

目录

[简介](#)

[先决条件](#)

[要求](#)

[使用的组件](#)

[规则](#)

[主要接口](#)

[多点子接口](#)

[点对点子接口](#)

[相关信息](#)

简介

本文说明需要配置虚拟路径标识符(VPI)和虚拟信道标识符(VCI)在一个本地ATM接口为了顺利地ping它。

应用IP地址对ATM接口配置接口是路由的IP接口。为了使工作的ping，也请配置永久虚拟电路(PVC)，因此路由器通过发送ATM信元的哪个虚拟电路知道。没有VC，路由器报告封装故障，如果调试指令启用。由封装，路由器是指在ping信息包附近包裹的Layer2 (L2)报头。

当您ping本地接口时，ATM信元在物理电线实际上被派出。如果端到端电路是活跃的，ping信元到远程路由器末端传播然后反向循环。交替地，请沿路径配置硬件或软件环回某处，包括在本地接口。请使用loopback diagnostic命令配置软件环回。

因为ATM VC点到点，请考虑关于您配置VC接口的种类的下列问题：

- **主接口**？支持多个VC。每个VC需要任一匹配本地PVC值对远程IP地址的静态或动态映射。没有映射，路由器将汇报与启用的调试的错误消息。
- **多点子接口**？支持多个VC。每个VC需要任一匹配本地PVC值对远程IP地址的静态或动态映射。没有映射，路由器将汇报与启用的调试的错误消息。
- **点对点子接口**？支持单个VC。因为路由器根据定义假设有单个设备在VC的另一端，明确映射没有要求。反而，路由器转发数据包根据路由决策的VC。换句话说，路由表告诉路由器IP数据包的下一跳是VC的远程终端。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档不限于特定的软件和硬件版本。

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

主要 接口

下表说明ping的本地接口必要的配置命令根据是否点到点或多点。

请勿配置IP地址和在主要ATM接口的仅VPI/VCI

```
!interface ATM4/0 ip address 10.1.1.1 255.255.255.0 no
ip directed-broadcast no atm ilmi-keepalive!cs-7204-
15a#show atm vc          VCD /
Peak Avg/Min BurstInterface      Name          VPI   VCI
Type  Encaps   Kbps  Kbps  Cells Stscs-7204-15a#show
atm mapcs-7204-15a#ping 10.1.1.1 Type escape sequence to
abort.Sending 5, 100-byte ICMP Echos to 10.1.1.1,
timeout is 2 seconds: 4w2d: IP: s=10.1.1.1 (local),
d=10.1.1.1 (ATM4/0), len 100, sending4w2d: IP:
s=10.1.1.1 (local), d=10.1.1.1 (ATM4/0), len 100,
encapsulation failed!--- Router reports encapsulation
failure messages because there is no VPI/VCI !--- on
which to send the packet.
```

配置在主要ATM接口的PVC

```
interface ATM4/0 ip address 10.1.1.1 255.255.255.0 no ip
directed-broadcast no atm ilmi-keepalive pvc 1/32
encapsulation aal5snapcs-7204-15a#show atm vc
VCD /                               Peak Avg/Min
BurstInterface      Name          VPI   VCI   Type
Encaps   Kbps  Kbps  Cells Sts4/0      4
1        32   PVC   SNAP   149760         UPcs-
7204-15a#show atm mapcs-7204-15a#debug ip packetIP
packet debugging is oncs-7204-15a#ping 10.1.1.1 Type
escape sequence to abort.Sending 5, 100-byte ICMP Echos
to 10.1.1.1, timeout is 2 seconds: 4w2d: IP: s=10.1.1.1
(local), d=10.1.1.1 (ATM4/0), len 100, sending4w2d: IP:
s=10.1.1.1 (local), d=10.1.1.1 (ATM4/0), len 100,
encapsulation failed!--- Although this configures a PVC,
either a dynamic or !--- static mapping is still needed
between the L2 and Layer 3 (L3) addresses.
```

配置在PVC的一个静态映射语句

```
interface ATM4/0 ip address 10.1.1.1 255.255.255.0 no ip
directed-broadcast no atm ilmi-keepalive pvc 1/32
protocol ip 10.1.1.1 !--- This configures a static map
back to the local interface. !--- Normally, the map
statement points to the remote IP address. encapsulation
aal5snapcs-7204-15a#show atm map  Map list ATM4/0pvc4 :
PERMANENTip 10.1.1.1 maps to VC 4, VPI 1, VCI 32,
ATM4/0cs-7204-15a#ping 10.1.1.1Type escape sequence to
abort.Sending 5, 100-byte ICMP Echos to 10.1.1.1,
timeout is 2 seconds:5w1d: IP: s=10.1.1.1 (local),
d=10.1.1.1 (ATM4/0), len 100, sending.5w1d: IP:
s=10.1.1.1 (local), d=10.1.1.1 (ATM4/0), len 100,
sending.!--- The router now sends the packets. However,
since there is not a !--- remote end in the lab setup,
the pings fail.
```

配置在主接口的Loopback Diagnostic

```

interface ATM4/0 ip address 10.1.1.1 255.255.255.0 no ip
directed-broadcast loopback diagnostic !--- This
configures a software loopback with the loopback diag
command. no atm ilmi-keepalive pvc 1/32 protocol ip
10.1.1.1 encapsulation aal5snapcs-7204-15a#show atm map
Map list ATM4/0pvc4 : PERMANENTip 10.1.1.1 maps to VC 4,
VPI 1, VCI 32, ATM4/0cs-7204-15a#ping 10.1.1.1Type
escape sequence to abort.Sending 5, 100-byte ICMP Echos
to 10.1.1.1, timeout is 2 seconds:!!!!Success rate is
100 percent (5/5), round-trip min/avg/max = 1/2/4 mscs-
7204-15a#5w1d: IP: s=10.1.1.1 (local), d=10.1.1.1
(ATM4/0), len 100, sending5w1d: IP: s=10.1.1.1 (ATM4/0),
d=10.1.1.1 (ATM4/0), len 100, rcvd 35w1d: IP: s=10.1.1.1
(local), d=10.1.1.1 (ATM4/0), len 100, sending5w1d: IP:
s=10.1.1.1 (ATM4/0), d=10.1.1.1 (ATM4/0), len 100, rcvd
3!!--- The pings are successful. Note that the local
interface both !--- receives its own Internet Control
Message Protocol (ICMP) echo and echo-reply.

```

多点子接口

配置ATM多点接口

```

interface ATM4/0 no ip address no ip directed-broadcast
loopback diagnostic no atm ilmi-keepalive!interface
ATM4/0.1 multipoint ip address 10.1.1.1 255.255.255.0 no
ip directed-broadcast pvc 1/32 protocol ip 10.1.1.1
!--- This configures a static map or use inverse Address
Resolution Protocol (ARP) on a multipoint subinterface.
encapsulation aal5snapcs-7204-15a#show atm map Map list
ATM4/0.1pvc5 : PERMANENTip 10.1.1.1 maps to VC 5, VPI 1,
VCI 32, ATM4/0.1cs-7204-15a#ping 10.1.1.1Type escape
sequence to abort.Sending 5, 100-byte ICMP Echos to
10.1.1.1, timeout is 2 seconds:!!!!Success rate is 100
percent (5/5), round-trip min/avg/max = 1/2/4 mscs-7204-
15a#5w1d: IP: s=10.1.1.1 (local), d=10.1.1.1 (ATM4/0.1),
len 100, sending5w1d: IP: s=10.1.1.1 (ATM4/0.1),
d=10.1.1.1 (ATM4/0.1), len 100, rcvd 35w1d: IP:
s=10.1.1.1 (local), d=10.1.1.1 (ATM4/0.1), len 100,
sending5w1d: IP: s=10.1.1.1 (ATM4/0.1), d=10.1.1.1
(ATM4/0.1), len 100, rcvd 3

```

点对点子接口

点对点子接口

```

interface ATM4/0 no ip address no ip directed-broadcast
loopback diagnostic !--- Use the loopback diagnostic
command if !--- the PVC is not configured end to end. no
atm ilmi-keepalive!interface ATM4/0.2 point-to-point ip
address 10.1.1.1 255.255.255.0 no ip directed-broadcast
pvc 1/32 encapsulation aal5snap !--- Point-to-point
interfaces do not need a static mapping or inverse
ARP.cs-7204-15a#show atm mapcs-7204-15a#ping
10.1.1.1Type escape sequence to abort.Sending 5, 100-
byte ICMP Echos to 10.1.1.1, timeout is 2
seconds:!!!!Success rate is 100 percent (5/5), round-
trip min/avg/max = 1/2/4 mscs-7204-15a#00:11:03: IP:
s=10.1.1.1 (local), d=10.1.1.1 (ATM4/0.2), len 100,
sending00:11:03: IP: s=10.1.1.1 (ATM4/0.2), d=10.1.1.1

```

```
(ATM4/0.2), len 100, rcvd 300:11:03: IP: s=10.1.1.1  
(local), d=10.1.1.1 (ATM4/0.2), len 100,  
sending00:11:03: IP: s=10.1.1.1 (ATM4/0.2), d=10.1.1.1  
(ATM4/0.2), len 100, rcvd 3
```

[相关信息](#)

- [使用 LLC 封装的 ATM PVC 中的多个 路由协议](#)
- [ATM PVC 上的使用 VC 复用的多个路由协议](#)
- [使用桥接 RFC 1483 的基本 PVC 配置](#)
- [路由器与 Catalyst 交换机之间的桥接 PVC 连接](#)
- [ATM \(异步传输模式\)技术支持](#)
- [更多ATM的信息](#)
- [技术支持 - Cisco Systems](#)