



## Configure PPPoE

### Objectives

In this project/lab the student will:

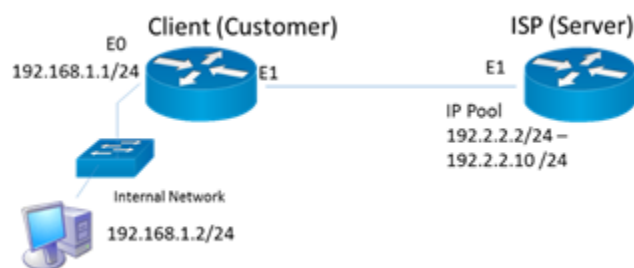
- Configure and verify PPPoE on WAN interfaces using local authentication.

### Assignment

Upload your completed Packet Tracer file for grading as well as a document answering the questions you find throughout the lab.

### Equipment/Supplies Needed

- A computer with an Internet connection
- Cisco Packet Tracer
- Configure PPPoE.pkt file



### Procedure

#### Configure PPPoE

1. Recreate the topology in Packet Tracer and cable routers as shown in the topology. Configure hostnames as appropriate.
2. Create the dialer interface and define ppp authentication (Use PPP CHAP authentication)

```
Client(config)# interface dialer 1
Clientconfig-if)# mtu 1492
Client(config-if)# ip address negotiated
Client(config-if)# encapsulation ppp
Client(config-if)# dialer pool 1
Client(config-if)# ppp authentication chap callin
Client(config-if)#ppp chap hostname Client
Client(config-if)#ppp chap password cisco
```

```
Client(config-if)# exit
```

3. Configure Ethernet interface for PPPoE connectivity

```
Client(config)# interface g0/1  
Client(config-if)# pppoe enable  
Client(config-if)# pppoe-client dial-pool-number 1  
Client(config-if)# no shutdown  
Client(config-if)# exit
```

4. Set up a static default route pointing to the dialer interface

```
Client(config)# ip route 0.0.0.0 0.0.0.0 dialer 1
```

5. Configure PPPoE on the Server ("ISP Router")

- a. Create a local username and password for client access

```
ISP(config)#username Client password cisco
```

- b. Create pool of ip addresses for the clients

```
ISP(config)# ip local pool ippool1 192.2.2.2 192.2.2.40
```

- c. Create the virtual template

```
ISP(config)# interface virtual-template 1  
ISP(config-if)# peer default ip address pool ippool1  
ISP(config-if)# ppp authentication chap callin  
ISP(config-if)# exit
```

- d. Assign template to dialer group

```
ISP(config)# bba-group pppoe global  
ISP(config-bba-group)# virtual-template 1  
ISP(config-bba-group)# exit
```

6. Associate the group with the interface

```
ISP(config)# interface g0/1  
ISP(config-if)# pppoe enable group global  
ISP(config-if)# no shutdown  
ISP(config-if)# exit
```

7. Record the output of each of the following commands:

- a. Verify server on ISP (Server) Router operation

**show ip int brief**  
**show pppoe session**

- b. Verify the configuration on Client Router with the following commands:

**Show int dialer 1**  
**show ip int brief**  
**show pppoe session**

- c. Set up debug to observe the PPP and PPOE negotiations.

**debug ppp authentication**

## Rubric

### Checklist/Single Point Mastery

<u>Concerns</u> Working Towards Proficiency	<u>Criteria</u> Standards for This Competency	<u>Accomplished</u> Evidence of Mastering Competency
	Criteria #1: ISP (Server) Router <i>Show ip int brief</i> content (15 points)	
	Criteria #2: ISP (Server) Router <i>show pppoe session</i> content (20 points)	
	Criteria #3: Client Router <i>Show int dialer 1</i> content (15 points)	
	Criteria #4: Client Router <i>show ip int brief</i> content (15 points)	
	Criteria #5: Client Router <i>show pppoe session</i> content (20 points)	
	Criteria #6: Client Router <i>debug ppp authentication</i> content (15 points)	