

实验8：PPPoE服务器的配置和应用

实验要求

1. PPPoE服务器配置和应用实验在虚拟仿真环境下完成，要求如下：
- (1) 仿真有线局域网接入互联网的场景，正确配置PPPoE服务器的认证协议、地址池、虚拟模板和物理接口，使内网用户经认证后才能正常访问外部互联网。

(2) 仿真家庭网络中，无线和有线终端（主机、智能电话等）连入小型路由器，由小型路由器统一接入互联网服务运营商PPPoE服务器的场景。对小型路由器和PPPoE服务器进行设置，使家庭网络中的用户经认证后才能正常访问外部互联网。

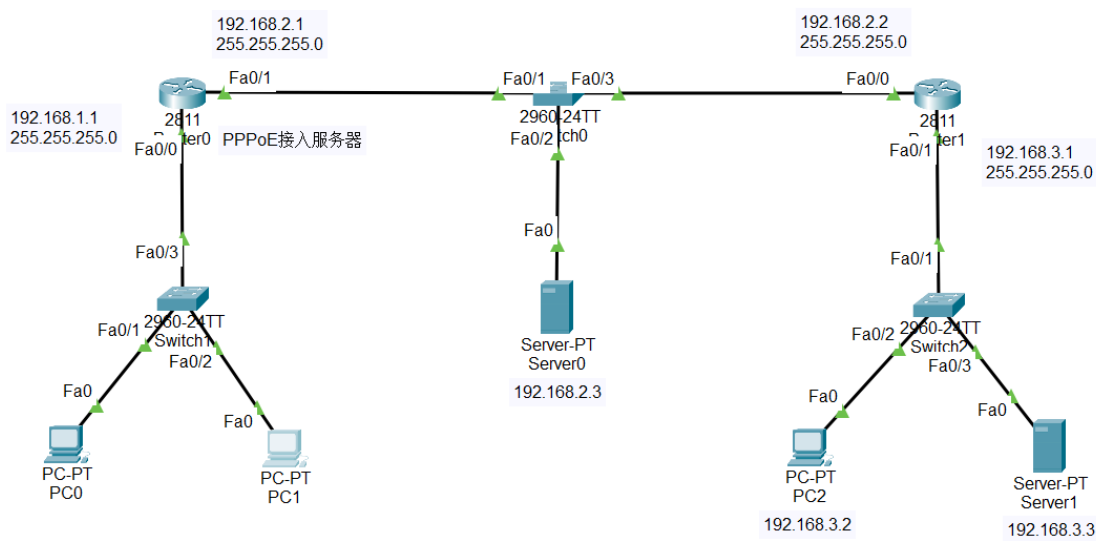
实验环境

操作系统：Windows10

软件版本：Cisco Packet Tracer_820_windows_64bits

实验内容

网络拓扑结构如下：



配置路由器的本地AAA认证

```
Router(config)#aaa new-model
Router(config)#aaa authentication ppp myPPPoE group radius
Router(config)#radius-server host 192.168.2.3 auth-port 1645 key radius123
```

配置接入用户的用户名与密码

Server0

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Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

AAA

Service

☒ On
☐ Off

Radius Port

1645

Network Configuration

Client Name

Router

Client IP

192.168.2.1

Secret

radius123

ServerType

Radius

	ent Nar	Client IF	erver Ty	Key	
1	Router	192.1...	Radius	radius...	<div>Add</div> <div>Save</div> <div>Remove</div>

User Setup

Username

Password

	Username	Password	
1	alice	alice123	<div>Add</div> <div>Save</div> <div>Remove</div>
2	bob	bob123	

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建立本地地址池

```
Router(config)#ip local pool myPool 192.168.1.100 192.168.1.200
```

配置虚拟接口模板

```
Router(config)#interface virtual-template 1
Router(config-if)#ip unnumbered fa0/0
Router(config-if)#peer default ip address pool myPool
Router(config-if)#ppp authentication chap myPPPoE
```

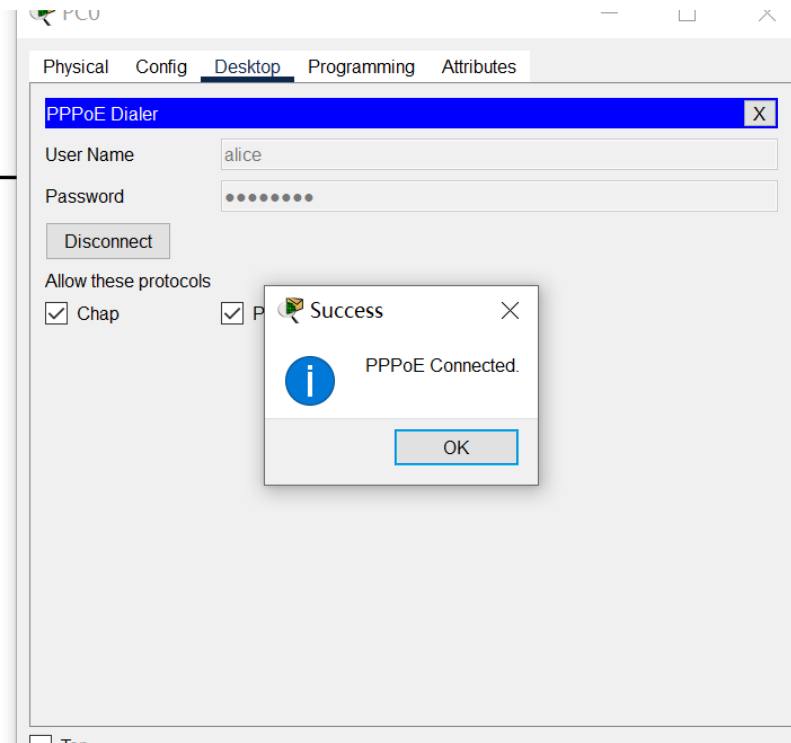
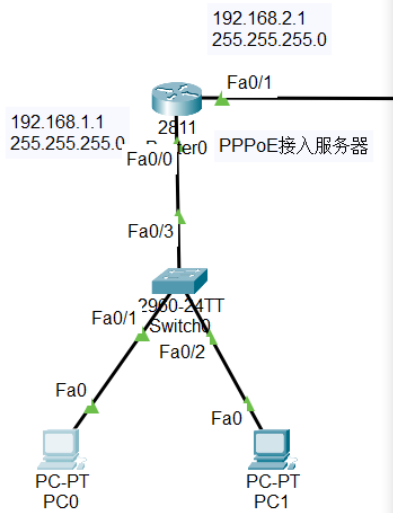
创建BBA组

```
Router(config)#bba-group pppoe myBBAGroup
Router(config-bba)#virtual-template 1
```

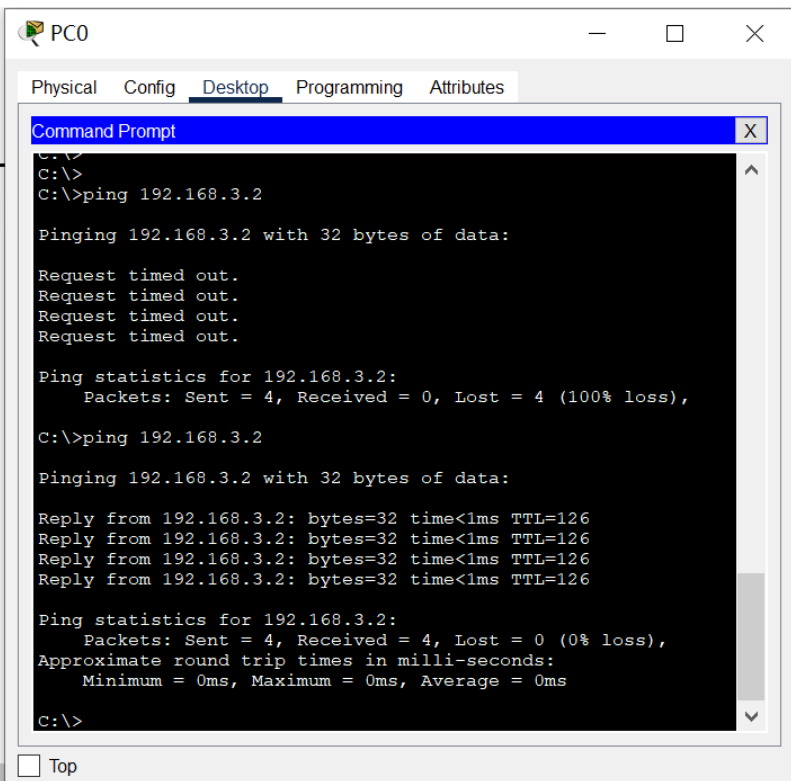
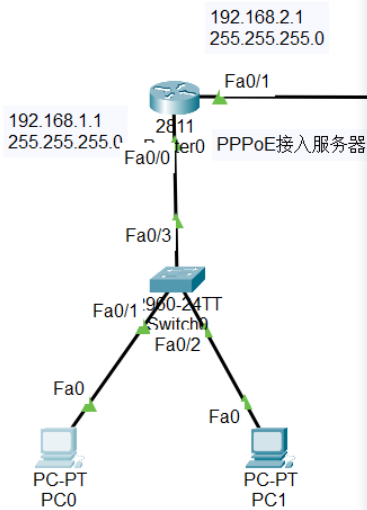
配置物理接口

```
Router(config)#interface fa0/0
Router(config-if)#pppoe enable group myBBAGroup
```

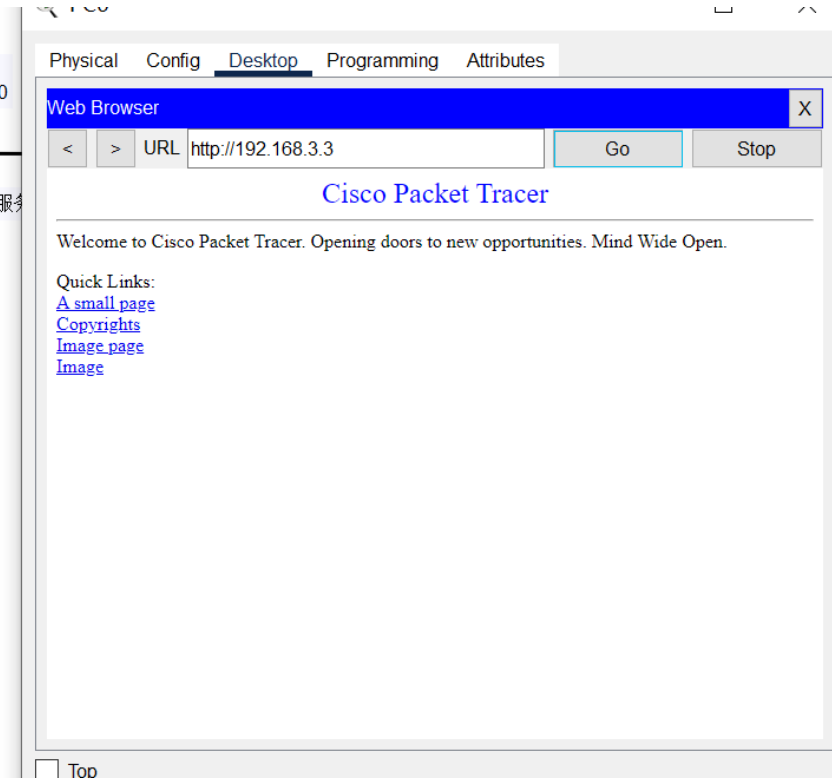
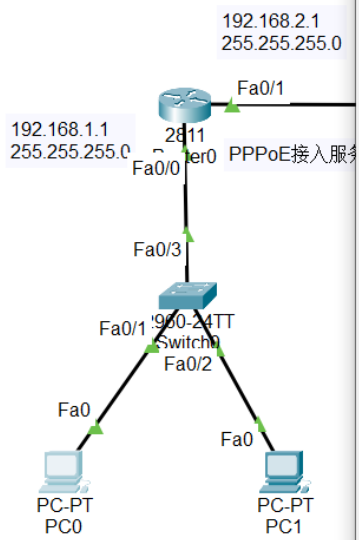
配置成功，使用PC0接入PPPoE服务：



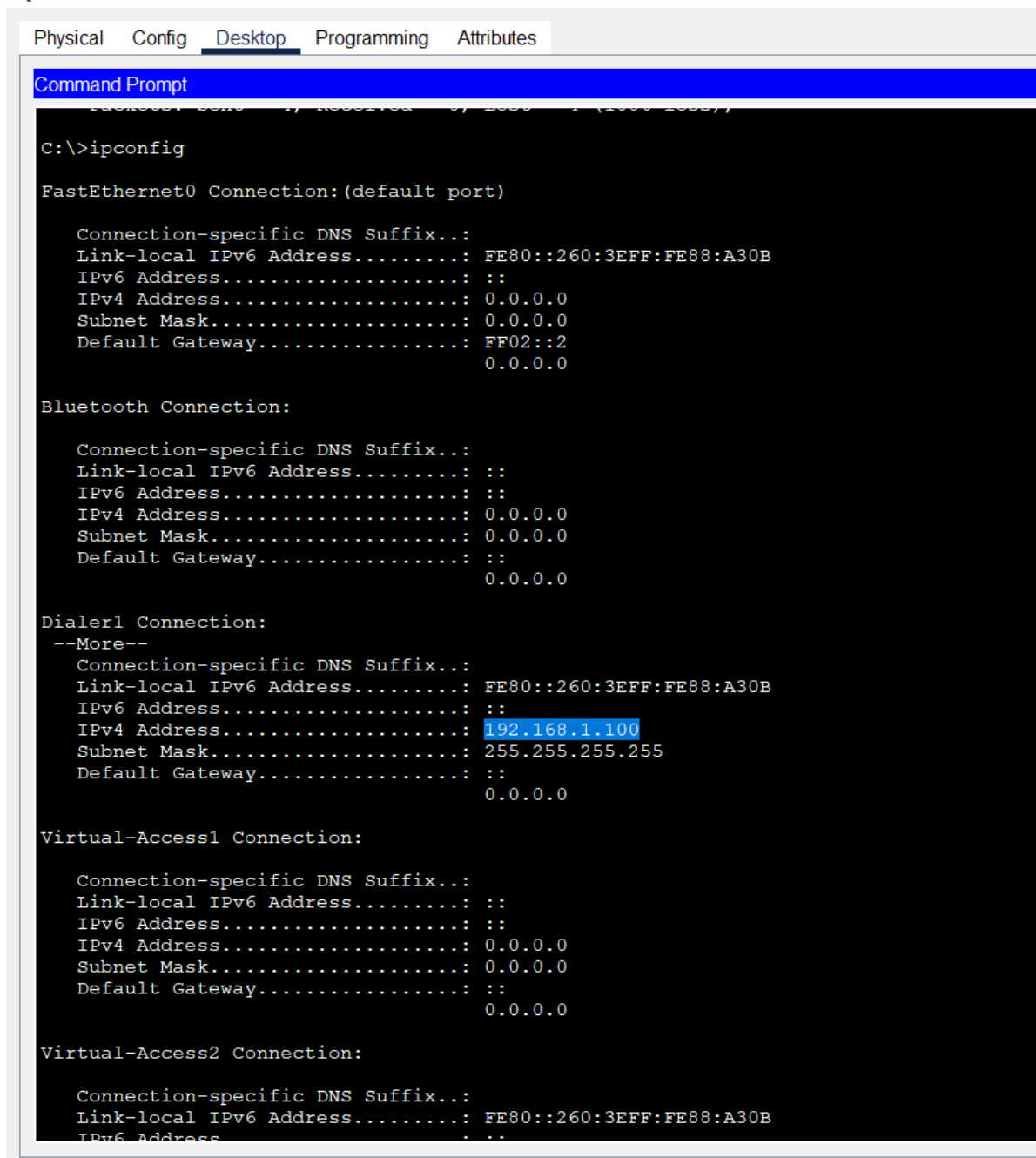
使用PC0 ping PC2:



PC0浏览服务器:



ipconfig查看分配的IP地址:



The screenshot shows a PC0 interface with a menu bar containing 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The window shows the output of the 'ipconfig' command, detailing network settings for 'FastEthernet0', 'Bluetooth', 'Dialer1', 'Virtual-Access1', and 'Virtual-Access2'. The 'Dialer1' section shows an IPv4 address of 192.168.1.100, which is highlighted in blue. The 'Virtual-Access1' and 'Virtual-Access2' sections show default settings for IPv4 and IPv6 addresses and subnets.

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::260:3EFF:FE88:A30B
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: FF02::2
                        0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                        0.0.0.0

Dialer1 Connection:
--More--
    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::260:3EFF:FE88:A30B
    IPv6 Address.....: ::
    IPv4 Address.....: 192.168.1.100
    Subnet Mask.....: 255.255.255.255
    Default Gateway.....: ::
                        0.0.0.0

Virtual-Access1 Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                        0.0.0.0

Virtual-Access2 Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::260:3EFF:FE88:A30B
    IPv6 Address.....: ::
```

实验验证成功。