

The following column headings fall under the table heading labeled **Status**.

SSCOP. The current operational state of the Service-Specific Connection Oriented Protocol (SSCOP). SSCOP operates on the ATM control plane and is a peer-to-peer protocol that helps set up connections, detect errors in connections, and correct connection errors. The **Sscop Up** and **Sscop Down** columns will indicate the last time SSCOP last came up and went down, respectively. The **Up** and **Down** columns will indicate the number of times SSCOP came up and went down, respectively. The SSCOP **Status** column will indicate Up or Down.

ILMI. The current operational state of the Integrated Local Management Interface (ILMI), which is a standard ATM management protocol based on SNMP. By default, ILMI uses VPI 0 and VCI 16 for management signalling. The **Ilmi Up** and **Ilmi Down** columns will indicate the last time ILMI last came up and went down, respectively. The **Up** and **Down** columns will indicate the number of times ILMI came up and went down, respectively. The ILMI **Status** column will indicate Up or Down.

PHY. The Operational Status of this virtual path. This column indicates if the virtual path is **Enabled** or **Disabled**. The **Phy Up** and **Phy Down** columns will indicate the last time PHY last came up and went down, respectively. The **Up** and **Down** columns will indicate the number of times PHY came up and went down, respectively. The PHY **Status** column will indicate whether the port is **Enabled** or **Disabled**. The virtual path is enabled if the connection is good on this end and the far end. If there is a disconnection at either end, the operational status will be **Disabled**.

CSM Profile Commands

A CSM profile is used to create a template for multiple CSM connections. While the UI requires that you individually configure each connection—even those with the same parameter values—the CLI's profile feature allows you to create and store aggregate connection information.

Any CSM connection associated with a profile can still be configured on an individual basis.

When a profile is first created, it contains default values for all parameters. Subsequent commands can be used to modify the content of a profile. Modifying a profile that has already been used to create ATM connections will not automatically modify associated connections if the **profile mode** is set to **manual**.

csm profile description

Command Usage

Create a CSM profile.

Syntax Options

csm profile <*description*>

Definitions:
description = specifies the textual description (up to 30 characters) for this CSM profile. Description strings with spaces must be enclosed in quotations (e.g., **"Audio traffic"**)

Examples:
csm profile "Audio traffic"

csm profile bidirectional traffic**Command Usage**

Modify whether you want to use the same traffic parameters for the transmit and receive sides of a CSM profile.

Syntax Options

csm profile <*description*> bidirectional traffic {off | on}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

off = turns off bidirectional traffic.

on = turns on bidirectional traffic (Tx parameters will match the Rx traffic parameters).

Examples:

csm profile "Audio traffic" bidirectional traffic on
bidirectional traffic off

csm profile qos class tx

Command Usage

Modify the Quality of Service (QoS) for cells transmitted (from source to destination) on this VPI or VPI/VCI.

Syntax Options

csm profile <description> qos class tx {Unspecified | 1 | 2 | 3 | 4}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

Unspecified = Best Effort for data traffic (UBR)

1 = Class 1. QoS Class 1. Circuit Emulation, Constant Bit Rate Traffic (CBR)

2 = Class 2. Variable Bit Rate for Audio and Video Traffic (rt-VBR)

3 = Class 3. VBR for Connection-Oriented Protocols Such as Frame Relay (nrt-VBR)

4 = Class 1. Available Bit Rate for Connectionless Data Protocols Such as IP (ABR)

Examples:

csm profile "Audio traffic" qos class tx 1

qos class tx 1

csm profile best effort tx**Command Usage**

Modify whether you want to use the Peak Cell Rate (PCR) setting (specified through either the **csm pvc pcr Clp01 tx on** page 14-24 or the **csm pvc Clp0 tx** command on page 14-25) to determine the amount of bandwidth allocated or to use all available bandwidth for transmitted cells.

Syntax Options

csm profile <*description*> best effort tx {enable | disable | on | off}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

enable = enables best effort for transmitted cells

disable = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

on = enables best effort for transmitted cells

off = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

Examples:

csm profile "Audio traffic" best effort tx enable
best effort tx enable

csm profile traffic descriptor tx

Command Usage

Modify the traffic descriptor bundle for traffic transmitted from a connection.

Syntax Options

csm profile <description> traffic descriptor tx {none | clp | scr | tag | clp scr | clp tag | scr tag | clp scr tag}

Definitions:
description = specifies the textual description (up to 30 characters) for this CSM profile
none = specifies no traffic enforcement imposed
clp = specifies cell loss priority traffic enforcement parameter
scr = specifies sustained cell rate traffic enforcement parameter
tag = specifies tagging traffic enforcement parameter
clp scr = specifies cell loss priority *and* sustained cell rate traffic enforcement parameters
clp tag = specifies cell loss priority *and* tagging traffic enforcement parameters
scr tag = specifies sustained cell rate *and* tagging traffic enforcement parameters
clp scr tag = specifies cell loss priority, sustained cell rate *and* tagging traffic enforcement parameters

Examples:
csm profile “Audio traffic” traffic descriptor tx none
traffic descriptor tx clp scr

csm profile pcr Clp01 tx**Command Usage**

Modify the Peak Cell Rate (PCR), in cells per second, allowed for transmitted traffic on a connection.

Syntax Options

csm profile <*description*> pcr Clp01 tx <*pcr#*>

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

pcr# = the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm profile "Audio traffic" pcr Clp01 tx 10000

pcr Clp01 tx 10000

csm profile pcr Clp0 tx

Command Usage

Modify the Peak Cell Rate (PCR), in cells per second, allowed for transmitted traffic on a specified CSM profile.

Syntax Options

| |
|---|
| csm profile <<i>description</i>> pcr Clp0 tx <<i>pcr#</i>> |
| <p><u>Definitions:</u> <i>description</i> = specifies the textual description (up to 30 characters) for this CSM profile <i>pcr#</i> = the Peak Cell Rate (in cells per second) allowed on this virtual circuit</p> <p><u>Examples:</u> csm profile "Audio traffic" pcr Clp0 tx 10000 pcr Clp0 tx 10000</p> |

csm profile qos class rx**Command Usage**

Modify the Quality of Service (QoS) for cells received from the destination at the source on this CSM profile.

Syntax Options

csm profile <*description*> **qos class rx** {**Unspecified** | **1** | **2** | **3** | **4**}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

Unspecified = Best Effort for data traffic (UBR)

1 = Class 1. QoS Class 1. Circuit Emulation, Constant Bit Rate Traffic (CBR)

2 = Class 2. Variable Bit Rate for Audio and Video Traffic (rt-VBR)

3 = Class 3. VBR for Connection-Oriented Protocols Such as Frame Relay (nrt-VBR)

4 = Class 4. Available Bit Rate for Connectionless Data Protocols Such as IP (ABR)

Examples:

csm profile "Audio traffic" qos class rx 1

qos class rx 1

csm profile best effort rx

Command Usage

Modify the traffic descriptor bundle for traffic received at this connection.

Syntax Options

csm profile <*description*> best effort rx {enable | disable | on | off}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

enable = enables best effort for transmitted cells

disable = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

on = enables best effort for transmitted cells

off = disables best effort for transmitted cells. The PCR setting will determine the amount of bandwidth to be used for transmitted cells.

Examples:

csm profile "Audio traffic" best effort rx enable

best effort rx enable

csm profile traffic descriptor rx**Command Usage**

Modify the traffic descriptor bundle to be used with the Class of Service you selected through the **csm pvc qos class rx** command on page 14-28.

Syntax Options

csm profile <*description*> traffic descriptor rx {none | clp | scr | tag | clp scr | clp tag | scr tag | clp scr tag}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

none = specifies no traffic enforcement imposed

clp = specifies cell loss priority traffic enforcement parameter

scr = specifies sustained cell rate traffic enforcement parameter

tag = specifies tagging traffic enforcement parameter

clp scr = specifies cell loss priority *and* sustained cell rate traffic enforcement parameters

clp tag = specifies cell loss priority *and* tagging traffic enforcement parameters

scr tag = specifies sustained cell rate *and* tagging traffic enforcement parameters

clp scr tag = specifies cell loss priority, sustained cell rate *and* tagging traffic enforcement parameters

Examples:

csm profile "Audio traffic" traffic descriptor rx none

csm profile "Audio traffic" traffic descriptor rx clp

traffic descriptor rx clp scr tag

csm profile Clp01 rx

Command Usage

Modify the Peak Cell Rate (PCR), in cells per second, allowed for traffic received on a CSM profile.

Syntax Options

csm profile <*description*> pcr Clp01 rx <*pcr#*>

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

pcr# = specifies the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm profile "Audio traffic" pcr Clp01 rx 10000

pcr Clp01 rx 10000

csm profile Clp0 rx**Command Usage**

Modify the Peak Cell Rate (PCR), in cells per second, allowed for traffic received on a CSM profile.

Syntax Options

csm profile <*description*> pcr Clp0 rx <*pcr#*>

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

pcr# = specifies the Peak Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm profile "Audio traffic" pcr Clp0 rx 10000

pcr Clp0 rx 10000

csm profile transport priority

Command Usage

Modify the type of traffic and its priority on this connection.

Syntax Options

csm profile <description> transport priority {cbr | cbr prs | vbr rt | vbr nrt | abr | ubr}

Definitions:
description = specifies the textual description (up to 30 characters) for this CSM profile
cbr = Continuous Bit Rate
cbr prs = Continuous Bit Rate with Primary Reference Source
vbr rt = Variable Bit Rate, Real Time
vbr nrt = Variable Bit Rate, Non-Real Time
abr = Available Bit Rate
ubr = Unspecified Bit Rate

Examples:
csm profile “Audio traffic” transport priority cbr
transport priority cbr

csm profile user priority**Command Usage**

Modify the priority level assigned to an CSM profile.

Syntax Options

csm profile <*description*> **user priority** <*priority#*>

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

priority = specifies user priority level (value must be between 0 and 15)

Examples:

csm profile "Audio traffic" **user priority** 4
user priority 4

Remarks

This priority is used to decide which virtual circuit's traffic is discarded first in a situation where congestion occurs. The priority level for a virtual circuit can range from 0 to 15, with 0 being the highest priority and 15 being the lowest. The following defaults are supplied for each traffic type:

Traffic Type and Priority

| Traffic Type | Default Priority Level |
|---------------------|-------------------------------|
| CBR | 4 |
| VBR | 8 |
| ABR | 8 |
| UBR | 15 |

csm profile cell delay variation

Command Usage

Modify the Cell Delay Variation (CDV), or “jitter,” in mircoseconds for a CSM profile.

Syntax Options

csm profile *<description>* cell delay variation *<cdv#>*

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

cdv# = specifies the cell delay variation in microseconds (value must be between 10 and 10000)

Examples:

csm profile “Audio traffic” cell delay variation 1000

cell delay variation 1000

csm profile scr rx**Command Usage****Command Usage**

Modify the the Sustaining Cell Rate (SCR), in cells per second, allowed for traffic received on a connection.

Syntax Options

csm profile *<description>* **scr rx** *<scr#>*

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

scr# = specifies the Sustained Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm profile "Audio traffic" **scr rx 2**

scr rx 2

csm profile maximum burst size rx

Command Usage

Modify the Maximum Burst Size (MBS), in cells, allowed for traffic received on a specified virtual circuit.

Syntax Options

csm profile <description> maximum burst size rx <mbs#>

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

mbs# = the Maximum Burst Size (in cells) allowed for traffic received on this virtual circuit

Examples:

csm profile "Audio traffic" maximum burst size rx 1

maximum burst size rx 1

csm profile scr tx**Command Usage**

Modify the the Sustaining Cell Rate (SCR), in cells per second, allowed for transmitted traffic on a connection.

Syntax Options

csm profile *<description>* **scr tx** *<scr#>*

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

scr# = specifies the Sustained Cell Rate (in cells per second) allowed on this virtual circuit

Examples:

csm profile "Audio traffic" **scr tx** 2

scr tx 2

csm profile maximum burst size tx

Command Usage

Modify the Maximum Burst Size (MBS), in cells, allowed for transmitted traffic on a connection.

Syntax Options

csm profile <*description*> maximum burst size tx <*mbs#*>

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile
mbs# = specifies the MBS, in cells per second, acceptable for traffic received on this VCC

Examples:

csm profile "Audio traffic" maximum burst size tx 1
maximum burst size tx 1

no csm profile**Command Usage**

Remove an CSM profile.

Syntax Options

no csm profile <*description*>

Definitions:

description = specifies the textual description (up to 30 characters) of the CSM profile you want to remove

Examples:

no csm profile "Audio traffic"

◆ Important Note ◆

A CSM profile cannot be deleted if there are existing connections associated with the profile.

csm profile update

Command Usage

Modify the update profile mode for a specified CSM profile.

Syntax Options

csm profile <*description*> update {manual | automatic}

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

manual = connections will not be updated when an associated profile is modified

automatic = automatically updates all connections associated with a modified CSM profile

Examples:

csm profile "Audio traffic" update manual

update automatic

csm profile apply**Command Usage**

Modify the trigger profile updates to be applied to services.

Syntax Options

csm profile *<description>* apply

Definitions:

description = specifies the textual description (up to 30 characters) for this CSM profile

Examples:

**csm profile "Audio traffic" apply
apply**

view csm profile

Command Usage

View all CSM profiles or a specific CSM profile.

Syntax Options

view csm profile [*description*]

Definitions:

description = a textual description (up to 30 characters) for a specific CSM profile

♦ Syntax Note ♦

If you do not specify a description in the command line, information for *all* profiles will be displayed.

Examples:

view csm profile

view csm profile "Audio traffic"

Screen Output

A screen similar to the following will be displayed:

CSM Connection Profile

Tx Traffic Information

| Description | Requested Parms | | Acceptable Parms | | Max Frame Size |
|-----------------|-----------------|-------------|------------------|-------------|----------------|
| | Cell Rate | Best Effort | Cell Rate | Best Effort | |
| ===== | ===== | ===== | ===== | ===== | ===== |
| "Audit traffic" | 353208 | True | 12200 | TRUE | 4520 |

Rx Traffic Information

| Description | Requested Parms | | Acceptable Parms | | Max Frame Size |
|-----------------|-----------------|-------------|------------------|-------------|----------------|
| | Cell Rate | Best Effort | Cell Rate | Best Effort | |
| ===== | ===== | ===== | ===== | ===== | ===== |
| "Audit traffic" | 353208 | True | 12200 | TRUE | 4520 |

view csm profile connection

Command Usage

View all connections associated with a specific CSM profile.

Syntax Options

```
view csm profile connection {profile name}
```

Definitions:

profile name = specifies the textual description for the CSM profile you want to view

Examples:

```
view csm profile connection "Audio traffic"
```

Screen Output

A screen similar to the following will be displayed:

PROFILE: Audio traffic

| CSM Connections | | | | | | | |
|-----------------|------|------|------|----------|------|------|------|
| Incoming | | | | Outgoing | | | |
| Slot | Port | VPI | VCI | Slot | Port | VPI | VCI |
| ==== | ==== | ==== | ==== | ==== | ==== | ==== | ==== |
| 3 | 1 | 0 | 100 | 5 | 1 | 0 | 100 |

