

Redundant Cisco TN3270 Servers with HSRP in a Non-DLUR/DLUS Environment Configuration Example

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Introduction

This document provides a sample configuration for a redundant Cisco TN3270 server intended for a Non-Dependent Logical Unit Requester (DLUR) and Non-Dependent Logical Unit Server (DLUS) environment.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

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

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.

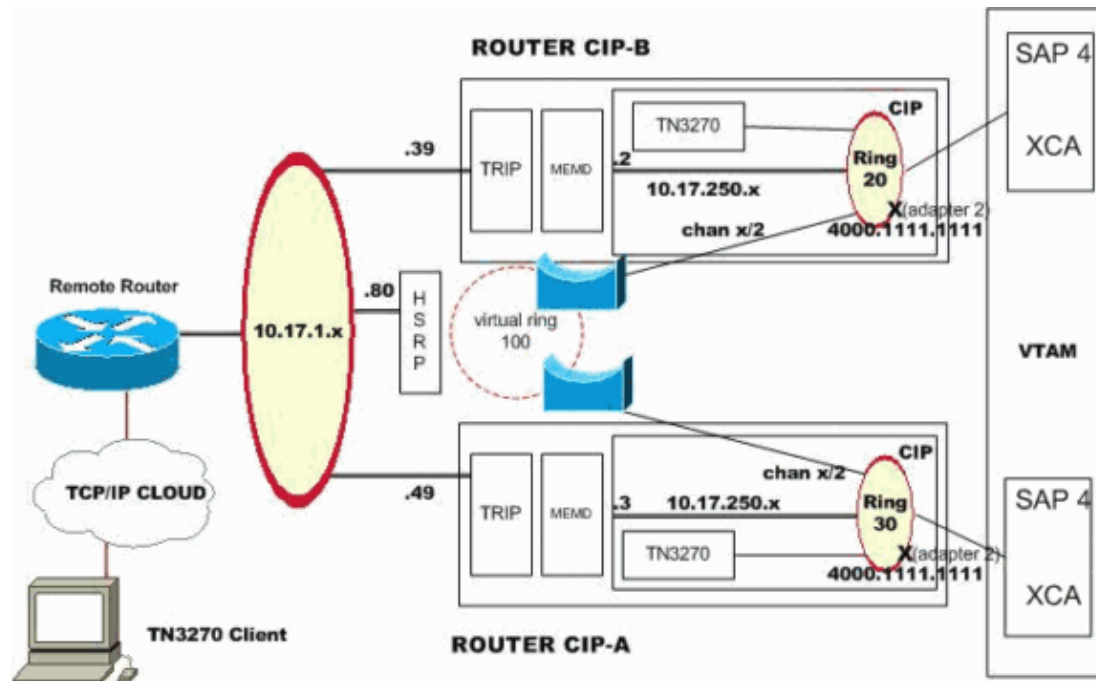
Configure

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

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 this network setup:



Configuration Details

These details are relevant for this configuration:

- In this design, the Cisco TN3270 server is in an active state in one router, and inactive in the other.
- The Cisco TN3270 client connects to the Cisco TN3270 server at IP address 10.17.250.1 with the next-hop address 10.17.1.80 for IP routing. Hot Standby Router Protocol (HSRP) makes this address available.
- One of the Cisco routers becomes the active HSRP router and forwards the packets to the destination address. Because the local Cisco TN3270 server is reachable in one hop, it serves as the destination.
- A Cisco TN3270 connection is established between the client and the local Cisco TN3270 server.

Note: IP routing for network 10.17.250.0 needs to be stable while the Cisco TN3270 sessions are alive. A dynamic routing protocol among the two routers and the client may swap the route between the routers. HSRP can guarantee this. Do not distribute routing information for network 10.17.250.0 with the dynamic routing protocol on the Token Ring.

Configurations

This document uses these configurations:

- I/O Configuration Program (IOCP)
- Virtual Telecommunications Access Method (VTAM) External Communication Adapter (XCA) Major Nodes
- VTAM Switched Major Node
- VTAM LUGROUP Major Node

- Router Configuration for Channel Interface Processor A (CIP A)
- Router Configuration for CIP B
- Router Configuration for Remote

I/O Configuration Program (IOCP)

For an IOCP, CHPID 22 is used to connect to CIP A, as follows:

```
*
CHPID PATH=(( 22)),TYPE=BL
CNTLUNIT CUNUMBR=0100,PATH=( 22),UNITADD=(( E0,16)),UNIT=3088, SHARED=N      X
        PROTOCOL=S4
IODEVICE ADDRESS=( 8E0,16),CUNUMBR=( 0100),UNIT=CTC
*
```

CHPID 23 is used to connect to CIP B:

```
* * CHPID PATH=(( 23)),TYPE=CNC CNTLUNIT CUNUMBR=0200,PATH=( 23),UNITADD=(( E0,16)),UNIT=SCTC,
        SHARED=N X IODEVICE ADDRESS=( 7E0,16),CUNUMBR=( 0200),UNIT=SCTC
```

VTAM XCA Major Nodes

```
XCA0100  VBUILD TYPE=XCA
XCA0100P PORT  ADAPNO=2,CUADDR=8E5,SAPADDR=04,MEDIUM=RING,TIMER=60
XCA0100G GROUP ANSWER=ON,                                     X
                AUTOGEN=( 10,L,P),                             X
                CALL=INOUT,                                     X
                DIAL=YES,                                       X
                ISTATUS=ACTIVE
*****
XCA0200  VBUILD TYPE=XCA
XCA0200P PORT  ADAPNO=2,CUADDR=7E5,SAPADDR=04,MEDIUM=RING,TIMER=60
XCA0200G GROUP ANSWER=ON,                                     X
                AUTOGEN=( 10,L,P),                             X
                CALL=INOUT,                                     X
                DIAL=YES,                                       X
                ISTATUS=ACTIVE
```

VTAM Switched Major Node

```
SWIN3270 VBUILD TYPE=SWNET,MAXGRP=10,MAXNO=10
*
A3270PU  PU      ADDR=01,                                     X
                PUTYPE=2,                                       X
                LUGROUP=DDDLULAB,LUSEED=A3270L##,              X
                PACING=8,VPACING=8,                             X
                IDBLK=05D,                                       X
                IDNUM=0100A
*
B3270PU  PU      ADDR=01,                                     X
                PUTYPE=2,                                       X
                LUGROUP=DDDLULAB,LUSEED=B3270L##,              X
                PACING=8,VPACING=8,                             X
                IDBLK=05D,                                       X
                IDNUM=0100B
```

VTAM LUGROUP Major Node

```
DDDLUUSX VBUILD TYPE=LUGROUP
DDDLULAB LUGROUP
```

327904E	LU	DLOGMOD=D4C32784,MODETAB=ISTINCLM,USSTAB=ISTINCDT, SSCPFM=USS3270,LOGAPPL=TSO	X
327804E	LU	DLOGMOD=D4C32704,MODETAB=ISTINCLM,USSTAB=ISTINCDT, SSCPFM=USS3270,LOGAPPL=TSO	X
327804	LU	DLOGMOD=D4C32782,MODETAB=ISTINCLM,USSTAB=ISTINCDT, SSCPFM=USS3270,LOGAPPL=TSO	X
@	LU	DLOGMOD=D4C32782,MODETAB=ISTINCLM,USSTAB=ISTINCDT, SSCPFM=USS3270,LOGAPPL=TSO	X

Router Configuration for CIP A

```

version 11.0
service udp-small-servers
service tcp-small-servers
!
hostname CIP-A
!
enable password cisco
!
source-bridge ring-group 100
dlsw local-peer peer-id 10.17.1.39
dlsw remote-peer 0 tcp 10.17.1.49
!

!--- Remote Source-Route Bridging (RSRB) can also be used instead of
!--- Data-Link Switching (DLsw); then, the two DLsw commands are replaced by:
!--- source-bridge remote-peer 100 tcp 10.17.1.39
!--- source-bridge remote-peer 100 tcp 10.17.1.49

!
interface Tokenring3/0
ip address 10.17.1.39 255.255.255.0
no ip redirects
ring-speed 16
!

!--- Allow the local router to assume control as the active router
!--- based on higher interface priority.

standby 1 preempt

!--- Define the HSRP IP address.

standby 1 ip 10.17.1.80

!--- The Track Host Standby priority is based on the availability
!--- and priority of the CIP Virtual Interface x/2.

standby 1 track Channel 1/2 50
standby 1 track Channel 1/0 50
!
interface Channel1/0
no ip address
csna C000 E5
!
interface Channel1/2
ip address 10.17.250.2 255.255.255.0
no keepalive
lan Tokenring 1
source-bridge 20 1 100
adapter 2 4000.1111.1111

!--- Bound to XCA in VTAM.

adapter 3 4000.aaaa.aaaa

```

```
!--- Bound to TN3270 Physical Unit (PU) A3270PU on CIP.
```

```
adapter 4 4000.cccc.cccc
```

```
!--- Bound to TN3270 PU BRAHMPU2 on CIP.
```

```
tn3270-server
```

```
idle-time 1800
```

```
no keepalive
```

```
pu A3270PU 05D0100A 10.17.250.1 token-adapt 3 40
```

```
rmac 4000.1111.1111 rsap 04 lu-seed A3270L##
```

```
pu BRAHMPU2 05D76543 10.17.250.10 token-adapter 4 50
```

```
rmac 4000.1111.1111 rsap 04 lu-seed PADMA##
```

```
!
```

```
logging buffered 50000
```

```
!
```

```
line con 0
```

```
exec-timeout 0 0
```

```
line aux 0
```

```
transport input all
```

```
line vty 0 4
```

```
password cisco
```

```
login
```

```
!
```

Router Configuration for CIP B

```
version 11.0
```

```
service udp-small-servers
```

```
service tcp-small-servers
```

```
!
```

```
hostname CIP-B
```

```
!
```

```
enable password cisco
```

```
!
```

```
source-bridge ring-group 100
```

```
dlsw local-peer peer-id 10.17.1.49
```

```
dlsw remote-peer 0 tcp 10.17.1.39
```

```
!
```

```
!--- RSRB can also be used instead of DLSw; then, the two DLSw commands  
!--- are replaced by:
```

```
!--- source-bridge remote-peer 100 tcp 10.17.1.49
```

```
!--- source-bridge remote-peer 100 tcp 10.17.1.39
```

```
!
```

```
interface Tokenring3/0
```

```
ip address 10.17.1.49 255.255.255.0
```

```
no ip redirects
```

```
ring-speed 16
```

```
!
```

```
!--- Allow the local router to assume control as the active router based  
!--- on higher interface priority.
```

```
standby 1 preempt
```

```
!--- Define the HSRP IP address.
```

```
standby 1 ip 10.17.1.80
```

```
!--- The Track Host Standby priority is based on the availability  
!--- and priority of the CIP Virtual Interface x/2.
```

```

standby 1 track Channel 1/2 50
standby 1 track Channel 1/0 50
!
interface Channel1/0
no ip address
csna C000 E5
!
interface Channel1/2
ip address 10.17.250.3 255.255.255.0
no keepalive
lan Tokenring 0
source-bridge 30 1 100
adapter 2 4000.1111.1111

!--- Bound to XCA in VTAM.

adapter 3 4000.bbbb.bbbb

!--- Bound to TN3270 PU B3270PU on CIP.

adapter 4 4000.cccc.cccc

!--- Bound to TN3270 PU PADMAPU2 on CIP.

tn3270-server
idle-time 1800
no keepalive
pu B3270PU 05D0100B 10.17.250.1 token-adapt 3 40
rmac 4000.1111.1111 rsap 04 lu-seed B3270L##
pu PADMAPU2 05D65432 10.17.250.10 token-adapter 4 50
rmac 4000.1111.1111 lu-seed PADMA##
!
logging buffered 50000
!
line con 0
exec-timeout 0 0
line aux 0
transport input all
line vty 0 4
password cisco
login
!
end

```

Router Configuration for Remote

```

service udp-small-servers
service tcp-small-servers
!
hostname remote

interface TokenRing0
ip address 10.17.100.23 255.255.255.0
ring-speed 16
!
interface TokenRing1
ip address 10.17.1.65 255.255.255.0
ring-speed 16
!

!--- The default route to TN3270 PU listening subnet through the HSRP IP address.

ip route 10.17.250.0 255.255.255.0 10.17.100.80
!

```

```
!--- The default route to the TFTP server.
ip route 171.68.118.0 255.255.255.0 10.17.1.1
!
line con 0
  exec-timeout 0 0
line aux 0
  exec-timeout 0 0
line vty 0 4
  exec-timeout 0 0
  password ww
  login
!
end
```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

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

Failure Situations

Described here are causes of common failures:

- A router or the Token Ring interface is down.

The HSRP partner router takes over the routing for network 10.17.250.0. Reestablish the Cisco TN3270 sessions to the backup Cisco TN3270 server, which has the same IP address.

- The CIP is down (interface channel x/2 is down).

Cisco TN3270 sessions end, and the HSRP partner router becomes the active one. Reestablish sessions to the backup Cisco TN3270 server.

- The channel or XCA fails.

The local Cisco TN3270 server loses its PU session to the VTAM while the Cisco TN3270 clients are still connected to this local Cisco TN3270 server. The server establishes a Logical Link Control 2 (LLC2) session to the remote adapter on the backup router with DLSw or RSRB.

Cautions

Be aware of these situations that can also impact performance:

- The Cisco TN3270 server fails, but the virtual channel interface is still alive.
 - There is no load distribution.
 - Different adapters are used for the Cisco TN3270 server and the XCA node, which may impact performance.
 - Direct printer LUs are not backed up (different PUs create a different LU name).
-

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