

Configuring High Performance Routing Using IP

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Introduction

This document configures High Performance Routing (HPR) that uses IP. The network diagram in this document shows how SNA Switching Services (SNASw) can be used to connect to downstream devices.

In this case, a downstream physical unit (DSPU) router is simulating a downstream physical unit (PU) connected to Virtual Telecommunications Access Method (VTAM) through the Dependent LU Requester (DLUR). The DSPU router is configured as a DSPU host token. The PU connects to the virtual Token Ring interface on the SNASw router by means of Source–Route Bridging (SRB) over the physical Token Ring interface. The upstream connection to the host is done through IP. The Channel Interface Processor (CIP) Router is configured to run Cisco Multipath Channel+ (CMPC+).

To implement this configuration, you must have these Host definitions:

- XCA major node in VTAM with MEDIUM=HPRIP
- Switch major node for the SNASw Control Point
- Switch major node for the downstream PU
- Transport Resource List (TRL)
- Profile TCP/IP with device name that matches the VTAM TRL entry

To implement Enterprise Extender (EX), you need OS/390 V2R6 with Authorized Program Analysis Report (APAR) OW36113.

To run SNASw, you need a minimum of Cisco IOS® Software Release 12.0(5)XN or 12.0(6)T.

For CMPC+, you need a minimum of Cisco IOS Software Release 12.0(3)T.

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.

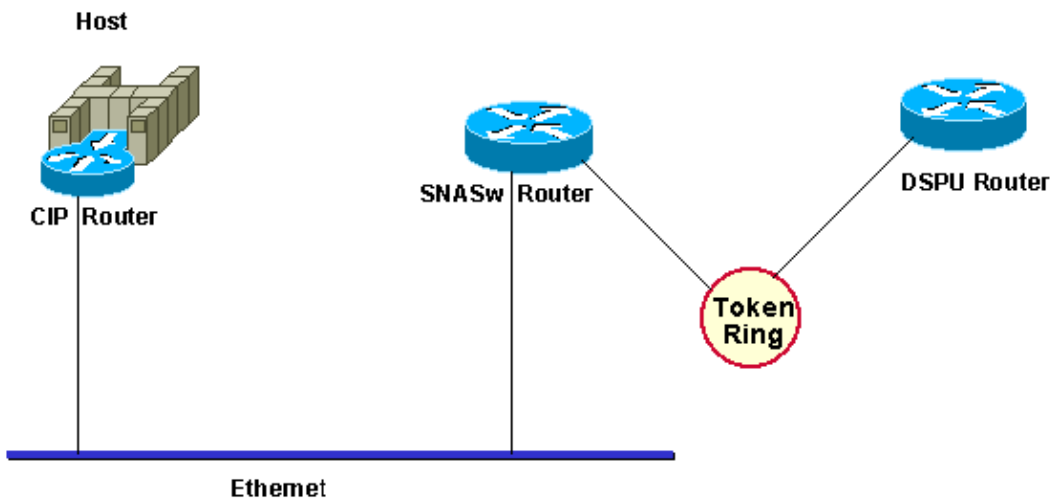
Configure

In this section, you are presented with the information to configure the features 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:



Note: The downstream devices are not limited to LAN-based connections; therefore, you can use Synchronous Data Link Control (SDLC). You can also use Data Link Switching Plus (DLSW+) for downstream devices, and you can connect into the SNASw through a virtual data-link control (VDLC) port.

Configurations

This document uses these configurations:

- SNASw Router
- DSPU Router
- CIP Router
- Host Definitions

SNASw Router

```
Current configuration:
!
version 12.0
hostname SNASW
!
boot system flash slot0:rsp-a3jsv-mz.120-5.XN
enable password lab
!
ip subnet-zero
!
source-bridge ring-group 100
!
interface Ethernet0/0/0
 ip address 172.18.49.37 255.255.255.128
 no ip directed-broadcast
 no ip route-cache distributed
!
interface TokenRing2/0/2
 no ip address
 no ip directed-broadcast
 no ip route-cache distributed
 ring-speed 16
 source-bridge 200 1 100
 source-bridge spanning
!
interface Virtual-TokenRing2
 description this interface is used to connect in DSPU TOKEN
!
mac-address 4000.eeee.0000
 no ip address
 no ip directed-broadcast
 ring-speed 16
 source-bridge 222 1 100
 source-bridge spanning
!
snasw cpname NETA hostname
snasw dlus NETA.MVSD
snasw port HPRIP hpr-ip Ethernet0/0/0
snasw port VTOK2 Virtual-TokenRing2 conntype nohpr
snasw link HPRMVSD port HPRIP ip-dest 172.18.1.41
!
router eigrp 109
 network 172.18.0.0
 no auto-summary
!
ip classless
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 login
!
end
```

Note: The DLUS name can be obtained from the SSCPNAME entry: issue the **D NET,VTAMOPTS** command to display the VTAM start options.

DSPU Router

```
!
hostname DSPU
!
```

```

boot system flash
enable password lab
!
ip subnet-zero
!
source-bridge ring-group 300
!
dspu host TOKEN xid-snd 02201002 rmac 4000.eeee.0000 rsap 4 lsap 12
dspu pool pool_lu host TOKEN lu 2 2
!
interface TokenRing0/0
  no ip address
  no ip directed-broadcast
  ring-speed 16
  source-bridge 200 1 300
  dspu enable-host lsap 12
  dspu start TOKEN
!
line con 0
  exec-timeout 0 0
  transport input none
line aux 0
line vty 0 4
  password lab
  login
!
end

```

CIP Router

```

Current configuration:
!
version 12.0
hostname CIPRouter
!
enable password lab
!
microcode CIP flash slot0:cip27-6
microcode reload
ip subnet-zero
!
source-bridge ring-group 80
interface Ethernet0/0
  ip address 172.18.49.17 255.255.255.128
  no ip directed-broadcast
  no ip mroute-cache
!
interface Channell1/0
  no ip address
  no ip directed-broadcast
  no keepalive
!
interface Channell1/1
  no ip address
  no ip directed-broadcast
  no keepalive
  cmpc E160 92 EETGJEB READ
  cmpc E160 93 EETGJEB WRITE
!
interface Channell1/2
  ip address 172.18.1.42 255.255.255.248
  no ip directed-broadcast
  no ip mroute-cache
  no keepalive
  lan TokenRing 0

```

```

source-bridge 70 1 80
  adapter 0 4000.dddd.aaaa
  tg EETGJEB ip 172.18.1.43 172.18.1.42
!
router eigrp 109
  network 172.18.0.0
  no auto-summary
!
ip classless
ip route 172.18.1.41 255.255.255.255 172.18.1.43
!
line con 0
  exec-timeout 0 0
  transport input none
line aux 0
line vty 0
  exec-timeout 0 0
  password lab
  login
  length 75
  width 114
line vty 1 4
  exec-timeout 0 0
  password lab
  login
!
end

```

Host Definitions	
CISCO.NETMD.VTAMLST(XCAEEJEB)	

EEXCAJ VBUILD TYPE=XCA	
EETGJ PORT MEDIUM=HPRIP,	X
VNNAME=EEJEB,	X
VNGROUP=EEGRPJ,	X
LIVTIME=15,	X
SRQTIME=15,	X
SRQRETRY=9,	X
SAPADDR=04	
*	
EEGRPJ GROUP ANSWER=ON,	X
AUTOGEN=(64,L,P),	X
CALL=INOUT,	X
DIAL=YES,	X
DYNPU=YES,	X
DYNPUPFX=\$E,	X
ISTATUS=ACTIVE	
CISCO.NETMD.VTAMLST(EETGJEB)	

EETGJEBV VBUILD TYPE=TRL	
EETGJEB TRLE LNCTL=MPC,MAXBFPU=16,	X
READ=(4F92),	X
WRITE=(4F93)	

PROFILE.TCPIP	
DEVICE IUTSAMEH MPCPTP AUTORESTART	
LINK samehlnk MPCPTP IUTSAMEH	
;	
DEVICE EETGJEB MPCPTP	
LINK EELINK2 MPCPTP EETGJEB	
;	

```

DEVICE VIPADEV2 VIRT 0
LINK VIPALNK2 VIRT 0 VIPADEV2
;
HOME
172.18.1.43 EELINK2
; This corresponds to the host-ip-addr for the CIPRouter tg command.
172.18.1.41 VIPALNK2
; This corresponds to the ip-dest specified in the SNASW router link command.
GATEWAY
172.18 = EELINK2 4468 0.0.255.248 0.0.1.40
172.18 172.18.1.42 EELINK2 4468 0.0.255.0 0.0.49.0
;
START IUTSAMEH
START EETGJEB
-----

VIEW          CISCO.NETMD.VTAMLST(SNASWCP) - 01.02          Columns 00001 00072
*****
***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 *          SNASWITCH CONTROL POINT
000002          VBUILD TYPE=SWNET
000003 *
000004 R7507PU  PU      ADDR=01,ANS=CONTINUE,DISCNT=NO,          X
000005          PUTYPE=2, ISTATUS=ACTIVE,          X
000006          NETID=NETA,CPCP=YES,CONNTYPE=APPN,CPNAME=SNASW,HPR=YES
000007
***** Bottom of Data *****
-----

VIEW          CISCO.NETMD.VTAMLST(SNASWPUS) - 01.02          Columns 00001 00072
*****
***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 *          SNASWITCH DOWNSTREAM PU
000002          VBUILD TYPE=SWNET
000003 *
000004 DSPU02  PU      ADDR=01,ANS=CONTINUE,DISCNT=NO,          X
000005          PUTYPE=2, ISTATUS=ACTIVE,          X
000006          DLOGMOD=D4C32782,MODETAB=ISTINCLM,USSTAB=USSTCPMF, X
000007          IDBLK=022, IDNUM=01002          X
000008 DSPU02LU LU      LOCADDR=02
***** Bottom of Data *****

```

Verify

This section provides information that you can use to confirm that your configuration is working properly.

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

show Commands

- **show snasw session** Displays the session and partner details.
- **show snasw dlus** Verifies whether the DLUS is active.
- **show snasw pu** Determines if the PU is active.
- **show snasw link** Verifies the port that the link uses, the node type, and whether the link is active.

trace Commands

- **snasw dlctrace** Traces frames that are arriving and leaving SNASw.
- **show dlctrace** Displays a trace on the console; alternatively, you can dump the trace onto a server. Refer to the Cisco IOS Bridging and IBM Networking Command Reference, Volume II, Release 12.1 manual for more information.



Warning: Do not issue the **debug snasw dlc** command; you can issue the **snasw dlctrace** command to obtain the same trace. The **snasw dlctrace** command is the preferred method to gather this trace information because it is written to a capture buffer instead of directly to the console. The **debug snasw dlc** command should be used *only* when you are certain that excessive output will not go to the console.

Before you attempt any of these debug commands, refer to Important Information on Debug Commands.

Troubleshoot

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

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