Cisco − Configuring ATM − Frame Relay Service

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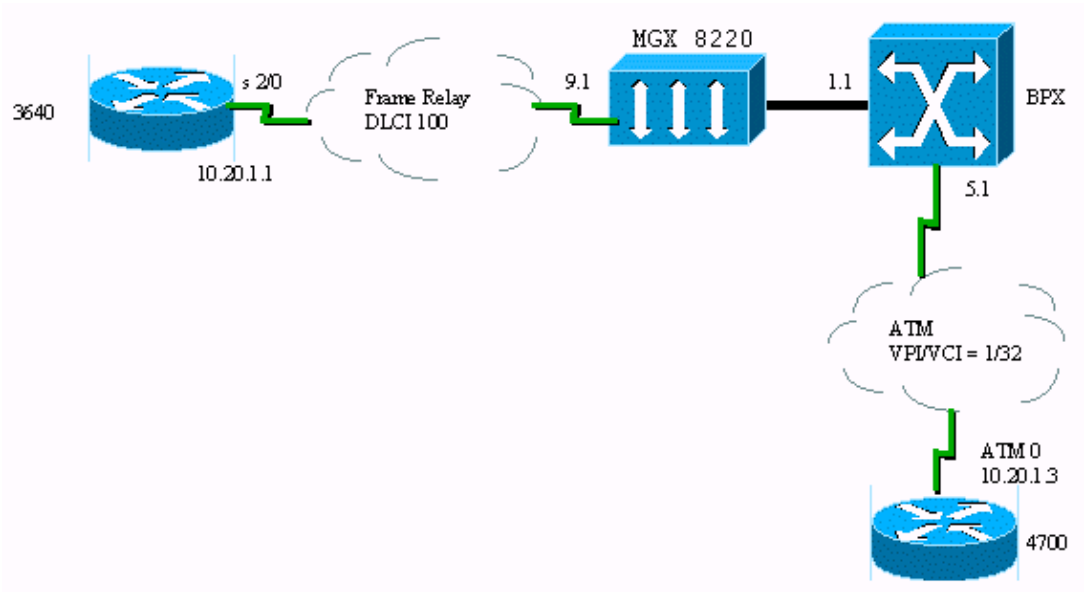
Configuring ATM−Frame Relay Service Interworking

Introduction

This document is an example of setting up ATM − Frame Relay Service InterWorking (SIW) between Cisco routers and Cisco/StrataCom WAN switches. For more detail on configuring traffic shaping on Cisco routers, refer to the Related Information section.

For more detail on configuring components, please see the reference manuals as well as the Designing ATM Internetworks in the *Internetwork Design Guide*.



Configuring the MGX 8220 Shelf

4. Verify that the line exists.

```
rtp−ax1.1.9.FRSM.a > dsplns

Line  Conn   Type     Status/Coding Length  XmtClock Alarm Stats
      Type                                   Source    Alarm
____ _____   ____     _____________ _______ ________

9.1   DB−15  dsx1ESF  Dis/dsx1B8ZS 0−110 ft LocalTim

9.2   DB−15  dsx1ESF  Dis/dsx1B8ZS 0−110 ft LocalTim
```

```
9.3   DB-15  dsx1ESF  Dis/dsx1B8ZS 0-110 ft LocalTim

9.4   DB-15  dsx1ESF  Dis/dsx1B8ZS 0-110 ft LocalTim


LineNumOfValidEntries: 4


Syntax : dsplns
```

3. Enable the line.

```
rtp-ax1.1.9.FRSM.a > addln 1

rtp-ax1.1.9.FRSM.a >
```

If this works, you will only get the prompt back. However, you can make sure that the status is enabled by typing in **dsplns** again.

```
Line  Conn  Type  Status/Coding Length  XmtClock Alarm Stats
      Type                               Source    Alarm

____ ______ ____  _____________ ______  ________

9.1  DB-15 dsx1ESF Ena/dsx1B8ZS 0-110 ft LocalTim

9.2  DB-15 dsx1ESF Dis/dsx1B8ZS 0-110 ft LocalTim

9.3  DB-15 dsx1ESF Dis/dsx1B8ZS 0-110 ft LocalTim

9.4  DB-15 dsx1ESF Dis/dsx1B8ZS 0-110 ft LocalTim


 LineNumOfValidEntries: 4


 Syntax : dsplns


 rtp-ax1.1.9.FRSM.a >
```

2. Add the logical port configuration.

The following sets up a 256K port between the 3640 and the MGX 8220 shelf with a port type of **frame relay**.

```
rtp-ax1.1.9.FRSM.a > addport 1 1 2 1 4 1

rtp-ax1.1.9.FRSM.a >
```

Then configure the port to use LMI signaling, in this example we are using **StrataLmi** with async updates.

```
rtp−ax1.1.9.FRSM.a > cnfport 1 s y

rtp−ax1.1.9.FRSM.a >
```

Verify that the port has been added and the configuration is correct.

```
Port Ena/Speed EQServ SignalType T391 T392 N391 N392 N393  Type    Alarm
         Ratio
____ ___ _____ ______ __________ ____ ____ ____ ____ ____ ________ _____
9.1.1 Mod/ 256k  1    StrataLMI   10   15   6    3    4   frameRel  Yes

Number of ports:              1

PortDs0UsedLine1:             0x0000000f

PortDs0UsedLine2:             0x00000000

PortDs0UsedLine3:             0x00000000

PortDs0UsedLine4:             0x00000000

PortNumNextAvailable:         96


Syntax : dspports
```

1. Now you are ready to add the data−link connection identifier (DLCI) and ATM internetworking. Remember that the actual internetworking conversion from RFC 1490 (Frame Relay side) to RFC 1483 (ATM side) is done on the MGX 8220 shelf. (See Obtaining RFCs and Other Standards Documents for more information about these and other RFCs.)

   The example below depicts adding a connection using logical channel number 40 on logical port 1 (timeslots 1−4) configured with DLCI 100 with a CIR of 128 using protocol SNAP translation (SIW−xlation).

```
rtp−ax1.1.9.FRSM.a > addchan 40 1 100 128 3

SAR−MSG>>LCN 40 is enabled

rtp−ax1.1.9.FRSM.a >

rtp−ax1.1.9.FRSM.a > dspchans
```

Verify the channel.

```
DLCI    Chan EQ   I/EQDepth   I/EQDEThre  I/EECNThre  Fst/ DE  Type  Alarm
____    ____ __  __________  __________  __________

9.1.1.100  40  2  65535/65535  32767/32767  6553/6553  Dis/Dis  SIW−x  Yes

Number of channels:    1

ChanNumNextAvailable:  31
```

```
Syntax : dspchans
```

Configuring the BPX

4. Make sure that the ATM Service Interface (ASI) port is up and active.

   Up the line:

   ```
   upln 5.1
   ```

   Up the port:

   ```
   upport 5.1
   ```

3. Add the shelf to the network.

   Up the trunk on the BNI port 1.1:

   ```
   uptrk 1.1
   ```

   Add the MGX 8220 shelf connected to 1.1:

   ```
   addshelf 1.1 A
   ```

2. Verify that the MGX 8220 shelf exists on the network. Use the command **dspnode** to see the MGX 8220 shelf listed.

1. Add the connection from the ASI (port 5.1) the Broadband Network Interface (BNI) (1.1) where the MGX 8220 shelf is located using the slot number (9) and channel number (40) configured in the MGX 8220 section above. Please note that the connection class must be **ATFR** (ATM−Frame Relay).

   ```
   addcon 5.1.1.32 rtp−bpx1 1.1.9.40 ATFR 600 * * * * 300 * * * * * e n *
   ```

   - The connection can be the same or a different node in the network.
   - The quality of service and bandwidth requirements must match your network requirements. In this example, we are matching the 256kbps line rate setup on the MGX 8220 shelf to the peak cell rate (PCR) and the committed information rate (CIR) equal to the sustainable cell rate (SCR).

Configuring the ATM−Attached Router (Cisco 4700)

The following is the required configuration for the ATM−attached router with a minimum of 1 PVC.

```
int atm 0.1
ip address 10.20.1.3 255.255.255.0
ATM pvc 1 1 32 aal5snap
map−group sample1

  ....


map−list sample1
ip 10.20.1.1 atm−vc 1 broadcast
```

Configuring the Frame Relay−Attached Router (Cisco 3640)

The following example demonstrates configuration for a 3640 that is Frame Relay−attached. This example uses a Cisco 3640 with an integrated channel service unit (CSU), which requires configuration of the controller information as well. If you are using an external channel service unit/data service unit (CSU/DSU) to a Cisco 2500−series router, for example, the controller configuration would not be required.

```
controller T1 2/0
  framing esf
  linecode b8zs
  channel−group 0 timeslots 4 speed 64


interface Serial2/0:0
  ip address 10.20.1.1 255.255.255.0
  no ip mroute−cache
  encapsulation frame−relay IETF
  frame−relay map ip 10.20.1.3 100 broadcast
```

Related Information

- **Frame Relay Traffic Shaping**
- **TM Traffic Shaping on the 2600 and 3600 Series Routers**
- **Cisco WAN Switching Solutions − Cisco Documentation**
- **Guide to New Names and Colors for WAN Switching Products**
- **Software Center − WAN Switching Software**
- **Technical Support − Cisco Systems**