

在 QLLC 上配置 DLSw+

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简介

在此配置中，有两个不同的X.25资源（我们使用dspu-host来模拟此设置中的终端设备）。有关下游物理设备(DSPU)的详细信息，请参阅以下文档：

- [配置DSPU和SNA服务点支持](#)
- [下游物理组件常见问题](#)

这两个终端设备通过X.25与大型机站点中的不同适配器通信。远程X.25资源配置了不同的目的地址（不同长度和不同地址）。其X.121目的地址与路由器的“qllc dlsw子地址”匹配的任何传入呼叫都会被分派到增强型数据链路交换(DLSw+)（具有ID.STN IND）。当DLSw+收到有关池中虚拟MAC地址的“能否到达”查询时，限定逻辑链路控制(QLLC)代码会尝试将虚电路(VC)设置到X.121地址，该虚电路(VC)映射到指定的虚拟MAC地址。如果收到来电，QLLC会将ID.STN.IND和虚拟MAC地址从池发送到DLSw+。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于以下软件和硬件版本：

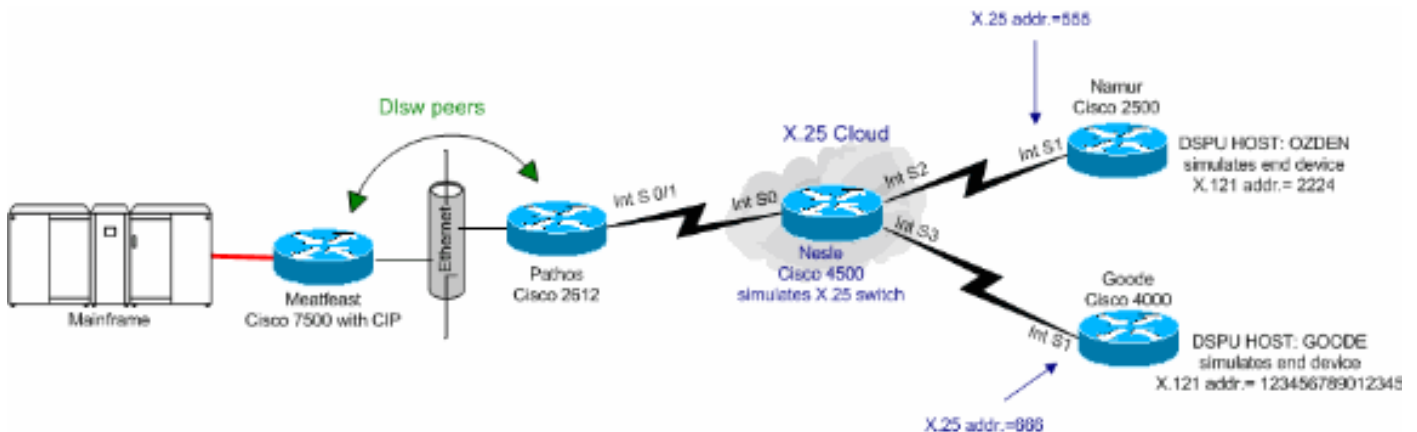
- Pathos(Cisco 2612)中使用Cisco IOS®软件版本12.2(6a)
- Namur & Goode(Cisco 2500、Cisco 4000)中使用了Cisco IOS软件版本12.0(20)
- Nesle(Cisco 4500)中使用了思科IOS软件版本12.1(7)

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

规则

有关文件规则的更多信息请参见“Cisco技术提示规则”。

拓扑图



配置

本部分提供有关如何配置本文档所述功能的信息。

注：要查找有关本文档中使用的命令的其他信息，请使用[命令查找工具](#)([仅注册客户](#))。

配置

大型机的MAC地址如下：

- 4000.7507.0000
- 4000.7507.ffff

本文档使用此处所示的配置：

- [Cisco 7507\(Meatfest\)](#)
- [思科2612\(Pathos\)](#)
- [Cisco 4500\(Nesle\)](#)
- [Cisco 2500\(Namur\)](#)
- [Cisco 4000\(Goode\)](#)

Cisco 7507(Meatfest)

```
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
```

思科2612(Pathos)

```
!
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 Serial0/0
 no ip address
!
interface TokenRing0/0
 no ip address
 ring-speed 16
!
interface Serial0/1
 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 Serial11
  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 qllc 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
qllc 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 Serial11
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 qllc 20
dspu start GOODE
!
```

验证

本节提供可用于确认配置处于活动状态的信息。

[命令输出解释程序工具（仅限注册用户）支持某些 show 命令](#)，使用此工具可以查看对 show 命令输出的分析。

- **show llc2** — 显示路由器中处于活动状态的LLC2连接。
- **show version** — 显示软件版本信息。
- **show dlsw peer** — 显示dlsw对等连接信息。
- **show dlsw circuit detail** — 显示DLSW电路的详细信息。
- **show qllc serial 0/1** — 显示有关QLLC serial 0/1的信息。
- **show x25 interface serial 0/1** — 显示X.25串行接口0/1上线路和协议的状态。
- **show x25 route** — 显示X.25路由表。
- **show x25 interface serial 0** — 显示X.25串行接口0上线路和协议的状态。
- **show dspu** — 显示DSPU功能的状态。
- **show x25 interface serial 1** — 显示X.25串行接口1上线路和协议的状态。

肉宴

```

#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

```

帕索斯

```

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#

```

内菜

```

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
```

那慕尔

```
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#
```

古德


```
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#
```

故障排除

目前没有针对此配置的故障排除信息。

相关信息

- [增强型数据链路交换\(DLSw+\)技术支持页](#)
- [IBM技术支持](#)
- [技术支持和文档 - Cisco Systems](#)