

Configuring STUN SDLC over Frame Relay

Document ID: 12380

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Introduction

This is a sample configuration for Serial Tunnel (STUN) Synchronous Data Link Control (SDLC) over Frame Relay. The relevant states in the **show stun** command output and state changes in the **debug** command output are highlighted in the Sample show and debug Output section of this document.

Note: In the Sample show and debug Output section, the SDLC broadcast address FF is activated first, followed by the end user s C1 address. Although the **debug stun packet** and **debug stun event** commands should not cause excessive CPU utilization, the **logging buffered** command is used to copy the output to the log file.

When you are troubleshooting, remember that many STUN SDLC issues are caused either by incorrect Nonreturn to Zero (NRZ) or Nonreturn to Zero Inverted (NRZI) encoding, or by an SDLC address mismatch.

Note: The default encoding is NRZ. To change the encoding to NRZI, issue the **NRZI-encoding** command under the serial interface.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on Cisco IOS® Software Release 12.1(5).

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

For more information on document conventions, refer to Cisco Technical Tips Conventions.

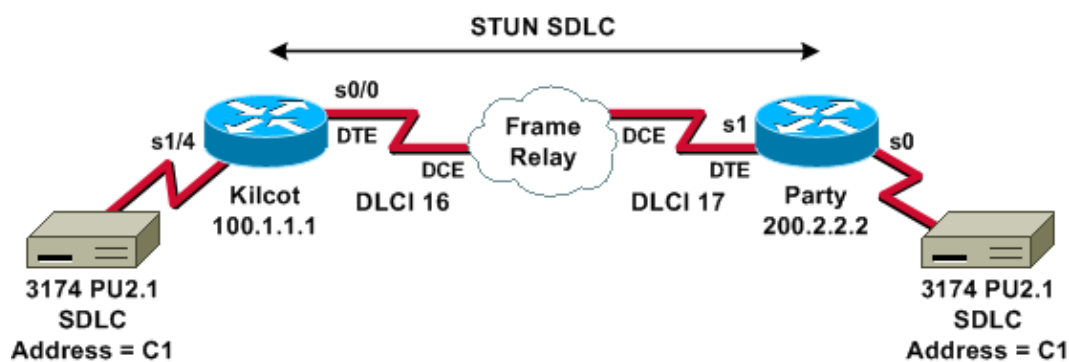
Configure

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

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

Network Diagram

This document uses this network setup:



Configurations

This document uses these configurations:

- Kilcot
- Party

Kilcot
Building configuration... <pre>version 12.1 service timestamps debug datetime msec ! hostname kilcot ! ! stun peer-name 100.1.1.1 stun protocol-group 5 sdlc stun remote-peer-keepalive ! ! interface Loopback0 ip address 100.1.1.1 255.0.0.0 ! interface Serial0/0 ip address 10.1.1.1 255.0.0.0 encapsulation frame-relay no ip mroute-cache frame-relay interface-dlci 16</pre>

```

frame-relay lmi-type ansi
!
interface Serial1/4
no ip address
encapsulation stun
load-interval 30
clockrate 64000
stun group 5
stun sdlc-role secondary
sdlc address C1
stun route address C1 tcp 200.2.2.2
stun route address FF tcp 200.2.2.2
!
!
router rip
network 10.0.0.0
network 100.0.0.0
!
!
end

```

Party

```

Building configuration...

version 12.1
service timestamps debug datetime msec
!
hostname party
!
!
stun peer-name 200.2.2.2
stun protocol-group 5 sdlc
stun remote-peer-keepalive
!
!
interface Loopback0
ip address 200.2.2.2 255.255.255.0
!
interface Serial0
no ip address
encapsulation stun
load-interval 30
clockrate 64000
stun group 5
stun sdlc-role primary
sdlc address C1
stun route address C1 tcp 100.1.1.1
stun route address FF tcp 100.1.1.1
!
interface Serial1
ip address 10.1.1.2 255.0.0.0
encapsulation frame-relay IETF
no ip mroute-cache
frame-relay interface-dlci 17
frame-relay lmi-type ansi
!
!
router rip
network 10.0.0.0
network 200.2.2.0
!
end

```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

This section provides information that you can use to troubleshoot your configuration.

Troubleshooting Commands

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

Note: Before you issue any **debug** commands, refer to Important Information on Debug Commands.

- **show stun**
- **debug stun packet**
- **debug stun event**

Sample show and debug Output

For an explanation of the **debug** command output shown in this section, refer to the debug stun packet section of Debugging SDLC.

```
kilcot# show stun

This peer: 100.1.1.1

*Serial1/4 (group 5 [sdlc])
state rx_pkts tx_pkts drops poll
C1 TCP 200.2.2.2 open 35 39 0
FF TCP 200.2.2.2 open 6 4 0

party# show stun

This peer: 200.2.2.2

*Serial0 (group 5 [sdlc])
state rx_pkts tx_pkts drops poll
C1 TCP 100.1.1.1 open 10 5 0
FF TCP 100.1.1.1 open 4 7 0
```

The **debug stun packet** and **debug stun event** command output has been copied to the log file. Use this information to interpret the **debug** command output:

- Serial Data Incoming (SDI) Packets that are received from the SDLC interface.
- Network Data Incoming (NDI) Packets that are de-encapsulated from the WAN.

```
kilcot# show log

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
  Console logging: disabled
  Monitor logging: level debugging, 0 messages logged
  Buffer logging: level debugging, 813 messages logged
  Trap logging: level informational, 46 message lines logged

Log Buffer (100000 bytes):
```

```
Dec 27 11:12:05.465: %STUN-6-PASSIVEOPEN: passive open 200.2.2.2(11027) -> 1994
Dec 27 11:12:05.485: %STUN-6-OPENED: PHDR: peer (FF[5])200.2.2.2/1994 opened,
[previous state closed]
Dec 27 11:12:05.485: STUN: Change state for peer (FF[5])200.2.2.2/1994
(closed->open)
Dec 27 11:12:05.485: STUN sdlc: 00:13:07 Serial1/4 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.493: STUN sdlc: 00:00:00 Serial1/4 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.577: STUN sdlc: 00:00:00 Serial1/4 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.609: STUN sdlc: 00:00:00 Serial1/4 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.733: STUN sdlc: 00:00:00 Serial1/4 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.761: STUN sdlc: 00:00:00 Serial1/4 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.885: STUN sdlc: 00:00:00 Serial1/4 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.917: STUN sdlc: 00:00:00 Serial1/4 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:06.037: STUN sdlc: 00:00:00 Serial1/4 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:07.049: STUN sdlc: 00:00:01 Serial1/4 SDI: (OC1/008) U: SNRM PF:1
Dec 27 11:12:07.053: STUN: Change state for peer (C1[5])200.2.2.2/1994
(closed->opening)
Dec 27 11:12:07.053: STUN: Change state for peer (C1[5])200.2.2.2/1994
(opening->open wait)
Dec 27 11:12:07.053: %STUN-6-OPENING: CONN: opening peer (C1[5])200.2.2.2/1994, 3
Dec 27 11:12:07.081: %STUN-6-OPENED: CONN: peer (C1[5])200.2.2.2/1994 opened,
[previous state open wait]
Dec 27 11:12:07.081: STUN: Change state for peer (C1[5])200.2.2.2/1994
(open wait->open)
Dec 27 11:12:10.049: STUN sdlc: 00:00:03 Serial1/4 SDI: (OC1/008) U: SNRM PF:1
Dec 27 11:12:10.089: STUN sdlc: 00:00:00 Serial1/4 NDI: (OC1/008) U: UA PF:1
Dec 27 11:12:10.101: STUN sdlc: 00:00:00 Serial1/4 SDI: (OC1/008) S: RR PF:1 NR:000
Dec 27 11:12:10.189: STUN sdlc: 00:00:00 Serial1/4 NDI: (OC1/008) I PF:1 NR:000
NS:000
Dec 27 11:12:10.229: STUN sdlc: 00:00:00 Serial1/4 SDI: (OC1/008) I PF:0 NR:001
NS:000
```

party# **show log**

```
Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
  Console logging: disabled
  Monitor logging: level debugging, 0 messages logged
  Buffer logging: level debugging, 1155 messages logged
  Trap logging: level informational, 67 message lines logged
```

Log Buffer (100000 bytes):

```
Dec 27 11:12:05.422: STUN sdlc: 00:13:05 Serial0 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.422: STUN: Change state for peer (FF[5])100.1.1.1/1994
(closed->opening)
Dec 27 11:12:05.422: STUN: Change state for peer (FF[5])100.1.1.1/1994
(opening->open wait)
Dec 27 11:12:05.422: %STUN-6-OPENING: CONN: opening peer (FF[5])100.1.1.1/1994, 3
Dec 27 11:12:05.454: %STUN-6-OPENED: CONN: peer (FF[5])100.1.1.1/1994 opened,
[previous state open wait]
Dec 27 11:12:05.454: STUN: Change state for peer (FF[5])100.1.1.1/1994
(open wait->open)
Dec 27 11:12:05.510: STUN sdlc: 00:00:00 Serial0 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.538: STUN sdlc: 00:00:00 Serial0 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.650: STUN sdlc: 00:00:00 Serial0 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.690: STUN sdlc: 00:00:00 Serial0 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.802: STUN sdlc: 00:00:00 Serial0 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.846: STUN sdlc: 00:00:00 Serial0 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.958: STUN sdlc: 00:00:00 Serial0 NDI: (OFF/008) U: XID PF:1
Dec 27 11:12:05.998: STUN sdlc: 00:00:00 Serial0 SDI: (OFF/008) U: XID PF:1
Dec 27 11:12:07.094: %STUN-6-PASSIVEOPEN: passive open 100.1.1.1(11001) -> 1994
Dec 27 11:12:07.114: %STUN-6-OPENED: PHDR: peer (C1[5])100.1.1.1/1994 opened,
[previous state closed]
Dec 27 11:12:07.114: STUN: Change state for peer (C1[5])100.1.1.1/1994
(closed->open)
```

```
Dec 27 11:12:07.114: STUN sdlc: 00:00:01 Serial0 NDI: (0C1/008) U: SNRM PF:1
Dec 27 11:12:10.066: STUN sdlc: 00:00:02 Serial0 NDI: (0C1/008) U: SNRM PF:1
Dec 27 11:12:10.070: STUN sdlc: 00:00:00 Serial0 SDI: (0C1/008) U: UA PF:1
Dec 27 11:12:10.118: STUN sdlc: 00:00:00 Serial0 NDI: (0C1/008) S: RR PF:1 NR:000
Dec 27 11:12:10.138: STUN sdlc: 00:00:00 Serial0 SDI: (0C1/008) I PF:1 NR:000
NS:000
Dec 27 11:12:10.270: STUN sdlc: 00:00:00 Serial0 NDI: (0C1/008) I PF:0 NR:001
NS:000
Dec 27 11:12:10.278: STUN sdlc: 00:00:00 Serial0 NDI: (0C1/008) I PF:1 NR:001
NS:001
```

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Updated: Sep 09, 2005

Document ID: 12380
