

Configuración de DLSw+ sobre QLLC

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Introducción

En esta configuración, dos recursos X.25 diferentes (hemos utilizado dspu-host para simular los dispositivos finales en esta configuración). Para obtener más información sobre la unidad física descendente (DSPU), consulte estos documentos:

- [Configuración del Soporte del Punto de Servicio de SNA y DSPU](#)
- [Preguntas frecuentes sobre la unidad física descendente](#)

Estos dos dispositivos finales se comunican con diferentes adaptadores en el sistema central a través de X.25. Los recursos X.25 remotos se configuraron para diferentes direcciones de destino (en diferentes longitudes y direcciones). Cualquier llamada entrante cuya dirección de destino X.121 coincida con la "subdirección qlc dlsw" del router se envía a Data Link Switching Plus (DLSw+) (con ID.STN IND). Cuando DLSw+ recibe una consulta de tipo "Can You Reach" sobre una dirección MAC virtual en el conjunto, el código QLLC (Control de enlace lógico cualificado) intenta configurar un circuito virtual (VC) en la dirección X.121 que se asigna a la dirección MAC virtual especificada. Si se recibe una llamada entrante, QLLC envía un ID.STN.IND con una dirección MAC virtual del conjunto a DLSw+.

Prerequisites

Requirements

No hay requisitos específicos para este documento.

Componentes Utilizados

La información que contiene este documento se basa en las versiones de software y hardware.

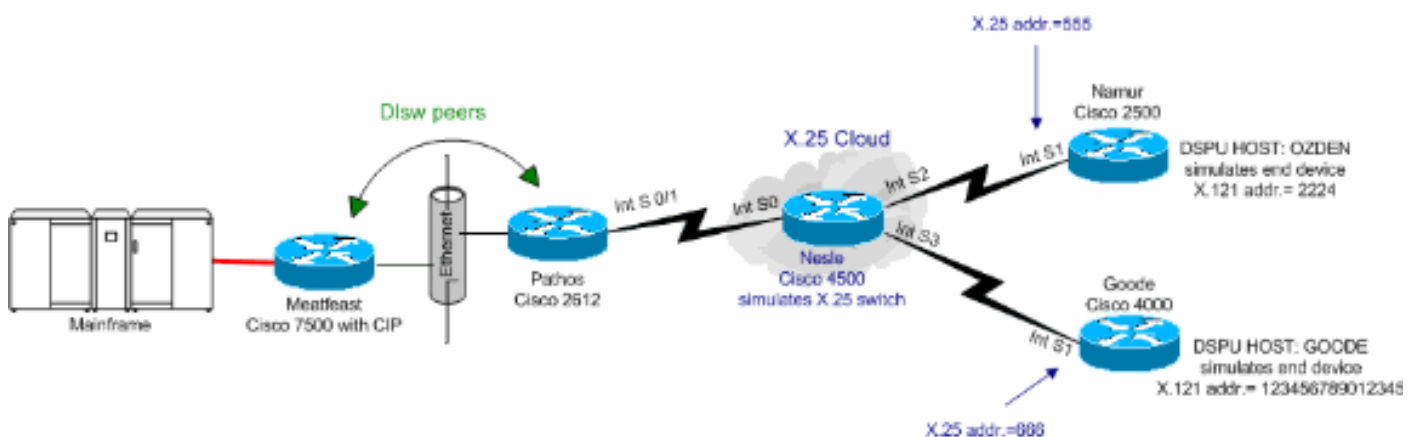
- Cisco IOS® Software Release 12.2(6a) se utilizó en Pathos (Cisco 2612)
- La versión 12.0(20) del software Cisco IOS se utilizó en Namur y Goode (Cisco 2500, Cisco 4000)
- Cisco IOS Software Release 12.1(7) se utilizó en Nesle (Cisco 4500)

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.

Convenciones

For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

Diagrama de topología



Configurar

En esta sección encontrará la información para configurar las funciones descritas en este documento.

Nota: Para encontrar información adicional sobre los comandos usados en este documento, utilice la [Command Lookup Tool](#) (sólo clientes registrados) .

Configuraciones

Las direcciones MAC del mainframe son las siguientes:

- 4000.7507.0000
- 4000.7507.ffff

Este documento usa las configuraciones detalladas aquí:

- [Cisco 7507 \(Fiesta de carne\)](#)
- [Cisco 2612 \(rutas\)](#)
- [Cisco 4500 \(Nesle\)](#)
- [Cisco 2500 \(Namur\)](#)
- [Cisco 4000 \(Goode\)](#)

Cisco 7507 (Fiesta de carne)

```
source-bridge ring-group 100
dlsw local-peer peer-id 10.48.64.75 promiscuous
!
interface Channel4/2
 ip address 10.48.64.225 255.255.255.240
 no keepalive
 lan TokenRing 0
  source-bridge 88 1 100
  adapter 0 4000.7507.0000
  adapter 1 4000.7507.ffff
```

Cisco 2612 (rutas)

```
!
source-bridge ring-group 200
dlsw local-peer peer-id 10.48.64.40
dlsw remote-peer 0 tcp 10.48.64.75
!
interface Ethernet0/0
 ip address 10.48.64.40 255.255.255.0
 half-duplex
!
interface Serial10/0
 no ip address
!
interface TokenRing0/0
 no ip address
 ring-speed 16
!
interface Serial10/1
 no ip address
 encapsulation x25
 x25 alias .*
!--- It is used against the destination !--- address of
a received call. x25 htc 10 x25 win 7 x25 wout 7 qllc
accept-all-calls qllc dlsw subaddress 123456789012345
vmacaddr 4000.3333.0000 2 partner 4000.7507.0000 qllc
dlsw subaddress 2224 vmacaddr 4000.2222.0000 2 partner
4000.7507.ffff ! ip default-gateway 10.48.64.1 ip
classless no ip http server ip pim bidir-enable ! !
dial-peer cor custom !
```

Cisco 4500 (Nesle)

```
!
x25 routing
!
!
!
interface Ethernet0
 ip address 10.48.64.34 255.255.255.0
 media-type 10BaseT
!
interface Ethernet1
 no ip address
 shutdown
 media-type 10BaseT
!
interface Ethernet2
 no ip address
```

```
media-type 10BaseT
!
interface Serial0
  no ip address
  encapsulation x25 dce
  clockrate 250000
!
interface Serial1
  no ip address
!
interface Serial2
  no ip address
  encapsulation x25 dce
  no ip mroute-cache
  clockrate 250000
!
interface Serial3
  no ip address
  encapsulation x25 dce
  clockrate 250000
!
interface TokenRing0
  no ip address
  ring-speed 16
!
ip default-gateway 10.48.64.1
ip classless
no ip http server
x25 route input-interface Serial2 interface Serial0
x25 route input-interface Serial3 interface Serial0
x25 route 555 interface Serial2
x25 route 666 interface Serial3
!
line con 0
  exec-timeout 0 0
line aux 0
  exec-timeout 0 0
line vty 0 4
  exec-timeout 0 0
  password 7 071836
  login
!
ntp clock-period 17179258
ntp server 10.48.64.100
end
```

Cisco 2500 (Namur)

```
hostname namur
!
logging buffered 150000 debugging
enable password 7 120E12
!
dspu host OZDEN xid-snd 00000000 x25 2224 ql1c 12
interface Serial1
!
interface Ethernet0
  no ip address
  no ip directed-broadcast
  shutdown
!
interface Serial0
  no ip address
```

```
no ip directed-broadcast
shutdown
!
interface Serial1
no ip address
no ip directed-broadcast
encapsulation x25
no ip mroute-cache
x25 address 555
x25 htc 10
x25 win 7
x25 wout 7
dspu enable-host ql1c 12
dspu start OZDEN
!
interface TokenRing0
no ip address
no ip directed-broadcast
shutdown
!
```

Cisco 4000 (Goode)

```
dspu host GOODE xid-snd 11132323 x25 123456789012345
ql1c 20 interface Serial1
!
interface Ethernet0
ip address 10.48.64.17 255.255.255.0
no ip directed-broadcast
media-type 10BaseT
!
interface Serial0
no ip address
no ip directed-broadcast
shutdown
!
interface Serial1
no ip address
no ip directed-broadcast
encapsulation x25
no ip mroute-cache
x25 address 666
x25 htc 10
x25 win 7
x25 wout 7
dspu enable-host ql1c 20
dspu start GOODE
!
```

Verificación

Esta sección proporciona información que puede utilizar para confirmar que la configuración está activa.

La herramienta [Output Interpreter](#) (sólo para clientes registrados) permite utilizar algunos comandos “show” y ver un análisis del resultado de estos comandos.

- **show llc2**—Muestra las conexiones LLC2 activas en el router.
- **show version**—Muestra información de la versión del software.

- **show dlsw peer**—Muestra información de conexión del par dlsw.
- **show dlsw circuit detail**—Muestra los detalles del circuito DLSW.
- **show qllc serial 0/1**—Muestra información sobre QLLC serial 0/1.
- **show x25 interface serial 0/1**—Muestra el estado de la línea y el protocolo en la interfaz serial X.25 0/1.
- **show x25 route**—Muestra la tabla de ruteo X.25.
- **show x25 interface serial 0**—Muestra el estado de la línea y el protocolo en la interfaz serial 0 X.25.
- **show dspu**—Muestra el estado de la función DSPU.
- **show x25 interface serial 1**—Muestra el estado de la línea y el protocolo en la interfaz serial X.25 1.

Festín de carne

```
#show llc2
....
Channel4/2 DTE: 4000.7507.ffff 4000.2222.0000 04 04
state NORMAL
  V(S)=1, V??)=1, Last N??)=1, Local window=7, Remote
Window=127
  akmax=3, n2=8,
  xid-retry timer      0/0      ack timer      0/1000
  p timer              0/1000   idle timer
5430/10000
  rej timer            0/3200   busy timer     0/9600
  adm timer            0/60000  llc1 timer     0/1000
  akdelay timer       0/100    txQ count      0/200
  RIF: 06B0.0581.0640
Channel4/2 DTE: 4000.7507.0000 4000.3333.0000 04 04
state NORMAL
  V(S)=6, V??)=6, Last N??)=6, Local window=7, Remote
Window=127
  akmax=3, n2=8,
  xid-retry timer      0/0      ack timer      0/1000
  p timer              0/1000   idle timer
5630/10000
  rej timer            0/3200   busy timer     0/9600
  adm timer            0/60000  llc1 timer     0/1000
  akdelay timer       0/100    txQ count      0/200
  RIF: 06B0.0581.0640
```

Pathos

```
pathos#show version
Cisco Internetwork Operating System Software
IOS (tm) C2600 Software (C2600-IS-M), Version 12.2(6a),
RELEASE SOFTWARE (fc1)
Copyright ??) 1986-2001 by cisco Systems, Inc.
Compiled Sat 01-Dec-01 22:30 by pwade
Image text-base: 0x80008088, data-base: 0x810616B4
pathos#show dlsw peer
Peers:                state      pkts_rx  pkts_tx  type
drops ckts TCP    uptime
TCP 10.48.64.75      CONNECT      118      91  conf
0    2    0 00:32:12
Total number of connected peers: 1
Total number of connections:    1
pathos#show dlsw circuit detail
Index          local addr(lsap)  remote addr(dsap)
state          uptime
```

```

234881048      4000.2222.0000(04)  4000.7507.ffff(04)
CONNECTED      00:29:50
      PCEP: 81C25730   UCEP: 81D88528
      Port:Se0/1      peer 10.48.64.75(2065)
      Flow-Control-Tx CW:20, Permitted:19; Rx CW:20,
Granted:39; Op: Repeat
      Congestion: Low(02), Flow Op: Half: 0/0 Reset
0/0
      RIF = --no rif--
      Bytes:          429/453      Info-frames:
1/1
      XID-frames:      5/4      UInfo-frames:
0/0
      HPR saps: local 0x0, remote 0x4
1426063385    4000.3333.0000(04)  4000.7507.0000(04)
CONNECTED      00:29:49
      PCEP: 81D081B4   UCEP: 81D108B0
      Port:Se0/1      peer 10.48.64.75(2065)
      Flow-Control-Tx CW:20, Permitted:34; Rx CW:20,
Granted:34; Op: Repeat
      Congestion: Low(02), Flow Op: Half: 0/0 Reset
0/0
      RIF = --no rif--
      Bytes:          554/513      Info-frames:
6/6
      XID-frames:      5/4      UInfo-frames:
0/0
      HPR saps: local 0x0, remote 0x4
Total number of circuits connected: 2
pathos#show qllc serial 0/1
Interface Serial0/1
  vc 2 66620
    Circuit State P4/D1, Logical Link State QLOpened
4000.3333.0000(04)->4000.7507.0000(04)
    0 packets held
  vc 1 55512
    Circuit State P4/D1, Logical Link State QLOpened
4000.2222.0000(04)->4000.7507.ffff(04)
    0 packets held
pathos#
pathos#show x25 interface serial 0/1
SVC 1, State: D1, Interface: Serial0/1
  Started 00:30:51, last input 00:30:50, output 00:30:50
  Connects 55512 <-->
  qllc 4000.2222.0000
  Window size input: 7, output: 7
  Packet size input: 128, output: 128
  PS: 0 PR: 7 ACK: 6 Remote PR: 0 RCNT: 1 RNR: no
  P/D state timeouts: 0 timer (secs): 0
  data bytes 463/441 packets 8/7 Resets 0/0 RNRs 0/0
REJs 0/0 INTs 0/0
SVC 2, State: D1, Interface: Serial0/1
  Started 00:30:51, last input 00:30:50, output 00:30:50
  Connects 66620 <-->
  qllc 4000.3333.0000
  Window size input: 7, output: 7
  Packet size input: 128, output: 128
  PS: 5 PR: 4 ACK: 2 Remote PR: 5 RCNT: 2 RNR: no
  P/D state timeouts: 0 timer (secs): 0
  data bytes 523/566 packets 13/12 Resets 0/0 RNRs 0/0
REJs 0/0 INTs 0/0
pathos#

```

```

nesle#show x25 route
# Match                               Substitute
Route to
 1 input-int Serial2
Serial0
 2 input-int Serial3
Serial0
 3 dest 555
Serial2
 4 dest 666
Serial3

nesle#show x25 interface serial 0
SVC 1, State: D1, Interface: Serial0
  Started 00:32:47, last input 00:32:46, output 00:32:46
  Connects 55512 <--> 2224 from Serial2 SVC 10
  Window size input: 2, output: 2
  Packet size input: 128, output: 128
  PS: 7 PR: 0 ACK: 0 Remote PR: 6 RCNT: 0 RNR: no
  P/D state timeouts: 0 timer (secs): 0
  data bytes 441/463 packets 7/8 Resets 0/0 RNRs 0/0
  REJs 0/0 INTs 0/0
SVC 2, State: D1, Interface: Serial0
  Started 00:32:47, last input 00:32:46, output 00:32:46
  Connects 66620 <--> 123456789012345 from Serial3 SVC
1024
  Window size input: 2, output: 2
  Packet size input: 128, output: 128
  PS: 4 PR: 5 ACK: 5 Remote PR: 2 RCNT: 0 RNR: no
  Window is closed
  P/D state timeouts: 0 timer (secs): 0
  data bytes 566/523 packets 12/13 Resets 0/0 RNRs 0/0
  REJs 0/0 INTs 0/0
nesle#show x25 interface serial 2
SVC 10, State: D1, Interface: Serial2
  Started 00:32:51, last input 00:32:50, output 00:32:50
  Connects 55512 <--> 2224 to Serial0 SVC 1
  Window size input: 2, output: 2
  Packet size input: 128, output: 128
  PS: 0 PR: 7 ACK: 6 Remote PR: 0 RCNT: 1 RNR: no
  P/D state timeouts: 0 timer (secs): 0
  data bytes 463/441 packets 8/7 Resets 0/0 RNRs 0/0
  REJs 0/0 INTs 0/0
nesle#show x25 interface serial 3
SVC 1024, State: D1, Interface: Serial3
  Started 00:32:53, last input 00:32:52, output 00:32:52
  Connects 66620 <--> 123456789012345 to Serial0 SVC 2
  Window size input: 2, output: 2
  Packet size input: 128, output: 128
  PS: 5 PR: 4 ACK: 2 Remote PR: 5 RCNT: 2 RNR: no
  P/D state timeouts: 0 timer (secs): 0
  data bytes 523/566 packets 13/12 Resets 0/0 RNRs 0/0
  REJs 0/0 INTs 0/0

```

Namur

```

namur#show dspu
dspu host OZDEN Serial1 (QLLC) PU STATUS Active
  FRAMES RECEIVED 8 FRAMES SENT 8
  LUs USED BY DSPU 0 LUs ACTIVE 0
  LUs USED BY API 0 LUs ACTIVE 0
  LUs ACTIVATED BY HOST BUT NOT USED 0

```



```
namur#show x25 interface serial 1
SVC 10, State: D1, Interface: Serial1
  Started 00:34:55, last input 00:34:54, output 00:34:54
  Connects 2224 <-->
  qllc
  Window size input: 7, output: 7
  Packet size input: 128, output: 128
  PS: 7 PR: 0 ACK: 0 Remote PR: 6 RCNT: 0 RNR: no
  P/D state timeouts: 0 timer (secs): 0
  data bytes 441/463 packets 7/8 Resets 0/0 RNRs 0/0
REJs 0/0 INTs 0/0
namur#
```

Goode

```
goode#show dspu
dspu host GOODE Serial1 (QLLC) PU STATUS Active
  FRAMES RECEIVED 18 FRAMES SENT 18
  LUs USED BY DSPU 0 LUs ACTIVE 0
  LUs USED BY API 0 LUs ACTIVE 0
  LUs ACTIVATED BY HOST BUT NOT USED 5

goode#show x25 interface serial 1
SVC 1024, State: D1, Interface: Serial1
  Started 00:41:25, last input 00:41:25, output 00:41:25
  Connects 123456789012345 <-->
  qllc
  Window size input: 2, output: 2
  Packet size input: 128, output: 128
  PS: 4 PR: 5 ACK: 5 Remote PR: 2 RCNT: 0 RNR: no
  Window is closed
  P/D state timeouts: 0 timer (secs): 0
  data bytes 566/523 packets 12/13 Resets 0/0 RNRs 0/0
REJs 0/0 INTs 0/0
goode#
```

[Troubleshoot](#)

Actualmente, no hay información específica de troubleshooting disponible para esta configuración.

[Información Relacionada](#)

- [Página de soporte de tecnología Data-Link Switching Plus \(DLSw+\)](#)
- [Soporte de Tecnología de IBM](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)