

Cisco – Configuring Basic Frame Relay

Table of Contents

<u>Configuring Basic Frame Relay</u>	1
<u>Introduction</u>	1
<u>Before You Begin</u>	1
<u>Conventions</u>	1
<u>Prerequisites</u>	1
<u>Components Used</u>	1
<u>Configure</u>	1
<u>Network Diagram</u>	2
<u>Configurations</u>	2
<u>Verify</u>	3
<u>debug and show Commands</u>	3
<u>Troubleshoot</u>	5
<u>Related Information</u>	5

Configuring Basic Frame Relay

Introduction

Before You Begin

- Conventions

- Prerequisites

- Components Used

Configure

- Network Diagram

- Configurations

Verify

- debug and show Commands

Troubleshoot

Related Information

Introduction

This document provides a sample configuration for basic Frame Relay.

Before You Begin

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Prerequisites

There are no specific prerequisites for this document.

Components Used

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

Configure

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

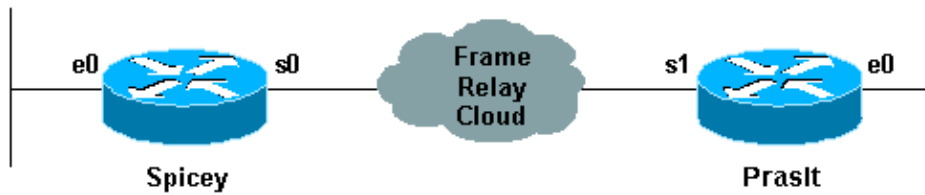
Before you can plan a Frame Relay configuration, you need to have reliable connections to a local Frame Relay switch at both ends of the permanent virtual circuit (PVC).

In this document, the Local Management Interface (LMI)-type defaults to "cisco" LMI on Spicey. An interface is by default a "multipoint" interface so, **frame-relay inverse-arp** is on (for point-to-point, there is no Inverse ARP). IP split horizon checking is disabled by default for Frame Relay encapsulation, so routing updates come in and out the same interface. The routers learn the data-link connection identifiers (DLCIs) they need to use from the Frame Relay switch via LMI updates. The routers then Inverse ARP for the remote IP address and create a mapping of local DLCIs and their associated remote IP addresses.

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

Network Diagram

This document uses the network setup shown in the diagram below.



Configurations

- Spicey
- Prasit

Spicey
<pre>Spicey#show running-config Building configuration... Current configuration : 1705 bytes ! version 12.1 service timestamps debug datetime msec service timestamps log datetime msec no service password-encryption ! hostname Spicey ! ! ! interface Ethernet0 ip address 124.124.124.1 255.255.255.0 ! interface Serial0 ip address 3.1.3.1 255.255.255.0 encapsulation frame-relay frame-relay interface-dlci 140 ! ! router rip network 3.0.0.0 network 124.0.0.0 ! line con 0 exec-timeout 0 0 transport input none line aux 0 line vty 0 4 login ! end</pre>

Prasit
<pre>Prasit#show running-config Building configuration... Current configuration : 1499 bytes</pre>

```

!
version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Prasit
!
!
!
interface Ethernet0
 ip address 123.123.123.1 255.255.255.0
!
!
interface Serial1
 ip address 3.1.3.2 255.255.255.0
 encapsulation frame-relay
 frame-relay interface-dlci 150
!
!
router rip
 network 3.0.0.0
 network 123.0.0.0
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 login
!
end

```

Verify

debug and show Commands

Before issuing **debug** commands, please see Important Information on Debug Commands.

- **show frame-relay map**
- **show frame-relay pvc**
- **show frame-relay lmi**
- **ping <device name>**
- **show ip route**

Spicey

```

Spicey#show frame-relay map
Serial0 (up): ip 3.1.3.2 dlci 140(0x8C,0x20C0), dynamic,
             broadcast,, status defined, active

```

```

Spicey#show frame-relay pvc
PVC Statistics for interface Serial0 (Frame Relay DTE)

```

	Active	Inactive	Deleted	Static
Local	1	0	0	0
Switched	0	0	0	0
Unused	0	0	0	0

```

DLCI = 140, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial0
  input pkts 83          output pkts 87          in bytes 8144
  out bytes 8408        dropped pkts 0          in FECN pkts0
  in BECN pkts 0        out FECN pkts 0        out BECN pkts0
  in DE pkts 0          out DE pkts 0
  out bcast pkts 41     out bcast bytes 3652
  pvc create time 01:31:50, last time pvc status changed 01:28:28
Spicey#show frame-relay lmi
LMI Statistics for interface Serial0 (Frame Relay DTE) LMI TYPE = CISCO
  Invalid Unnumbered info 0          Invalid Prot Disc 0
  Invalid dummy Call Ref 0           Invalid Msg Type 0
  Invalid Status Message 0           Invalid Lock Shift 0
  Invalid Information ID 0            Invalid Report IE Len 0
  Invalid Report Request 0            Invalid Keep IE Len 0
  Num Status Enq. Sent 550            Num Status msgs Rcvd 552
  Num Update Status Rcvd 0            Num Status Timeouts 0
Spicey#ping 123.123.123.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 123.123.123.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 36/36/40 ms
Spicey#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set
  3.0.0.0/24 is subnetted, 1 subnets
C       3.1.3.0 is directly connected, Serial0
  124.0.0.0/24 is subnetted, 1 subnets
C       124.124.124.0 is directly connected, Ethernet0
R       123.0.0.0/8 [120/1] via 3.1.3.2, 00:00:08, Serial0

```

Prasit

```

Prasit#show frame-relay map
Serial1 (up): ip 3.1.3.1 dlci 150(0x96,0x2460), dynamic,
             broadcast,, status defined, active

Prasit#show frame-relay pvc
PVC Statistics for interface Serial1 (Frame Relay DTE)
      Active      Inactive      Deleted      Static
Local          1             0             0             0
Switched       0             0             0             0
Unused         0             0             0             0
DLCI = 150, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial1
  input pkts 87          output pkts 83          in bytes 8408
  out bytes 8144        dropped pkts 0          in FECN pkts 0
  in BECN pkts 0        out FECN pkts 0        out BECN pkts 0
  in DE pkts 0          out DE pkts 0
  out bcast pkts 38     out bcast bytes 3464
  pvc create time 01:34:29, last time pvc status changed 01:28:05

Prasit#show frame-relay lmi
LMI Statistics for interface Serial1 (Frame Relay DTE) LMI TYPE = CISCO
  Invalid Unnumbered info 0          Invalid Prot Disc 0
  Invalid dummy Call Ref 0           Invalid Msg Type 0
  Invalid Status Message 0           Invalid Lock Shift 0

```

```
Invalid Information ID 0
Invalid Report Request 0
Num Status Enq. Sent 569
Num Update Status Rcvd 0
```

```
Invalid Report IE Len 0
Invalid Keep IE Len 0
Num Status msgs Rcvd 570
Num Status Timeouts 0
```

```
Prasit#ping 124.124.124.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 124.124.124.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 36/36/36 ms
```

```
Prasit#show ip route
```

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
```

```
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
```

```
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
```

```
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
```

```
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
```

```
inter area
```

```
        * - candidate default, U - per-user static route, o - ODR
```

```
        P - periodic downloaded static route
```

```
Gateway of last resort is not set
```

```
        3.0.0.0/24 is subnetted, 1 subnets
```

```
        C        3.1.3.0 is directly connected, Serial1
```

```
        R        124.0.0.0/8 [120/1] via 3.1.3.1, 00:00:19, Serial1
```

```
        123.0.0.0/24 is subnetted, 1 subnets
```

```
        C        123.123.123.0 is directly connected, Ethernet0
```

Troubleshoot

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

Related Information

- [More Information on Frame Relay Commands](#)
 - [More Information on Configuring Frame Relay](#)
 - [Comprehensive Guide to Configuring and Troubleshooting Frame Relay](#)
 - [Frame Relay Technology Support Pages](#)
 - [Technical Support – Cisco Systems](#)
-

All contents are Copyright © 1992–2003 Cisco Systems, Inc. All rights reserved. Important Notices and Privacy Statement.