

# MPLS CoS over ATM: CoS Map

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## Introduction

This document provides an addendum to the MPLS CoS Over ATM: Multi-VC TBR (with CAR) sample configuration.

It provides a Class of Service (CoS) map for the Multiprotocol Label Switching (MPLS) CoS mechanism. This shows how you can reduce the number of parallel link-state packets (LSPs) from four (the maximum and the default) to two (the minimum). It is sometimes necessary to do this in order to reduce the number of Label Virtual Circuits (LVCs) or "Tag VCs" in old terminology since there is a maximum number of VCs per ATM switch.

**Note:** This sample configuration uses **access-list 1 permit any**, but you can also apply a more specific access list, if necessary.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Hardware and Software Versions

This configuration was developed and tested with these software and hardware versions:

#### Edge LSR

- Software – Cisco IOS® Software Release 12.1(3)T. The Multi-VC feature appeared in Cisco IOS Software Release 12.0(5)T.
- Hardware – Cisco 7200 Routers with PA-A1.

**Note:** This feature only works with Cisco 7200 and 7500 Routers with PA-A1.

#### Core ATM LSR

- Software – Any software release that supports MPLS: the latest versions are recommended.
- Hardware – The LightStream 1010 and 8540MSR.

**Note:** A feature card per-flow queueing (FC-PFQ) is mandatory for the LightStream 1010.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

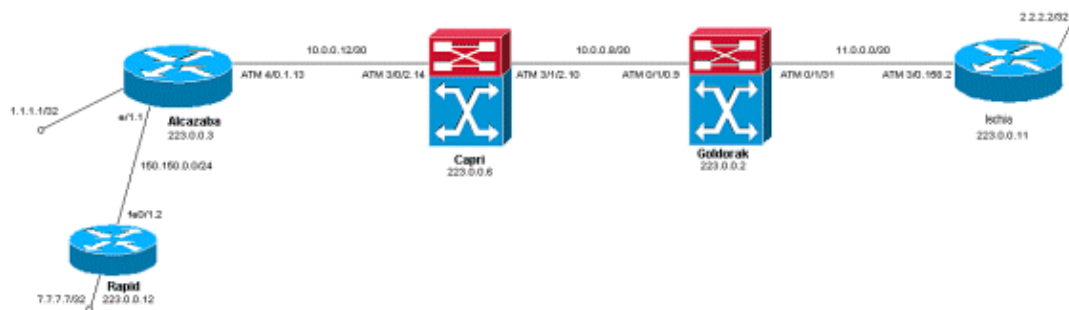
## Configure

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

**Note:** Use the Command Lookup Tool (registered customers only) to find more information on the commands used in this document.

## Network Diagram

This document uses this network setup:



## Configurations

Add these lines to the configuration described in MPLS CoS Over ATM: Multi-VC TBR (with CAR). As with the main configuration, add these lines to the edge Label Switch Routers (LSRs). In this example, it is Alcazaba and Ischia.

**Note:** Make sure that you issue configuration commands in general configuration mode.

Alcazaba and Ischia
<pre> Current configuration: ! tag-switching prefix-map 1 access-list 1 cos-map 1 ! tag-switching cos-map 1   class 0 available   class 1 available   class 2 premium   class 3 premium </pre>

```
!  
access-list 1 permit any  
!
```

## Verify

Use this section to confirm that your configuration works properly.

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

- **show tag-switching cos-map**
- **show tag-switching prefix-map**
- **show access-lists**
- **show tag-switching forwarding-table <destination> <mask> detail**
- **show tag-switching atm-tdp binding <destination> <mask>**

Use these commands to check the specific CoS mapping enabled on the edge LSRs:

```
Alcazaba#show tag-switching cos-map  
cos-map 1      class  tag-VC  
              3      premium  
              2      premium  
              1      available  
              0      available
```

```
Alcazaba#show tag-switching prefix-map  
prefix-map 1 access-list 1 cos-map 1
```

```
Alcazaba#show access-lists
```

```
Standard IP access list 1  
  permit any
```

Use these commands to check if the parallel LSPs are set up accordingly.

Use the first command on one of the edge LSRs:

```
Alcazaba#show tag-switching forwarding-table 2.2.2.2 32 detail  
Local  Outgoing  Prefix          Bytes tag  Outgoing  Next Hop  
tag    tag or VC    or Tunnel Id    switched  interface  
25     Multi-VC     2.2.2.2/32      0         AT4/0.1   point2point  
        available 2/33(910), standard 2/33(910), premium 2/34(911), control 2/34(911),  
        MAC/Encaps=4/8, MTU=4470, Tag Stack{Multi-VC}  
        04FD8847 004FD000  
        Per-packet load-sharing
```

Use the second command on an ATM switch on the core:

```
Capri#show tag atm-tdp bind 2.2.2.2 32  
Destination: 2.2.2.2/32  
  Transit ATM3/0/2 2/33 Active -> ATM3/1/2 2/77 Active, CoS=available  
  Transit ATM3/0/2 2/34 Active -> ATM3/1/2 2/78 Active, CoS=premium
```

# Troubleshoot

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

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## Related Information

- [More MPLS over ATM Information](#)
  - [Technical Support & Documentation – Cisco Systems](#)
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