

# Cisco 827 路由器配置常见问题

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## 简介

本文讨论关于Cisco 827路由器配置的多数常见问题。

**Cisco 827-4V前面板**

**Cisco 827-4V背板**

**Cisco 827前面板**

**Cisco 827背板**

**Q. 如何配置RFC1483桥接的Cisco 827 ？**

```
!  
no ip routing  
!--- Disable IP routing. ! interface Ethernet0 no ip address no ip directed-broadcast bridge-  
group 1 !--- Specify the bridge-group number the interface belongs to. ! interface ATM0 no ip  
address no ip directed-broadcast no atm ilmi-keepalive pvc 1/35 !--- VPI/VCI assigned to you by  
your provider. ! encapsulation aal5snap ! bridge-group 1 !--- Specify the bridge-group number  
the interface belongs to. ! bridge 1 protocol ieee !
```

## Q. 如何配置桥接与集成路由和桥接(IRB)的RFC1483的Cisco 827 ?

```
!  
bridge irb !--- Enable IRB. ! interface Ethernet0 ip address 192.168.1.1  
255.255.255.0 no ip directed-broadcast ! interface ATM0 no ip address no ip directed-broadcast  
no atm ilmi-keepalive bundle-enable ! interface ATM0.1 point-to-point no ip directed-broadcast  
pvc 1/35 !--- VPI/VCI assigned to you by your provider. ! encapsulation aal5snap ! bridge-group  
1 !--- Specify the bridge-group number the interface belongs to. ! interface BVI1 !--- A routed  
interface from the WAN bridge-group to the !--- nonbridged LAN interface. ! ip address  
192.168.2.1 255.255.255.0 no ip directed-broadcast ! ip route 0.0.0.0 0.0.0.0 192.168.2.254 !---  
Configure the default gateway. ! bridge 1 protocol ieee bridge 1 route ip !--- Enable IP routing  
to and from bridge-group 1. !
```

## Q. 当我的供应商为我配置可用的地址时，我如何配置Cisco 827，实现具有IRB和端口地址转换(PAT)功能的RFC1483桥接？

```
!  
bridge irb  
!--- Enable IRB. ! interface Ethernet0 ip address 192.168.1.1 255.255.255.0 no ip directed-  
broadcast ip nat inside !--- Establish the interface as the inside interface. ! interface ATM0  
no ip address no ip directed-broadcast no atm ilmi-keepalive bundle-enable ! interface ATM0.1  
point-to-point no ip directed-broadcast pvc 1/35 !--- VPI/VCI assigned to you by your provider.  
! encapsulation aal5snap ! bridge-group 1 !--- Specify bridge-group number the interface belongs  
to. ! interface BVI1 !--- A routed interface from the WAN bridge-group !--- to the nonbridged  
LAN interface. ! ip address 192.168.2.1 255.255.255.0 no ip directed-broadcast ip nat outside !--  
-- Establish the interface as the outside interface. ! ! ip nat inside source list 1 interface  
BVI1 overload !--- Enable dynamic translation of addresses permitted by the !--- access-list to  
the address specified in the BVI interface. ! ip route 0.0.0.0 0.0.0.0 192.168.2.254 !---  
Configure the default gateway. ! access-list 1 permit 192.168.1.0 0.0.0.255 !--- Define a  
standard access-list permitting addresses that !--- need translation. ! bridge 1 protocol ieee  
bridge 1 route ip !--- Enable IP routing to and from bridge-group 1. !
```

## Q. 当我的供应商为我配置一组可用的地址时，我如何配置Cisco 827，实现具有IRB和网络地址转换(NAT)功能的RFC1483桥接？

```
!  
bridge irb !--- Enable IRB. ! interface Ethernet0 ip address 192.168.1.1  
255.255.255.0 no ip directed-broadcast ip nat inside !--- Establish the interface as the inside  
interface. ! interface ATM0 no ip address no ip directed-broadcast no atm ilmi-keepalive bundle-  
enable ! interface ATM0.1 point-to-point no ip directed-broadcast pvc 1/35 !--- VPI/VCI assigned  
to you by your provider. ! encapsulation aal5snap ! bridge-group 1 !--- Specify bridge-group  
number the interface belongs to. ! interface BVI1 !--- A routed interface from the WAN bridge-  
group to the !--- nonbridged LAN interface. ! ip address 192.168.2.1 255.255.255.0 no ip  
directed-broadcast ip nat outside !--- Establish the interface as the outside interface. ! ip  
nat pool POOL-A 192.168.2.2 192.168.2.10 netmask 255.255.255.0 !--- Create a pool of global IP  
addresses for NAT. ! ip nat inside source list 1 pool POOL-A overload !--- Enable dynamic  
translation of addresses permitted by the !--- access-list to one of the addresses specified in  
the pool. ! ip route 0.0.0.0 0.0.0.0 192.168.2.254 !--- Configure the default gateway. ! access-  
list 1 permit 192.168.1.0 0.0.0.255 !--- Define a standard access-list permitting addresses that  
!--- need translation. ! bridge 1 protocol ieee bridge 1 route ip !--- Enable IP routing to and  
from bridge-group 1. !
```

## Q. 如何配置RFC1483路由的Cisco 827 ?

```
!
```

```

interface Ethernet0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
!
interface ATM0
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
 bundle-enable
!
interface ATM0.1 point-to-point
 ip address 192.168.2.1 255.255.255.0
 pvc 1/35
 !--- VPI/VCI assigned to you by your provider. ! protocol ip 192.168.2.2 broadcast !--- Set the
protocol broadcast for the IP address. ! encapsulation aal5snap !! ip route 0.0.0.0 0.0.0.0
192.168.2.2 !--- Configure the default gateway. !

```

**Q. 当我的供应商为我配置可用的地址时，我如何配置Cisco 827，实现具有PAT功能的RFC1483路由？**

```

!
interface Ethernet0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
 ip nat inside
 !--- Establish the interface as the inside interface. ! interface ATM0 no ip address no ip
directed-broadcast no atm ilmi-keepalive bundle-enable ! interface ATM0.1 point-to-point ip
address 192.168.2.1 255.255.255.0 ip nat outside !--- Establish the interface as the outside
interface. ! pvc 1/35 !--- VPI/VCI assigned to you by your provider. ! protocol ip 192.168.2.2
broadcast !--- Set the protocol broadcast for the IP address. ! encapsulation aal5snap !! ip
nat inside source list 1 interface ATM0.1 overload !--- Enable the dynamic translation of
addresses permitted by the !--- access-list to the address specified in the ATM interface. ! ip
route 0.0.0.0 0.0.0.0 192.168.2.2 !--- Configure the default gateway. ! access-list 1 permit
192.168.1.0 0.0.0.255 !--- Define a standard access-list permitting addresses that !--- need
translation. !

```

**Q. 当我的供应商为我配置一组可用的地址时，我如何配置Cisco 827，实现具有NAT功能的RFC1483路由？**

```

!
interface Ethernet0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
 ip nat inside
 !--- Establish the interface as the inside interface. ! interface ATM0 no ip address no ip
directed-broadcast no atm ilmi-keepalive bundle-enable ! interface ATM0.1 point-to-point ip
address 192.168.2.1 255.255.255.0 ip nat outside !--- Establish the interface as the outside
interface. ! pvc 1/35 !--- VPI/VCI assigned to you by your provider. protocol ip 192.168.2.2
broadcast !--- Set the protocol broadcast for the IP address. ! encapsulation aal5snap !! ip
nat pool POOL-A 192.168.2.2 192.168.2.10 netmask 255.255.255.0 !--- Create a pool of global IP
addresses for NAT. ! ip nat inside source list 1 pool POOL-A overload !--- Enable dynamic
translation of addresses permitted by !--- the access-list to one of the addresses specified in
the pool. ! ip route 0.0.0.0 0.0.0.0 192.168.2.2 !--- Configure the default gateway. ! access-
list 1 permit 192.168.1.0 0.0.0.255 !--- Define a standard access-list permitting addresses that
!--- need translation. !

```

**Q. 如何配置PPP over ATM的(PPPoA) Cisco 827与互联网协议控制协议(IPCP)？**

```

!
interface Ethernet0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
!

```

```

interface ATM0
  no ip address
  no ip directed-broadcast
  no atm ilmi-keepalive
  bundle-enable
!
interface ATM0.1 point-to-point
  no ip directed-broadcast
  pvc 1/35
  !--- VPI/VCI assigned to you by your provider. ! encapsulation aal5mux ppp dialer !--- Specify
the encapsulation type for the PVC to be !--- aal5mux (PPP) and point back to the dialer
interface. ! dialer pool-member 1 !--- Specify a dialer pool-member. ! ! interface Dialer1 ip
address negotiated !--- Configure a negotiated IP address. ! no ip directed-broadcast
encapsulation ppp dialer pool 1 !--- Specify which dialer pool number you are using. ! ip route
0.0.0.0 0.0.0.0 Dialer1 !--- Configure the default gateway. !

```

## Q. 如何配置Cisco 827，实现Easy IP（Phase I），同时支持PAT和PPP/IPCP？

```

!
interface Ethernet0
  ip address 192.168.1.1 255.255.255.0
  no ip directed-broadcast
  ip nat inside
  !--- Establish the interface as the inside interface. ! interface ATM0 no ip address no ip
directed-broadcast no atm ilmi-keepalive bundle-enable ! interface ATM0.1 point-to-point no ip
directed-broadcast pvc 1/35 !--- VPI/VCI assigned to you by your provider. ! encapsulation
aal5mux ppp dialer !--- Specify the encapsulation type for the PVC to be !--- aal5mux (PPP) and
point back to the dialer interface. ! dialer pool-member 1 !--- Specify a dialer pool-member. !
! interface Dialer1 ip address negotiated !--- Configure a negotiated IP address. ! no ip
directed-broadcast ip nat outside !--- Establish the interface as the outside interface. !
encapsulation ppp dialer pool 1 !--- Specify which dialer pool number you are using. ! ip nat
inside source list 1 interface Dialer1 overload !--- Enable dynamic translation of addresses
permitted by the !--- access-list to the address specified in the Dialer interface. ! ip route
0.0.0.0 0.0.0.0 Dialer1 !--- Configure the default gateway. ! ! access-list 1 permit 192.168.1.0
0.0.0.255 !--- Define a standard access-list permitting addresses that !--- need translation. !

```

## Q. 我该如何为Easy IP（第2阶段）将Cisco 827配置为DHCP服务器呢？

```

!
ip dhcp pool POOL-DHCP
  network 192.168.1.0 255.255.255.0
  !--- Specify a range of IP addresses that can be assigned to !--- the DHCP clients. ! domain-
name cisco.com !--- Configure the domain name. ! dns-server 192.168.3.1 !--- Configure the DNS
server. ! default-router 192.168.1.1 !--- Designate the router as the default router and specify
!--- an IP address. ! ! interface Ethernet0 ip address 192.168.1.1 255.255.255.0 no ip directed-
broadcast ! interface ATM0 no ip address no ip directed-broadcast no atm ilmi-keepalive bundle-
enable ! interface ATM0.1 point-to-point no ip directed-broadcast pvc 1/35 !--- VPI/VCI assigned
to you by your provider. ! encapsulation aal5mux ppp dialer !--- Specify the encapsulation type
for the PVC to be !--- aal5mux (PPP) and point back to the dialer interface. ! dialer pool-
member 1 ### specify a dialer pool-member ! ! interface Dialer1 ip address negotiated !---
Configure a negotiated IP address. ! no ip directed-broadcast encapsulation ppp dialer pool 1 !-
-- Specify which dialer pool number you are using. ! ! ip route 0.0.0.0 0.0.0.0 Dialer1 !---
Configure the default gateway. !

```

## Q. 我该如何为Easy IP（第2阶段）将Cisco 827配置为DHCP中继呢？

```

!
interface Ethernet0
  ip address 192.168.1.1 255.255.255.0
  ip helper-address 192.168.4.1
  !--- Forward default UDP broadcasts including !--- IP configuration requests to the DHCP
server. ! no ip directed-broadcast ! interface ATM0 no ip address no ip directed-broadcast no
atm ilmi-keepalive bundle-enable ! interface ATM0.1 point-to-point no ip directed-broadcast pvc

```

```

1/35 !--- VPI/VCI assigned to you by your provider. ! encapsulation aal5mux ppp dialer !---
Specify the encapsulation type for the PVC to be !--- aal5mux (PPP) and point back to the dialer
interface. ! dialer pool-member 1 !--- Specify a dialer pool-member. ! ! interface Dialer1 ip
address negotiated !--- Configure a negotiated IP address. ! no ip directed-broadcast
encapsulation ppp dialer pool 1 !--- Specify which dialer pool number you are using. ! ! ip
route 0.0.0.0 0.0.0.0 Dialer1 !--- Configure the default gateway. !

```

## Q. 如何配置Cisco 827是与PAT的DHCP客户端？

```

!
bridge irb
!
interface Ethernet0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
 ip nat inside
 !--- Establish the interface as the inside interface. ! interface ATM0 no ip address no ip
directed-broadcast no atm ilmi-keepalive bundle-enable ! interface ATM0.1 point-to-point no ip
directed-broadcast pvc 1/35 !--- VPI/VCI assigned to you by your provider. ! encapsulation
aal5snap ! bridge-group 1 !--- Specify bridge-group number the interface belongs to. ! interface
BV11 ip address dhcp client-id Ethernet0 !--- Use the MAC address of the Ethernet interface as
!--- the client ID when the DHCP request is sent. ! no ip directed-broadcast ip nat outside !---
Establish the interface as the outside interface. ! ! ip nat inside source list 1 interface BV11
overload !--- Enable the dynamic translation of addresses permitted by !--- the access-list to
the address specified in the BVI interface. ! ip route 0.0.0.0 0.0.0.0 BV11 !--- Configure the
default gateway. ! ! access-list 1 permit 192.168.1.0 0.0.0.255 !--- Define a standard access-
list permitting !--- addresses that need translation. ! bridge 1 protocol ieee bridge 1 route ip
!--- Enable IP routing to and from bridge-group 1. !

```

## Q. 如何配置PPP over Ethernet的(PPPoE) Cisco 827 ？

A. 请参考[RFC1483桥接的配置](#)。

## Q. 能否配置Cisco 827作为PPPoE客户端？

A. 是，但是Cisco IOS软件版本12.1(3)XG或者以后要求。请参阅[配置Cisco 827路由器作为有NAT的—PPPoE客户端](#)。

## Q. 如何配置基本VoIP的Cisco 827-4V ？

```

!
dial-peer voice 1 pots
 destination-pattern 1001
 !--- Define the telephone number associated with the port. ! port 1 !--- Specify the port
number. ! ! dial-peer voice 10 voip destination-pattern 2... !--- Define the destination
telephone number. ! session target ipv4:192.168.2.8 !--- Specify a destination IP address. !
codec g711ulaw !--- Specify a codec if you are not !--- using the default codec of g.729. !

```

## Q. 如何配置语音的服务质量(QoS) ？

A. Cisco IOS提供优先级队列的单个PVC环境(使用CBWFQ)为语音和分段和交叉：

```

!
class-map VOICE!--- Configure a class for voice. ! match access-group 101 !--- Associate the
class with the access-list. ! ! policy-map POLICY !--- Configure a policy map. ! class VOICE !--
- Specify the class for queuing. ! priority 480 !--- Specify strict priority for voice traffic.
! ! interface ATM0 mtu 300 !--- Decrease MTU of ATM interface so that large !--- IP data packets
get fragmented. ! ip address 192.168.2.1 255.255.255.0 no ip directed-broadcast no atm ilmi-
keepalive pvc 1/35 !--- VPI/VCI assigned to you by your provider. ! service-policy out POLICY !-
-- Associate policy map to PVC. ! vbr-rt 640 640 10 !--- Specify the service class. !

```

```
encapsulation aal5snap ! bundle-enable ! dial-peer voice 1 pots destination-pattern 1001 !---
Define the telephone number associated with the port. ! port 1 !--- Specify the port number. ! !
dial-peer voice 10 voip destination-pattern 2... !--- Define the destination telephone number. !
session target ipv4:192.168.2.8 !--- Specify a destination IP address. ! ip precedence 5 !---
Configure IP precedence 5 for voice packets. ! ! access-list 101 permit ip any any precedence
critical !--- Configure access-list to match voice packets. !
```

语音和数据在不同的子网的多种PVC环境：

```
!
interface ATM0
  no ip address
  no ip directed-broadcast
  no atm ilmi-keepalive
  bundle-enable
!
interface ATM0.1 point-to-point
  ip address 192.168.2.1 255.255.255.0
  no ip directed-broadcast
  pvc 1/35
  !--- Voice PVC. ! protocol ip 192.168.2.2 broadcast !--- Set the protocol broadcast for the IP
address. ! vbr-rt 424 424 5 !--- Specify the service class. ! encapsulation aal5snap ! !
interface ATM0.2 point-to-point ip address 192.168.3.1 255.255.255.0 no ip directed-broadcast
pvc 1/36 !--- Data PVC. ! protocol ip 192.168.3.2 broadcast !--- Set the protocol broadcast for
the IP address. ! encapsulation aal5snap ! ! dial-peer voice 1 pots destination-pattern 1001 !--
- Define the telephone number associated with the port. ! port 1 !--- Specify the port number. !
! dial-peer voice 10 voip destination-pattern 2... !--- Define the destination telephone number.
! session target ipv4:192.168.2.8 !--- Specify a destination IP address. ! !
```

语音和数据在与虚拟电路捆绑的相同子网的多种PVC环境：

```
!
interface ATM0
  ip address 192.168.2.1 255.255.255.0
  no ip directed-broadcast
  no atm ilmi-keepalive
  bundle-enable
  bundle TEST
  !--- Specify a bundle name. ! protocol ip 192.168.2.2 broadcast encapsulation aal5snap pvc-
bundle data 1/36 !--- Create a PVC for the data bundle. ! precedence other !--- Set the IP
precedence level other to the data bundle. ! pvc-bundle voice 1/35 !--- Create a PVC for the
voice bundle. ! vbr-rt 424 424 5 !--- Set the service class for the voice bundle. ! precedence 5
!--- Set the IP precedence level critical to the voice bundle. ! ! ! dial-peer voice 1 pots
destination-pattern 1001 !--- Define the telephone number associated with the port. ! port 1 !--
- Specify the port number. ! ! dial-peer voice 10 voip destination-pattern 2... !--- Define the
destination telephone number. ! session target ipv4:192.168.2.8 !--- Specify a destination IP
address. ! ip precedence 5 !--- Set IP precedence to critical for voice traffic. ! !
```

## Q. 如何配置Cisco 827-4V向H.323网守登记？

```
!
interface ATM0
  h323-gateway voip interface
  !--- Identifies this interface as a VoIP gateway interface. ! h323-gateway voip id GATEKEEPER
ipaddr 192.168.1.2 1719 !--- Defines the name and location of the gatekeeper !--- for this
gateway. ! h323-gateway voip h323-id GATEWAY !--- Defines the H.323 name of the gateway,
identifying !--- this gateway to its associated gatekeeper. ! ! dial-peer voice 1 pots
destination-pattern 1001 !--- Define the telephone number associated with the port. ! port 1 !--
- Specify the port number. ! dial-peer voice 10 voip destination-pattern +.T !--- Define the
destination number pattern. ! session target ras !--- Specify a destination to be RAS. ! gateway
!
```

## Q. 如何配置在Cisco 827 ADSL接口的线路编码？

A. 登录到Cisco 827，并从激活模式发出Cisco IOS dsl operating-mode xxx 命令，其中xxx是您的线路编码类型。

**注意：**默认情况下Cisco 827 ADSL接口处在自动发现模式，并将自动发现线路编码，以便在连接到您的网络服务提供商(ISP)时使用。

以下示例显示设置线路编码对G.LITE。

```
Router>enable Router# Router#configure terminal Enter configuration commands, one per line. End with CNTL/Z. Router(config)#interface atm 0 Router(config-if)#dsl operating-mode ? ansi-dmt ANSI full rate mode auto auto detect mode itu-dmt ITU full rate mode splitterless G.lite mode Router(config-if)#dsl operating-mode splitterless Router(config-if)# exit Router(config)# exit Router#write mem Building configuration... [OK] Router#
```

以下配置示例在其以后显示Cisco 827配置为G.LITE。

```
Router#show running Building configuration... Current configuration : 1198 bytes ! version 12.2 interface ATM0 no ip address dsl operating-mode splitterless !--- This is G.LITE mode. ! end
```

检验Cisco 827 ADSL接口是否处于G.LITE模式的另一种方式是发出Cisco IOS命令show controller atm 0。在输出中您应该看到(G.Lite)。例如：

```
Router#show controller atm 0 .Snip .Snip .Snip 15 Real bd=0x80BFD628 Status=0x0 Buf=0x1F0222E Len=14 Own=0 16 Real bd=0x80BFD634 Status=0x2000 Buf=0x1F0222E Len=14 Own=0 ATU-R (DS) ATU-C (US) Modem Status: Showtime (DMTDSL_SHOWTIME) DSL Mode: ITU G.992.2 (G.Lite) !--- G.LITE mode is indicated here. ITU STD NUM: 0x01 0x1 .Snip .Snip end
```

## Q. 如何配置NAT和PAT支持内部网络服务器？

A. 请参阅[配置网络地址转换和静态端口地址转换支持内部网络服务器](#)。

## 相关信息

- [Cisco 827 路由器常见问题](#)
- [Cisco 826, 827, 828, 831, 836和837和SOHO76, 77, 78, 91, 96和97路由器软件配置指南](#)
- [Cisco DSL 路由器配置与故障排除指南](#)
- [DSL技术支持](#)
- [路由器产品支持](#)
- [技术支持和文档 - Cisco Systems](#)