

# Configuring SNA Switching Services Over DLSw

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## Introduction

This document describes how to configure a router and a mainframe computer to use Systems Network Architecture Switching Services (SNASw) over Data-Link Switching (DLSw), to connect upstream to the mainframe and downstream to a legacy Physical Unit (PU) 2.0 node. In this document's example, the upstream connection to the mainframe is through a Channel Interface Processor (CIP), and the PU 2.0 node connects to the mainframe over the Dependent Logical Unit Requester (DLUR) pipe established by SNASw.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

The information in this document is based on these software and hardware versions:

- SNASw 4700 with Cisco IOS Software Release 12.1(7)
- CIP 7507 with Cisco IOS Software Release 12.1(7)
- Downstream Physical Unit (DSPU) 4700 with Cisco IOS Software Release 12.0(10)

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.

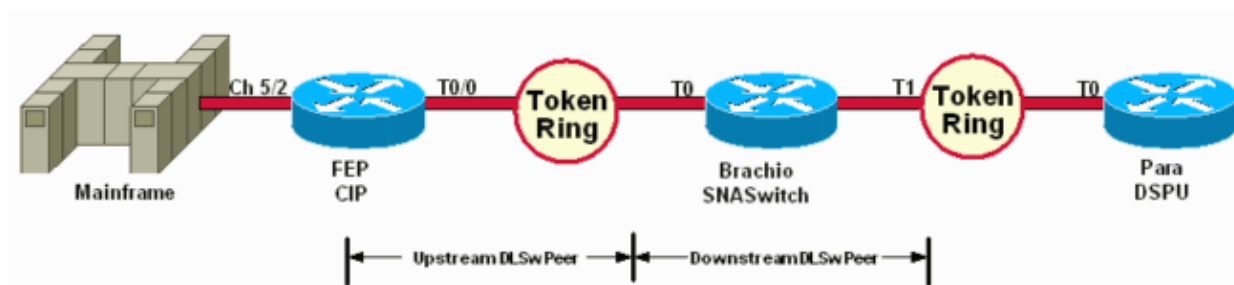
# Configure

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:



The DSPU is only used to bring up a PU on the Token Ring. Note that the remote MAC (rmac) to which it connects is the MAC address that is specified on the Virtual Data-link Control (VDLC) port that is defined to SNASw on Brachio.

## Configurations

This document uses these configurations:

- Brachio
- FEP
- Para
- Mainframe

A link statement is required only for the upstream connection, and only one VDLC port definition is needed by both the upstream and the downstream connections.

### Brachio ??? SNASwitch Router Configuration

```
!  
version 12.1  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
!  
hostname brachio  
!  
no logging buffered  
!  
!  
!  
!  
!  
ip subnet-zero  
no ip domain-lookup  
!  
cns event-service server  
!
```

```

source-bridge ring-group 2
dlsw local-peer peer-id 10.64.3.195
dlsw remote-peer 0 tcp 10.64.3.194
dlsw remote-peer 0 tcp 192.168.25.18
!
!
interface TokenRing0
ip address 10.64.3.195 255.255.255.240
ip ospf authentication-key mypasswo
ring-speed 16
!
interface TokenRing1
ip address 192.168.25.19 255.255.255.240
ring-speed 16
source-bridge 200 1 2
!
snasw cpname P390.BRACHIO
snasw dlus P390.P390SSCP
snasw port PVDLC vdlc 2 mac 4000.0000.1234
snasw link LVVLC port PVDLC rmac 4000.0000.0001
!
router ospf 1
log-adjacency-changes
network 0.0.0.0 255.255.255.255 area 0
!
ip classless
no ip http server
!
!
!
line con 0
exec-timeout 0 0
transport input none
line aux 0
line vty 0 4
login
!
end

```

### FEP ??? CIP Router Configuration

```

!
version 12.1
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
!
hostname FEP
!
boot system flash slot0:rsp-a3jsv-mz.121-7.bin
logging buffered 64000 debugging
!
!
!
microcode CIP flash slot0:cip27-17
microcode reload
!
source-bridge ring-group 60
dlsw local-peer peer-id 10.64.3.194
dlsw remote-peer 0 tcp 10.64.3.195
!
!
interface TokenRing0/0
ip address 10.64.3.194 255.255.255.240

```

```

ip nat inside
ip ospf authentication-key pass
no ip mroute-cache
ethernet-transit-oui 90-compatible
ring-speed 16
multiring all
source-bridge 100 1 60
source-bridge spanning
llc2 local-window 127
!
!
interface Channel5/0
no ip address
no keepalive
csna 0100 40
!
interface Channel5/1
no ip address
no keepalive
shutdown
!
interface Channel5/2
no keepalive
lan TokenRing 0
source-bridge 600 1 60
adapter 0 4000.0000.0001
!
!
router ospf 1
log-adjacency-changes
redistribute static
network 0.0.0.0 255.255.255.255 area 0
default-information originate
!
!
line con 0
exec-timeout 0 0
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password cisco
login
!

```

### Para ??? DSPU Router Configuration

```

!
version 12.0
service timestamps debug datetime msec
service timestamps log uptime
no service password-encryption
!
hostname para
!
enable secret 5 $1$py25$yYt4gnt.YlmsBH00wQW3G1
enable password parra
!
ip subnet-zero
!
source-bridge ring-group 300
dlsw local-peer peer-id 192.168.25.18
dlsw remote-peer 0 tcp 10.64.3.195
!
!

```

```

dspu vdlc 300 4000.0000.5678
dspu vdlc enable-host lsap 12
!
dspu host DPU4 xid-snd 01700004 rmac 4000.0000.1234 rsap 4 lsap 12
!
dspu vdlc start DPU4
!
!
interface TokenRing0
ip address 192.168.25.18 255.255.255.240
no ip directed-broadcast
ring-speed 16
source-bridge 200 1 300
source-bridge spanning
!
router ospf 1
network 0.0.0.0 255.255.255.255 area 0
!
ip classless
!
line con 0
exec-timeout 0 0
transport input none
line aux 0
line vty 0 4
password parra
login
!
end

```

### Mainframe ??? VTAM Configuration

#### XCA Major Node

```

XCAE40R VBUILD TYPE=XCA
*/ *
XPE40R      PORT CUADDR=E40,ADAPNO=0,SAPADDR=4,MEDIUM=RING,  -
DELAY=0,TIMER=30
*/ *
*/ * ----- XCAE40R PERIPHERAL NODES
*/ * -----
*/ *
XGE40R      GROUP DIAL=YES,CALL=IN,ANSWER=ON,ISTATUS=ACTIVE
XGRL00      LINE
XGRP00      PU
*/ *
XGRL01      LINE
XGRP01      PU
*/ *
XGRL02      LINE
XGRP02      PU
*/ *
XGRL03      LINE
XGRP03      PU
*/ *
XGRL04      LINE
XGRP04      PU
*/ *
XGRL05      LINE
XGRP05      PU
*/ *
XGRL06      LINE
XGRP06      PU

```

## Switched Major Node for SNASwitch Control Point

```
VBUILD TYPE=SWNET
*
*
BRACHPU PU ADDR=01, NOT USED X
DISCNT=NO, WHEN TO DISCONNECT X
ANS=CONTINUE, X
ISTATUS=ACTIVE, X
NETID=P390, X
CPCP=YES, X
CONNTYPE=APPN, X
CPNAME=BRACHIO, X
HPR=YES, X
PUTYPE=2
*
```

## Switched Major Node for PU2.0 Devices Connected via DLUR Pipe

```
VBUILD TYPE=SWNET, INCREASE # IF MORE PU X
MAXGRP=19, MAX NO OF PATH GROUPS X
MAXNO=19 MAX NO OF 'TEL' NOS
*
*
DPU4 PU ADDR=01, NOT USED X
DISCNT=NO, WHEN TO DISCONNECT X
IDBLK=017, ** MUST MATCH 'PU' CUST X
IDNUM=00004, MUST MATCH 'PU' CUST (LAST 5 OF TR ADDR!) X
IRETRY=YES, REPOLL ON IDLE DETECT T/O ? X
LOGAPPL=A06TSO, INITIAL LOGON X
MAXDATA=265, PIU SIZE (FIXED FOR DCA CS) X
MAXOUT=7, NO OF PIUS BEFORE RESPONSE ? X
MAXPATH=1, MAX NO OF 'DIALOUT' PATHS X
PASSLIM=7, MAX NO OF CONTIG PIUS SENT ? X
USSTAB=USSS, X
MODETAB=ISTINCLM, X
DLOGMOD=M2782, X
SSCPFM=USSSCS, X
PUTYPE=2
*
*
DLU42 LU LOCADDR=2
DLU43 LU LOCADDR=3
DLU44 LU LOCADDR=4
DLU45 LU LOCADDR=5
DLU46 LU LOCADDR=6
DLU47 LU LOCADDR=7
*
```

## 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.

These examples of **show** command output display status information for the routers in the sample configuration:

```
para# show dspu
```

```
dspu host DPU4 Vdlc PU STATUS Active
```

```

FRAMES RECEIVED 7 FRAMES SENT 7
LUs USED BY DSPU 0 LUs ACTIVE 0
LUs USED BY API 0 LUs ACTIVE 0
LUs ACTIVATED BY HOST BUT NOT USED 6

```

```
brachio# show snasw link
```

```

Number of links 2
SNA Links
Link Name      State      Port Name      Adjacent CP Name  Node Type      Sess  Sup
-----
1> @I000003    Active     PVDLC          P390.DPU4         LEN Node       7     No
2> LVDLC       Active     PVDLC          P390.P390SSCP    Network Node   2     Yes

```

```
brachio# show snasw dlus
```

```

Number of Dependent LU Servers 1
SNA Dependent LU Servers
DLUS Name      Default?  Backup?  Pipe State      PUs
-----
1> P390.P390SSCP  Yes       No       Active          1

```

```
brachio# show snasw pu
```

```

Number of DLUR PUs 1
SNA DLUR PUs
PU Name      PU ID      State      DLUS Name
-----
1> DPU4       01700004  Active     P390.P390SSCP

```

These examples of **display** command output show the status of the Virtual Telecommunications Access Method (VTAM):

```
D NET,ID=SNASW1,E
```

```

IST097I DISPLAY ACCEPTED
IST075I NAME = SNASW1, TYPE = SW SNA MAJ NODE 231
IST486I STATUS= ACTIV, DESIRED STATE= ACTIV
IST1656I VTAMTOPO = REPORT, NODE REPORTED - YES
IST084I NETWORK RESOURCES:
IST089I BRACHPU TYPE = PU_T2.1           , ACTIV--L--
IST1500I STATE TRACE = OFF
IST314I END

```

```
D NET,ID=XCAE40R,E
```

```

IST097I DISPLAY ACCEPTED
IST075I NAME = XCAE40R, TYPE = XCA MAJOR NODE 234
IST486I STATUS= ACTIV, DESIRED STATE= ACTIV
IST1021I MEDIUM=RING,ADAPNO= 0,CUA=0E40,SNA SAP= 4
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST1656I VTAMTOPO = REPORT, NODE REPORTED - YES
IST170I LINES:
IST232I XGRL00  ACTIV
IST232I XGRL01  ACTIV
IST232I XGRL02  ACTIV
IST232I XGRL03  ACTIV
IST232I XGRL04  ACTIV
IST232I XGRL05  ACTIV
IST232I XGRL06  ACTIV
IST314I END

```

```
D NET,ID=CISCOPU4,E
```

```
IST097I DISPLAY ACCEPTED
```

```
IST075I NAME = CISCOPU4, TYPE = SW SNA MAJ NODE 237
IST486I STATUS= ACTIV, DESIRED STATE= ACTIV
IST1656I VTAMTOPO = REPORT, NODE REPORTED - YES
IST084I NETWORK RESOURCES:
IST089I DPU4      TYPE = PU_T2.1      , ACTIV
IST089I DLU42    TYPE = LOGICAL UNIT  , ACTIV
IST089I DLU43    TYPE = LOGICAL UNIT  , ACTIV
IST089I DLU44    TYPE = LOGICAL UNIT  , ACTIV
IST089I DLU45    TYPE = LOGICAL UNIT  , ACTIV
IST089I DLU46    TYPE = LOGICAL UNIT  , ACTIV
IST089I DLU47    TYPE = LOGICAL UNIT  , ACTIV
IST314I END
```

## Troubleshoot

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

## Related Information

- [SNA Switching Services](#)
- [SNAsw \(SNA Switching Services\) Support Page](#)
- [Technology Support](#)
- [Product Support](#)
- [Technical Support – Cisco Systems](#)

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