实验8：PPPoE服务器的配置和应用

实验要求

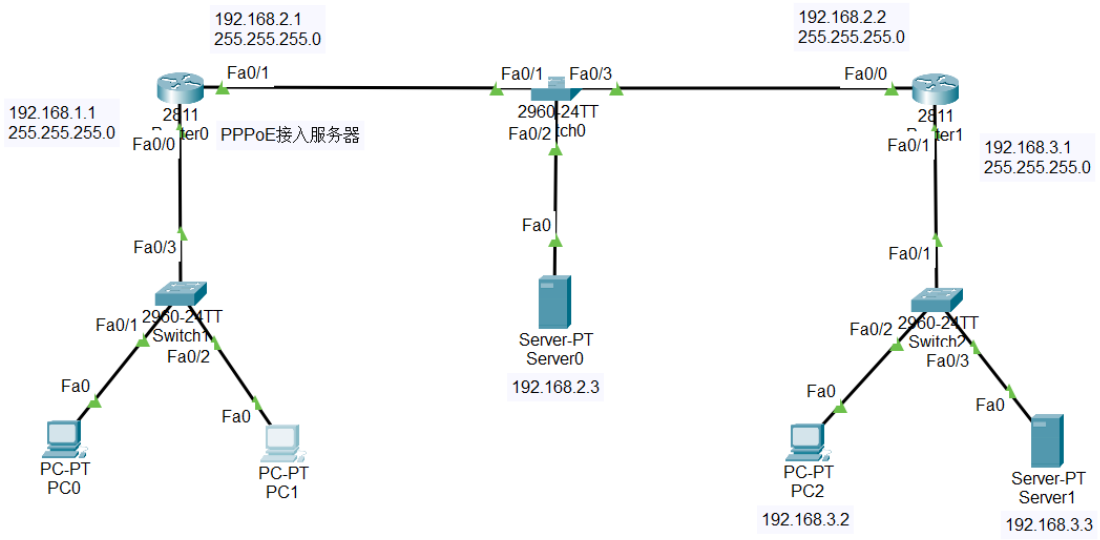
> 1. PPPoE服务器配置和应用实验在虚拟仿真环境下完成，要求如下：
>
> （1）仿真有线局域网接入互联网的场景，正确配置PPPoE服务器的认证协议、地址池、虚拟模板和物理接口，使内网用户经认证后才能正常访问外部互联网。
>
> （2）仿真家庭网络中，无线和有线终端（主机、智能电话等）连入小型路由器，由小型路由器统一接入互联网服务运营商PPPoE服务器的场景。对小型路由器和PPPoE服务器进行设置，使家庭网络中的用户经认证后才能正常访问外部互联网。

实验环境

> 操作系统：Windows10
> 软件版本：Cisco Packet Tracer_820_windows_64bits

实验内容

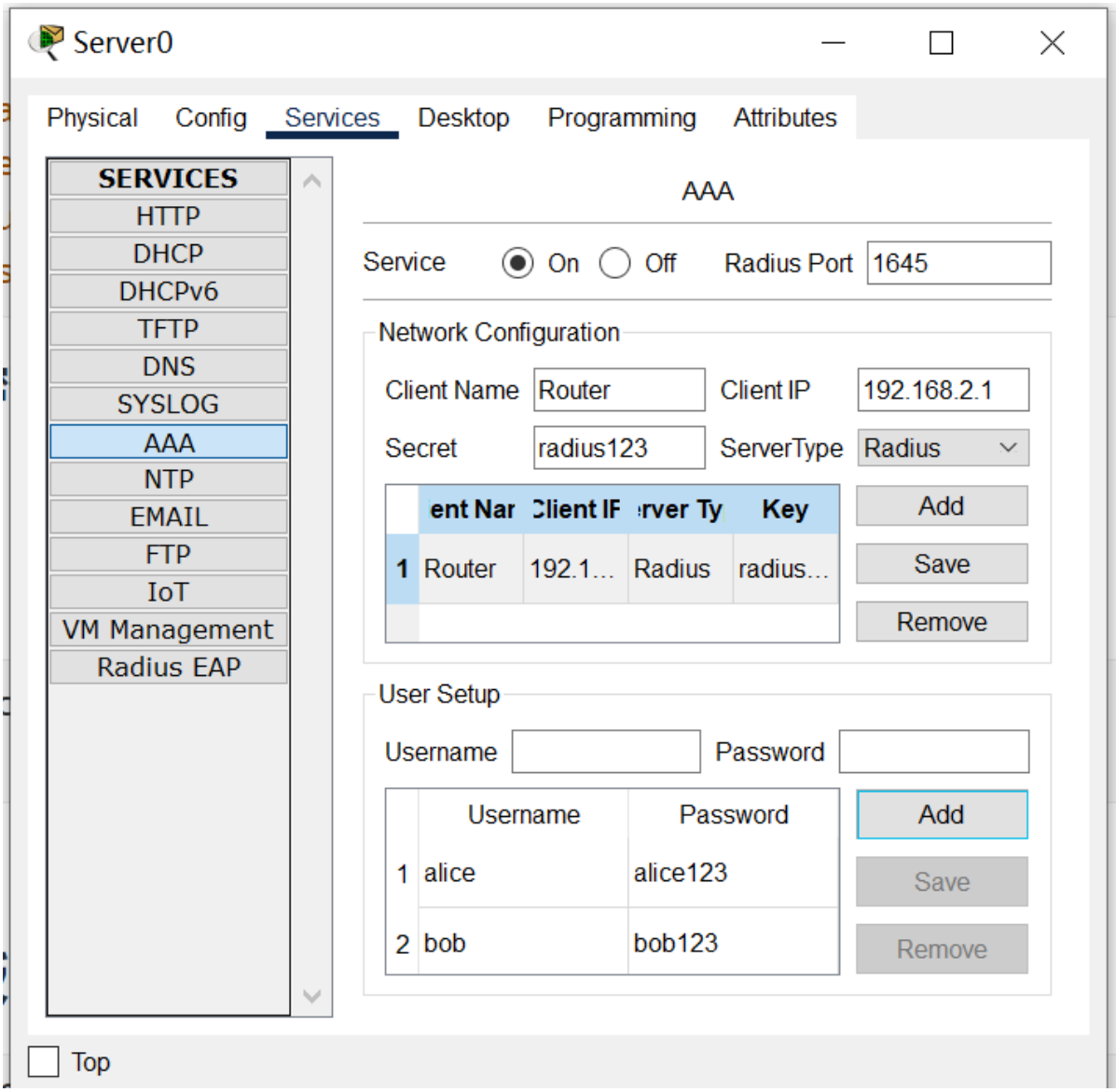
网络拓扑结构如下：



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



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 unnumber fa0/0
Router(config-if)#peer default ip address pool myPool
Router(config-if)#ppp authentication chap myPPPoE
```

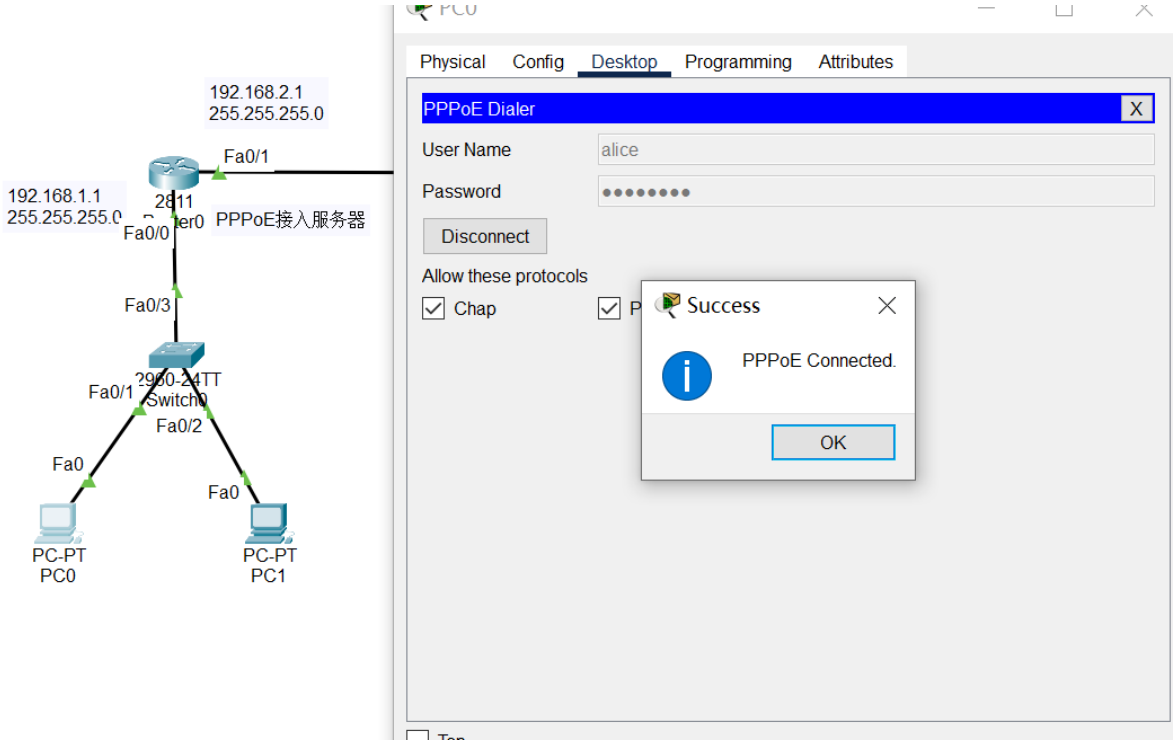
创建BBA组

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

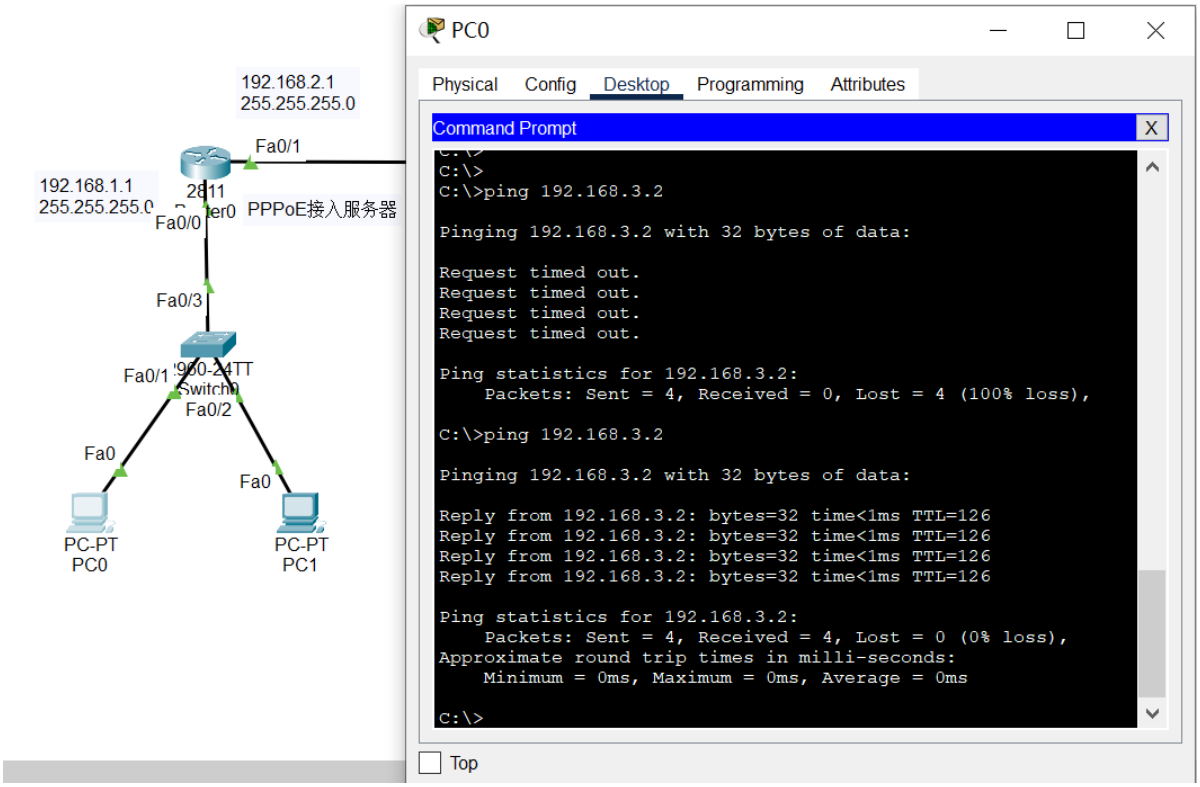
配置物理接口

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

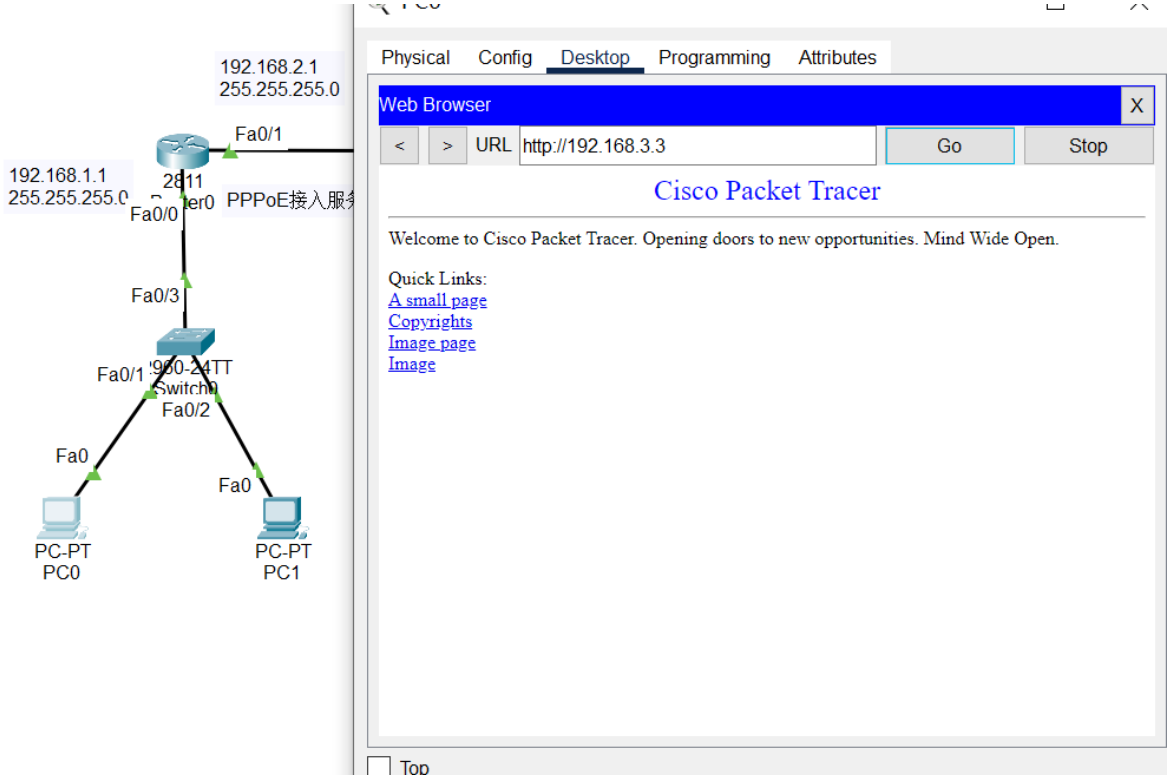
配置成功，使用PC0接入PPPoE服务：



使用PC0 ping PC2：



PC0浏览服务器：



ipconfig查看分配的IP地址：

PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
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。