

# Configuring Host Redundancy Using TN3270 Session Switching Via DLUR/DLUS

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## Introduction

This document provides a sample configuration for configuring host redundancy using TN3270 session switching via Dependent LU Requester/Dependent LU Server (DLUR/DLUS)

## 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.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

### Design Notes

- This sample configuration includes three mainframes:
  - ◆ one running Multiple Virtual Storage (MVS) and configured as an Advanced Peer-to-Peer Networking (APPN) end node
  - ◆ one running Virtual Media (VM) and configured as an APPN Network Node (NN) and primary DLUS
  - ◆ one running VM and configured as an APPN NN and backup DLUS

- The TN3270 server router (Channel Interface Processor B (CIPB)) is channel-attached to primary and backup DLUS via an Enterprise System Connection (ESCON) director.
- The remote CIP router (Channel Interface Processor A (CIPA)) is channel-attached to the MVS mainframe (APPN end node).
- There is a DLSw+ cloud between the routers.
- There is no APPN subsystem on the routers, except the TN3270 server DLUR on CIPB. There is no TN3270 server on CIPA; CIPA can run Cisco IOS 11.0 or later.
- Three Physical Units (PUs) are defined in the Switched Major Node (SMN): two for direct PUs and one for session switching, as shown in the table below:

Direct PUs		SNA Session Switch
CAPPU1	CAPPU2	VMPU
LUs	LUs	LUs

- Coding Virtual Route Node (VRN) (DLSw under DLUR) allows the CIP DLUR end node to discover direct routes to MVS that bypass VM1 and VM2.
- Both VM1 (primary DLUS) and VM2 (backup DLUS) have the same PU (VMPU) definition (as in the same IDBLK and IDNUM).

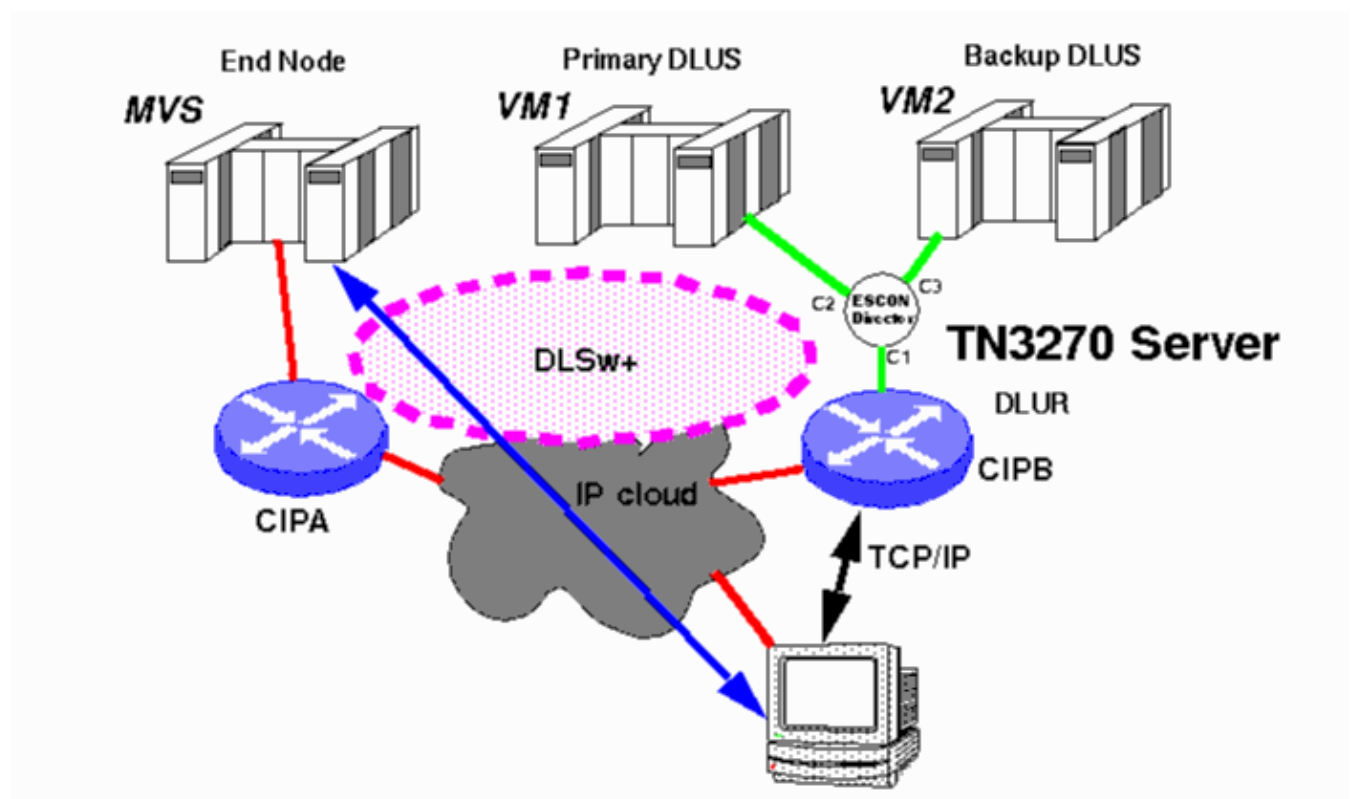
## Configure

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 the network setup shown in the diagram below.



# Configurations

This document uses the configurations shown below.

- IOCP
- VTAM XCA Major Node for MVS
- VTAM XCA Major Node for VM1
- VTAM XCA Major Node for VM2
- VTAM Switched Major Node (MVS Mainframe)
- VTAM Switched Major Node (VM1 Mainframe)
- VTAM Switched Major Node (VM2 Mainframe)
- VTAM LUGROUP Major Node (MVS Mainframe)
- VTAM LUGROUP Major Node (VM1 Mainframe)
- VTAM LUGROUP Major Node (VM2 Mainframe)
- Router Configuration for CIPA
- Router Configuration for CIPB
- DNS Server Resource Record

IOCP
<p><b>CHPID 19 is used to connect to CIPA to MVS</b></p> <pre> * CHPID PATH=((19)),TYPE=BL CNTLUNIT CUNUMBR=0350,PATH=(19),UNITADD=((B4,4)),UNIT=3088, SHARED=N IODEVICE ADDRESS=(2B4,4),CUNUMBR=(0350),UNIT=CTC * </pre>
<p><b>CHPID 12 is used to connect CIPB to VM1</b></p> <pre> * CHPID PATH=((12)),TYPE=CNC CNTLUNIT CUNUMBR=0700,PATH=(12),UNITADD=((00,4)),UNIT=SCTC, SHARED=N IODEVICE ADDRESS=(700,4),CUNUMBR=(0700),UNIT=SCTC * </pre>
<p><b>CHPID 22 is used to connect CIPB to VM2</b></p> <pre> * CHPID PATH=((22)),TYPE=CNC CNTLUNIT CUNUMBR=0899,PATH=(22),UNITADD=((00,4)),UNIT=SCTC, SHARED=N IODEVICE ADDRESS=(700,4),CUNUMBR=(0899),UNIT=SCTC * </pre>

VTAM XCA Major Node for MVS
<pre> CIPXCAA VBUILD TYPE=XCA CIPXCAAP PORT ADAPNO=2,CUADDR=2B4,SAPADDR=04,MEDIUM=RING,TIMER=60, X VNNAME=DLSW, X VNGROUP=CIPXCAAG CIPXCAAG GROUP ANSWER=ON, X AUTOGEN=(10,L,P), X CALL=INOUT, X DIAL=YES, X ISTATUS=ACTIVE * * * </pre>

### VTAM XCA Major Node for VM1

```

CIPXCAB  VBUILD  TYPE=XCA
CIPXCABP PORT  ADAPNO=0 ,CUADDR=700 ,SAPADDR=04 ,MEDIUM=RING ,TIMER=60 ,      X
                VNNAME=DLSW ,                                           X
                VNGROUP=CIPXCABG
CIPXCABG GROUP ANSWER=ON ,                                               X
                AUTOGEN=( 10 ,L ,P ) ,                                     X
                CALL=INOUT ,                                               X
                DIAL=YES ,                                                 X
                ISTATUS=ACTIVE
*
*
*

```

### VTAM XCA Major Node for VM2

```

CIPXCAB  VBUILD  TYPE=XCA
CIPXCABP PORT  ADAPNO=0 ,CUADDR=700 ,SAPADDR=08 ,MEDIUM=RING ,TIMER=60 ,      X
                VNNAME=DLSW ,                                           X
                VNGROUP=CIPXCABG
CIPXCABG GROUP ANSWER=ON ,                                               X
                AUTOGEN=( 10 ,L ,P ) ,                                     X
                CALL=INOUT ,                                               X
                DIAL=YES ,                                                 X
                ISTATUS=ACTIVE

```

### VTAM Switched Major Node (MVS mainframe)

```

SWTN3270 VBUILD  TYPE=SWNET ,MAXNO=15 ,MAXGRP=5
*
E194TRV0 PU      IDBLK=05D ,                                           X
                IDNUM=49974 ,                                           X
                DISCNT=NO ,                                             X
                DLOGMOD=A3278M2 ,                                       X
                MAXOUT=7 ,                                             X
                ADDR=01 ,                                             X
                MAXPATH=2 ,                                           X
                MAXDATA=521 ,                                           X
                LUGROUP=TN3LUGRP ,                                       X
                LUSEED=T10V0### ,                                       X
                PACING=2 ,                                             X
                PUTYPE=2 ,                                             X
                VPACING=0 ,                                             X
                SSCPFM=USS3270 ,                                       X
                ISTATUS=ACTIVE ,                                       X
                MODETAB=ISTINCLM ,                                       X
                LOGAPPL=VTTPROD ,                                       X
                USSTAB=ISTINCDT

```

### VTAM Switched Major Node (VM1 Mainframe)

```

SWTN3270 VBUILD  TYPE=SWNET ,MAXGRP=10 ,MAXNO=10 ,MAXDLUR=10
*
TN3270   PU      ADDR=01 ,                                           X
                PUTYPE=2 ,                                           X
                ISTATUS=ACTIVE ,                                       X
                CPCP=YES ,                                             X
                TGN=1 ,                                             X
                NETID=NETA ,                                           X
                CPNAME=DLUR3270
*
* Define direct PU with two specific LUs
*

```

CAPPU1	PU	IDBLK=05D,	X
		IDNUM=49977,	X
		DISCNT=NO,	X
		DLOGMOD=A3278M2,	X
		MAXOUT=7,	X
		ADDR=01,	X
		MAXPATH=2,	X
		MAXDATA=521,	X
		LUGROUP=DDDLUVM1,	X
		LUSEED=T10V3###,	X
		PACING=2,	X
		PUTYPE=2,	X
		VPACING=0,	X
		SSCPFM=USS3270,	X
		ISTATUS=ACTIVE,	X
		MODETAB=ISTINCLM,	X
		LOGAPPL=VTTPROD,	X
		USSTAB=ISTINCDT	
		STATOPT='CISCO CIP 193'	
CAP01L01	LU	LOCADDR=01	
CAP01L02	LU	LOCADDR=02,LOGAPPL=VM	
		*	
		*Define Session Switched PU	
		*	
VMPU	PU	ADDR=01,	X
		PUTYPE=2,	X
		LUGROUP=DDDLUVM1,LUSEED=VM1LU##,	X
		PACING=8,VPACING=8,	X
		IDBLK=05D,	X
		IDNUM=01000	

### VTAM Switched Major Node (VM2 Mainframe)

SWTN3270	VBUILD	TYPE=SWNET,MAXGRP=10,MAXNO=10,MAXDLUR=10	
		*	
		*Define DLUR node	
		*	
TN3270	PU	ADDR=01,	X
		PUTYPE=2,	X
		ISTATUS=ACTIVE,	X
		CPCP=YES,	X
		TGN=1,	X
		NETID=NETA,	X
		CPNAME=DLUR3270	
		*	
		* Define direct PU with two specific LUs	
		*	
CAPPU2	PU	IDBLK=05D,	X
		IDNUM=49978,	X
		DISCNT=NO,	X
		DLOGMOD=A3278M2,	X
		MAXOUT=7,	X
		ADDR=01,	X
		MAXPATH=2,	X
		MAXDATA=521,	X
		LUGROUP=DDDLUVM2,	X
		LUSEED=T20V3###,	X
		PACING=2,	X
		PUTYPE=2,	X
		VPACING=0,	X
		SSCPFM=USS3270,	X
		ISTATUS=ACTIVE,	X
		MODETAB=ISTINCLM,	X
		LOGAPPL=VTTPROD,	X
		USSTAB=ISTINCDT	

```

STATOPT='CISCO CIP 194'
CAP02L01 LU LOCADDR=01
CAP02L02 LU LOCADDR=02,LOGAPPL=VM
*
* Define Session Switched PU
*
VMPU PU ADDR=01, X
PUTYPE=2, X
LUGROUP=DDDLUVM2,LUSEED=VM2LU##, X
PACING=8,VPACING=8, X
IDBLK=05D, X
IDNUM=01000

```

**VTAM LUGROUP Major Node (MVS Mainframe)**

```

TN3270G VBUILD TYPE=LUGROUP
*
TN3LUGRP LUGROUP
*
327802 LU DLOGMOD=D4C32782, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327803 LU DLOGMOD=D4C32783, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327804 LU DLOGMOD=D4C32784, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327805 LU DLOGMOD=D4C32785, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327902 LU DLOGMOD=D4C32782, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327903 LU DLOGMOD=D4C32783, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327904 LU DLOGMOD=D4C32784, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327905 LU DLOGMOD=D4C32785, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327802E LU DLOGMOD=SNX32702, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327803E LU DLOGMOD=SNX32703, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327804E LU DLOGMOD=SNX32704, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X
SSCPFM=USS3270
327805E LU DLOGMOD=SNX32705, X
MODETAB=ISTINCLM, X
USSTAB=USSTCPIP, X

```

327902E	LU	SSCPFM=USS3270 DLOGMOD=SNX32702, MODETAB=ISTINCLM, USSTAB=USSTCPIP, SSCPFM=USS3270	X X X
327903E	LU	DLOGMOD=SNX32703, MODETAB=ISTINCLM, USSTAB=USSTCPIP, SSCPFM=USS3270	X X X
327904E	LU	DLOGMOD=SNX32704, MODETAB=ISTINCLM, USSTAB=USSTCPIP, SSCPFM=USS3270	X X X
327905E	LU	DLOGMOD=SNX32705, MODETAB=ISTINCLM, USSTAB=USSTCPIP, SSCPFM=USS3270	X X X
3278S2	LU	DLOGMOD=D4C32782, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S3	LU	DLOGMOD=D4C32783, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S4	LU	DLOGMOD=D4C32784, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S5	LU	DLOGMOD=D4C32785, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3279S2	LU	DLOGMOD=D4C32782, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3279S3	LU	DLOGMOD=D4C32783, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3279S4	LU	DLOGMOD=D4C32784, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3279S5	LU	DLOGMOD=D4C32785, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S2E	LU	DLOGMOD=SNX32702, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S3E	LU	DLOGMOD=SNX32703, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S4E	LU	DLOGMOD=SNX32704, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3278S5E	LU	DLOGMOD=SNX32705, MODETAB=ISTINCLM, USSTAB=USSSNA, SSCPFM=USSSCS	X X X
3279S2E	LU	DLOGMOD=SNX32702,	X

		MODETAB=ISTINCLM,	X
		USSTAB=USSSNA,	X
		SSCPFM=USSSCS	
3279S3E	LU	DLOGMOD=SNX32703,	X
		MODETAB=ISTINCLM,	X
		USSTAB=USSSNA,	X
		SSCPFM=USSSCS	
3279S4E	LU	DLOGMOD=SNX32704,	X
		MODETAB=ISTINCLM,	X
		USSTAB=USSSNA,	X
		SSCPFM=USSSCS	
3279S5E	LU	DLOGMOD=SNX32705,	X
		MODETAB=ISTINCLM,	X
		USSTAB=USSSNA,	X
		SSCPFM=USSSCS	
@	LU	DLOGMOD=D4C32782,	X
		MODETAB=ISTINCLM,	X
		USSTAB=USSSNA,	X
		SSCPFM=USSSCS	

### VTAM LUGROUP Major Node (VM1 Mainframe)

DDDLUUSX	VBUILD	TYPE=LUGROUP	
DDDLUVM1	LU	LUGROUP	
327904E	LU	DLOGMOD=D4C32784, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=VM	X
327804E	LU	DLOGMOD=D4C32704, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=VM	X
327804	LU	DLOGMOD=D4C32782, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=VM	X
@	LU	DLOGMOD=D4C32782, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=VM	X

### VTAM LUGROUP Major Node (VM2 Mainframe)

DDDLUUSX	VBUILD	TYPE=LUGROUP	
DDDLUVM2	LU	LUGROUP	
327904E	LU	DLOGMOD=D4C32784, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=MVS	X
327804E	LU	DLOGMOD=D4C32704, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=MVS	X
327804	LU	DLOGMOD=D4C32782, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=MVS	X
@	LU	DLOGMOD=D4C32782, MODETAB=ISTINCLM, USSTAB=ISTINCDT, SSCPFM=USS3270, LOGAPPL=MVS	X

### Router Configuration for CIPA

```

version 11.0
!
hostname CIPA
!
enable password cisco
!
source-bridge ring-group 100
dls local-peer peer-id 192.71.1.20
dls remote-peer tcp 0 192.71.1.30
!
interface Ethernet0/0
 ip address 192.71.1.20 255.255.255.0
!
interface Channell1/0
 no ip address
 csna 0100 B4

```

```

!
interface Channell1/2
  no ip address
  lan Tokenring 0
  llc2 n1 4105
  source-bridge 20 1 100
  adapter 0 4000.aaaa.aaaa
!
logging buffered 70000
!
end

```

### Router Configuration for CIPB

```

version 11.2
!
hostname CIPB
!
enable password cisco
!
source-bridge ring-group 100
dlsw local-peer peer-id 192.71.1.30
dlsw remote-peer tcp 0 192.71.1.20
!
interface Ethernet0/0
  ip address 192.71.1.30 255.255.255.0
!
interface Channell1/0
  no ip address
  csna C200 00
  csna C300 00
!
interface Channell1/2
  ip address 10.32.70.10 255.255.255.0
  ip address 10.32.20.1 255.255.255.0 secondary
  no keepalive
  lan Tokenring 0
  llc2 n1 4105
  source-bridge 30 1 100
  adapter 0 4000.bbbb.bbbb          bound for SCA in VTAMS.
  adapter 1 4000.cccc.cccc          bound for TN3270 on CIP.
tn3270-server
  pu CAPPU1 05D49977 10.32.20.2 token-adapt 1 1C rmac 4000.bbbb.bbbb rsap 04
  pu CAPPU2 05D49978 10.32.20.3 token-adapt 1 20 rmac 4000.bbbb.bbbb rsap 08
  dlur NETA.DLUR3270 NETA.VM1PRI
  lsap token-adapter 0
    link VM1PRI rmac 40000.bbbb.bbbb rsap 04
    link VM2SEC rmac 40000.bbbb.bbbb rsap 08
  vrn DLSW
  pu VMPU 05D01000 10.32.70.20
  dlus-backup NETA.VM2SEC
!
logging buffered 70000

```

### DNS Server Resource Record

```

*
CICS.TN3270.APPN.COM 6000 IN A 10.32.70.20
CICS.TN3270.BAR1.COM 6000 IN A 10.32.20.2
CICS.TN3270.BAR2.COM 6000 IN A 10.32.20.3
*

```

## Verify

There is currently no verification procedure available for this configuration.

## Troubleshoot

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

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## Related Information

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