



ATM Policing by Service Category for SVC and SoftPVC

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Feature History

Release	Modification
12.2(4)B	This feature was introduced on the Cisco 6400 NSP.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

This module describes the ATM Policing by Service Category for SVC/SoftPVC feature in Cisco IOS Release 12.2(13)T and includes the following sections:

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.



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Feature Overview

When configured, an ATM switch at the network side of a user-to-network (UNI) interface polices the flow of cells in the forward (into the network) direction of a virtual connection. These traffic policing mechanisms are known as usage parameter control (UPC). With UPC, the switch determines whether received cells comply with the negotiated traffic management values and takes one of the following actions on violating cells:

- Pass the cell without changing the cell loss priority (CLP) bit in the cell header.
- Tag the cell with a CLP bit value of 1.
- Drop (discard) the cell.

The SVC/SoftPVC feature enables you to specify which traffic to police, based on service category, on switched virtual circuits (SVCs) or terminating VCs on the destination end of a soft VC.

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Benefits

This feature enables you to select which and how traffic is affected by UPC. For example, you can configure your switch to pass all UBR traffic, but tag all other traffic types.

Related Features and Technologies

- Intelligent early packet discard (EPD)
- Intelligent partial (tail) packet discard

Related Documents

- [ATM Switch Router Software Configuration Guide](#)
- [ATM and Layer 3 Switch Router Command Reference](#)
- [Guide to ATM Technology](#)
- [ATM Forum UNI 3.1 Specification](#)

Supported Platforms

This feature is supported on the node switch processor (NSP) of the Cisco 6400 carrier-class broadband aggregator.

Supported Standards MIBs and RFCs

Standards

None

MIBs

CISCO-ATM-IF-MIB.my--New objects were created for per-service category SVC UPC intent.

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

RFCs

None

Configuration Tasks

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Configuring ATM Policing by Service Category for SVC and SoftPVC

SUMMARY STEPS

1. Switch(config)# **interface** *atmslot/subslot/port*
2. Switch(config-if)# **atm svc-upc-intent** [{**abr** | **cbr** | **vbr-rt** | **vbr-nrt** | **ubr**}] {**tag** | **pass** | **drop**}

DETAILED STEPS

	Command or Action	Purpose
Step 1	Switch(config)# interface <i>atmslot/subslot/port</i>	Selects the ATM interface.
Step 2	Switch(config-if)# atm svc-upc-intent [{ abr cbr vbr-rt vbr-nrt ubr }] { tag pass drop }	Specifies the UPC mode. If no service category is specified, then the UPC mode configuration is applied to all traffic types.
	Example:	
	Example:	
	(Repeat this step for each service category and UPC mode combination.)	

Verifying ATM Policing by Service Category for SVC and SoftPVC

SUMMARY STEPS

1. Enter the **show atm vc** or **show atm vp** EXEC command to display the UPC mode for a particular VC or VP.
2. Enter the **show atm interface** EXEC command. If the UPC mode is not the same for all service categories, the "Svc Upc Intent" field displays "by sc."

DETAILED STEPS

Step 1 Enter the **show atm vc** or **show atm vp** EXEC command to display the UPC mode for a particular VC or VP.

Example:

```
Switch# show atm vc int atm 0/0/1 2 120
Interface:ATM0/0/1, Type:oc3suni
VPI = 2   VCI = 120
Status:DOWN
Time-since-last-status-change:1w1d
Connection-type:PVC
Cast-type:point-to-multipoint-leaf
Packet-discard-option:disabled
Usage-Parameter-Control (UPC):pass

Wrr weight:2
Number of OAM-configured connections:0
OAM-configuration:disabled
OAM-states: Not-applicable
Cross-connect-interface:ATM0/0/1, Type:oc3suni
...
```

Step 2 Enter the **show atm interface** EXEC command. If the UPC mode is not the same for all service categories, the "Svc Upc Intent" field displays "by sc."

Example:

```
Switch# show atm interface atm 8/0/1
Interface:      ATM8/0/1      Port-type:      oc3suni
IF Status:     UP            Admin Status:   up
Auto-config:   enabled        AutoCfgState:  completed
IF-Side:       Network        IF-type:        NNI
Uni-type:      not applicable  Uni-version:    not applicable
Max-VPI-bits:  8             Max-VCI-bits:  14
Max-VP:        255           Max-VC:         16383
ConfMaxSvpcVpi:255          CurrMaxSvpcVpi:255
ConfMaxSvccVpi:255          CurrMaxSvccVpi:255
ConfMinSvccVci:35           CurrMinSvccVci:35
Svc Upc Intent:by sc
                Signalling:   Enabled
ATM Address for Soft VC:47.0091.8100.0000.0002.b9ae.9301.4000.0c84.0010.00
Configured virtual links:
  PVCLs SoftVCLs  SVCLs  TVCLs  PVPLs SoftVPLs  SVPLs Total-Cfgd Inst-Conns
    3      4      0      0      1      0      0      8      7
Logical ports(VP-tunnels):  0
Input cells:  3036674      Output cells:  3036816
5 minute input rate:      0 bits/sec,      0 cells/sec
5 minute output rate:     0 bits/sec,      0 cells/sec
Input AAL5 pkts:1982638, Output AAL5 pkts:1982687, AAL5 crc errors:0
```

Troubleshooting Tips

If a VC is not configured with the appropriate UPC mode, make sure that the VC was set up after the **atm svc-upc-intent** command was configured. Changes to the UPC mode take affect after the VC is torn down and set up again.

Monitoring and Maintaining ATM Policing by Service Category for SVC and SoftPVC

Command	Purpose
Switch# show atm interface	Displays ATM-specific information about an ATM interface.
Switch# show controllers atm slot/subslot/port	Displays information about a physical port device. Includes dropped (or discarded) cells.
Switch# show atm vc [interface atm slot/subslot/port]	Displays the configured UPC action and intelligent packet discard mechanisms, as well as the number of cells discarded due to UPC violations.

- [Example Monitoring and Maintaining ATM Policing by Service Category for SVC and SoftPVC, page 5](#)

Example Monitoring and Maintaining ATM Policing by Service Category for SVC and SoftPVC

```
Switch# show atm vc interface atm 3/0/1.51 51 16

Interface: ATM3/0/1.51, Type: oc3suni
VPI = 51 VCI = 16
Status: DOWN
Time-since-last-status-change: 2w0d
Connection-type: PVC
Cast-type: point-to-point
Packet-discard-option: enabled

Usage-Parameter-Control (UPC): pass

Wrr weight: 32
Number of OAM-configured connections: 0
OAM-configuration: disabled
OAM-states: Not-applicable
Cross-connect-interface: ATM2/0/0, Type: ATM Swi/Proc
Cross-connect-VPI = 0
Cross-connect-VCI = 73
Cross-connect-UPC: pass
Cross-connect OAM-configuration: disabled
Cross-connect OAM-state: Not-applicable
Encapsulation: AAL5ILMI
```

```

Threshold Group: 6, Cells queued: 0
Rx cells: 0, Tx cells: 0
Tx Clp0:0, Tx Clp1: 0
Rx Clp0:0, Rx Clp1: 0
Rx Upc Violations:0, Rx cell drops:0

Rx pkts:0, Rx pkt drops:0
Rx connection-traffic-table-index: 6
Rx service-category: UBR (Unspecified Bit Rate)
Rx pcr-clp01: 424
Rx scr-clp01: none
Rx mcr-clp01: none
Rx      cdvt: 1024 (from default for interface)
Rx      mbs: none
Tx connection-traffic-table-index: 6
Tx service-category: UBR (Unspecified Bit Rate)
Tx pcr-clp01: 424
Tx scr-clp01: none
Tx mcr-clp01: none
Tx      cdvt: none
Tx      mbs: none
No AAL5 connection registered

```

Configuration Examples

- [Example Non-UBR Traffic Policing, page 6](#)

Example Non-UBR Traffic Policing

In the following example, the UBR traffic on ATM 3/0/0 is passed while all other traffic is policed:

```

Switch(config)# interface atm 3/0/0
Switch(config-if)# atm svc-upc-intentubr pass
Switch(config-if)# atm svc-upc-intentcbr tag
Switch(config-if)# atm svc-upc-intentvbr-rt tag
Switch(config-if)# atm svc-upc-intentvbr-nrt tag
Switch(config-if)# atm svc-upc-intentabr drop

```

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