PPPoE IA

Ethernet Switch

ZyNOS 4.0

Support Notes

Version 4.00

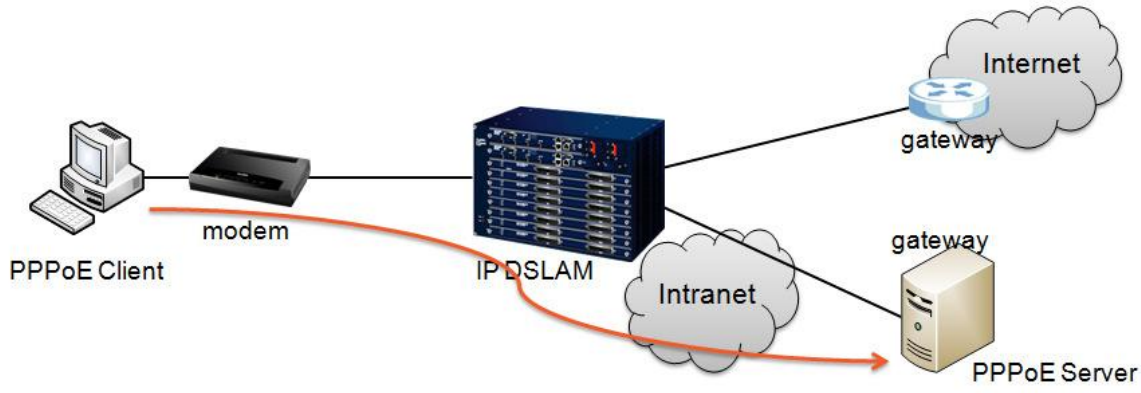
July 2011

ZyXEL
Unleash Networking Power

PPP over Ethernet Overview

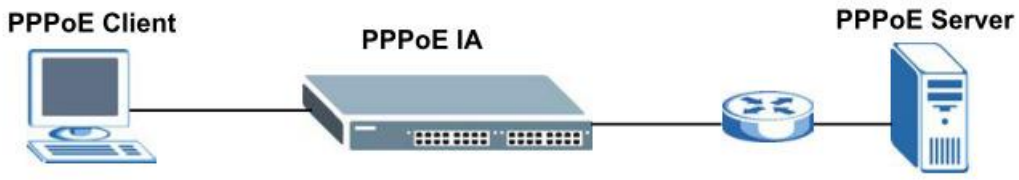
PPP over Ethernet (PPPoE) provides the ability to connect a network of hosts over a simple bridging access device to a remote Access Concentrator. With this model, each host utilizes it"s own PPP stack and the user is presented with a familiar user interface. Access control, billing and type of service can be done on a per-user, rather than a per-site, basis.

To provide a point-to-point connection over Ethernet, each PPP session must learn the Ethernet address of the remote peer, as well as establish a unique session identifier. PPPoE includes a discovery protocol that provides this.



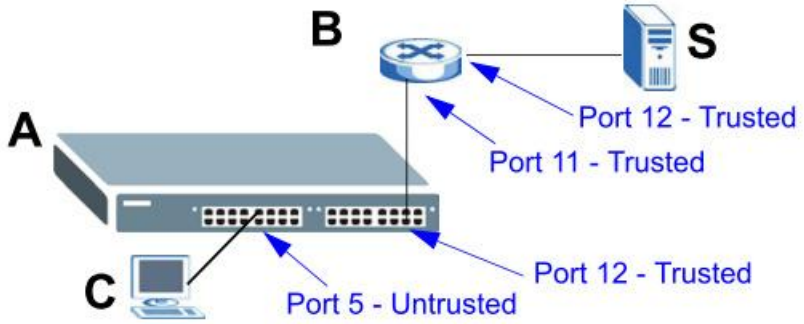
PPPoE Intermediate Agent Overview

A PPPoE Intermediate Agent (PPPoE IA) is deployed between a PPPoE server and PPPoE clients. It helps the PPPoE server identify and authenticate clients by adding subscriber line specific information to PPPoE discovery packets from clients on a per-port or per-port-per-VLAN basis before forwarding them to the PPPoE server.



Scenario

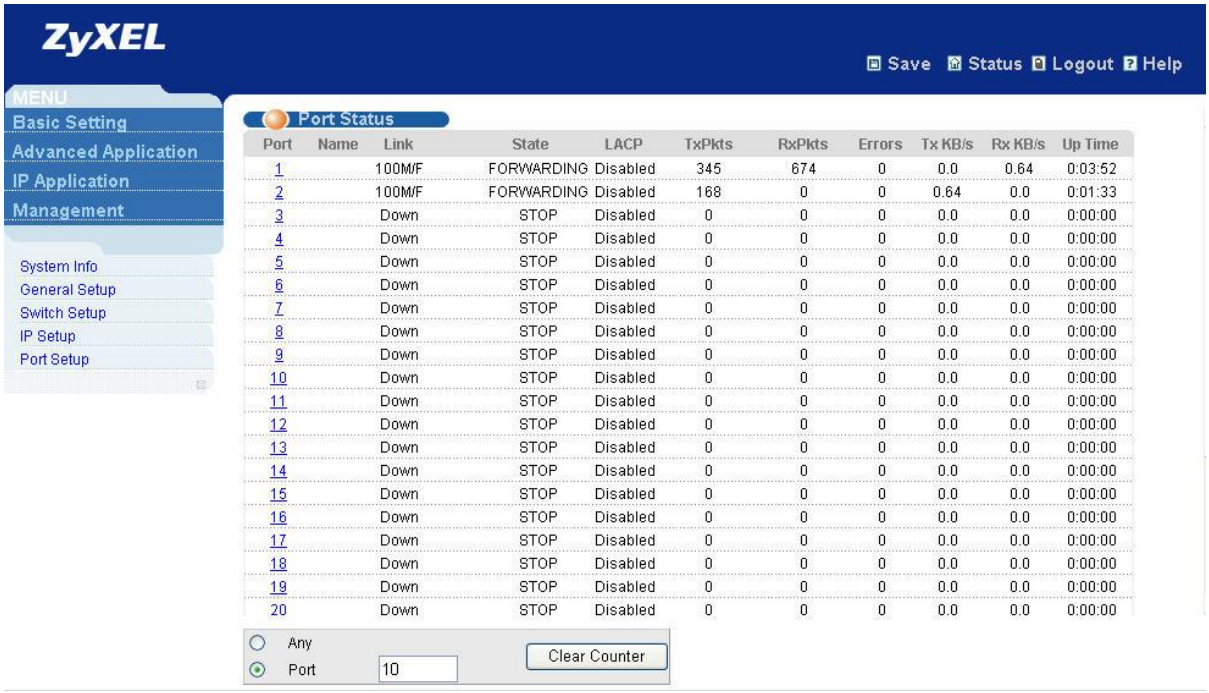
Below is a simple topology which could give us a common view about PPPOE . You want to configure PPPoE Intermediate Agent on the Switch (A) to pass a subscriber's information to a PPPoE server (S). There is another switch (B) between switch A and server S. Switch B is connected to switch A. In this way, PPPoE server S can identify subscriber C and may apply different settings to it.



SWITCH	PORT CONNECTED	VLAN	CIRCUIT-ID	REMOTE-ID	PPPOE IA PORT TRUSTED
A	Port 5 (to **C**)	1	userC	00134900000A	Untrusted
	Port 12 (to **B**)	1	N/A	N/A	Trusted
B	Port 11 (to **A**)	1	N/A	N/A	Trusted
	Port 12 (to **S**)	1	N/A	N/A	Trusted

Configuration ZyXEL switch using the Web GUI

1. Connect the MGMT port to a PC or Notebook with the RJ45 Cable.
2. By default, the MGMT IP address of the out-band port is 192.168.0.1/24
3. Set your NIC to 192.168.0.100/24
4. Open an Internet browser (e.g. IE) and enter http://192.168.0.1 into the URL field.
5. By default, the username for the administrator is “admin” and the password is “1234”.
6. After successfully logging in you will see a screen similar to the one below.

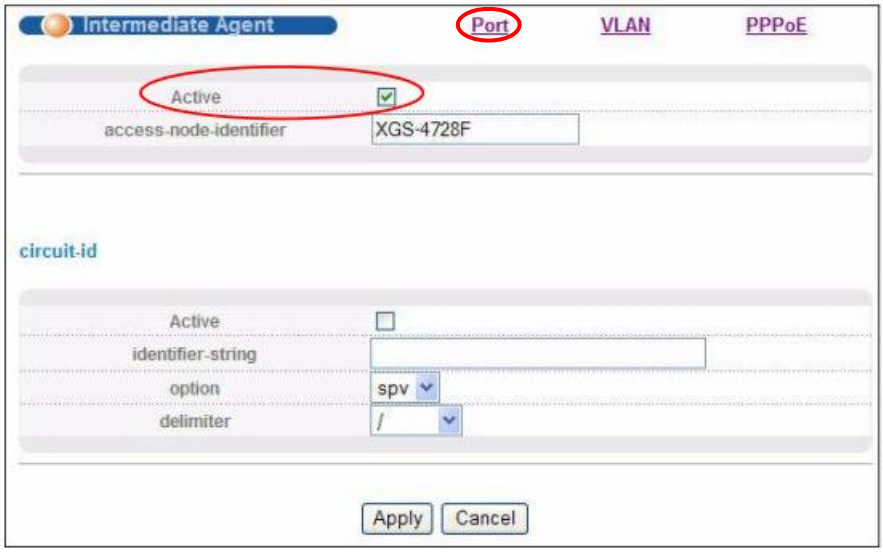


Configuring Switch A

To enter the “**Advanced Application**” page, click “**PPPoE**” “**PPPoE**” “**Intermediate Agent**”

Setup 1.

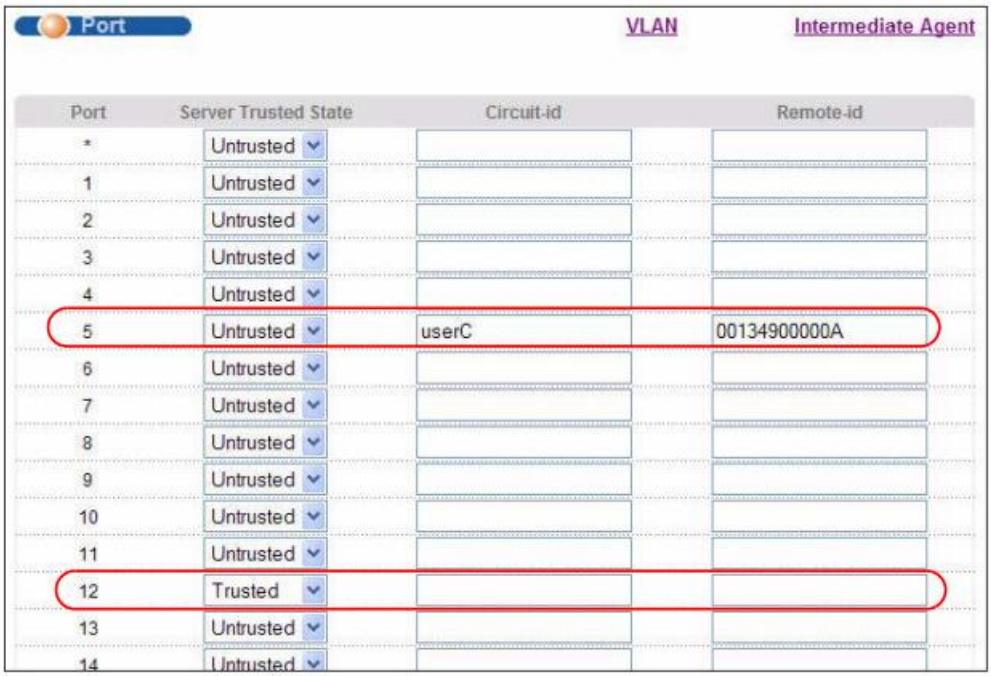
Click Advanced Application > PPPoE > Intermediate Agent. Select Active then click Apply. Then,click Port on the top of the screen.



Setup 2.

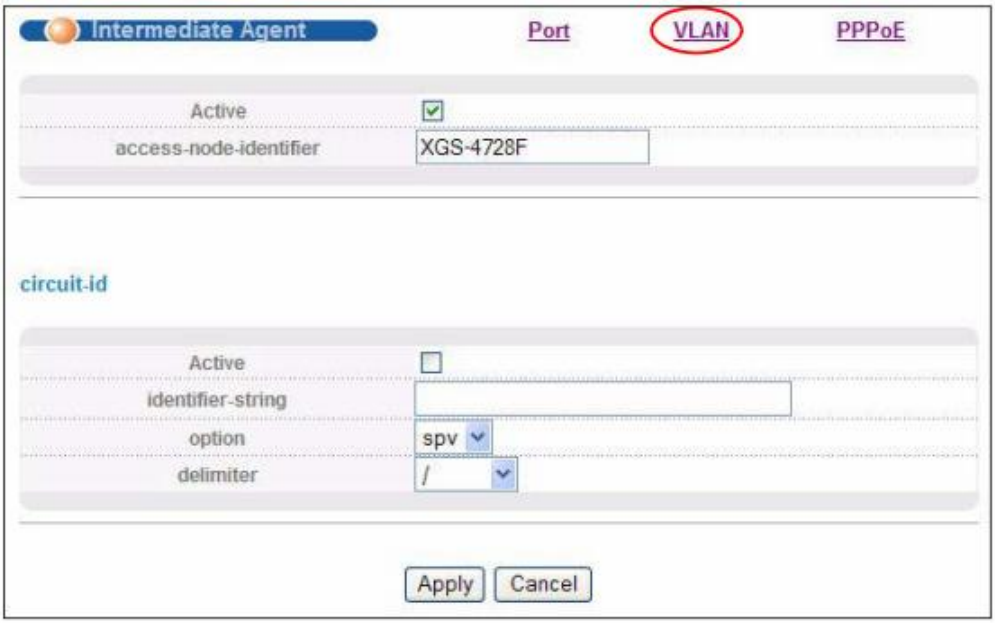
Select Untrusted for port 5 and enter userC as Circuit-id and 00134900000A as Remote-id.

Select Trusted for port 12 and then leave the other fields empty. Click Apply.



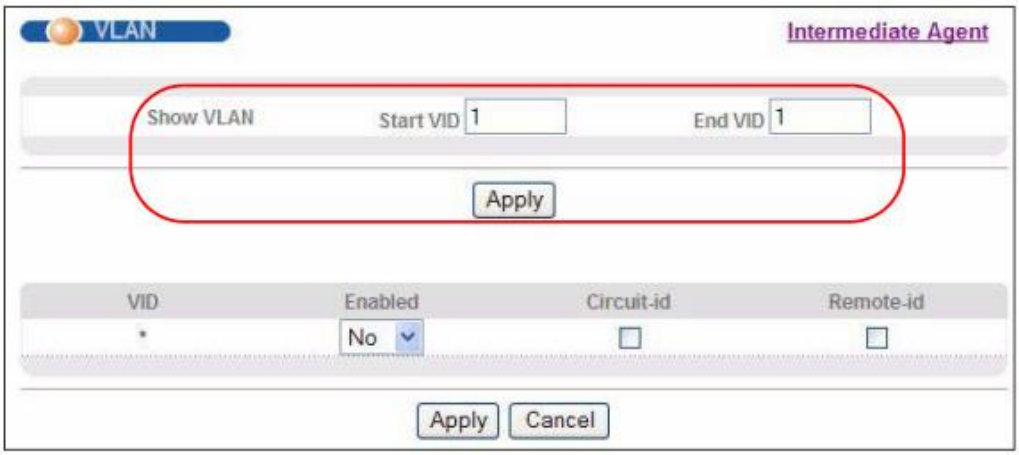
Setup3.

The Intermediate Agent screen appears. Click VLAN on the top of the screen.



Setup 4.

Enter 1 for both Start VID and End VID since both the Switch and PPPoE server are in VLAN 1 in this example. Click Apply.



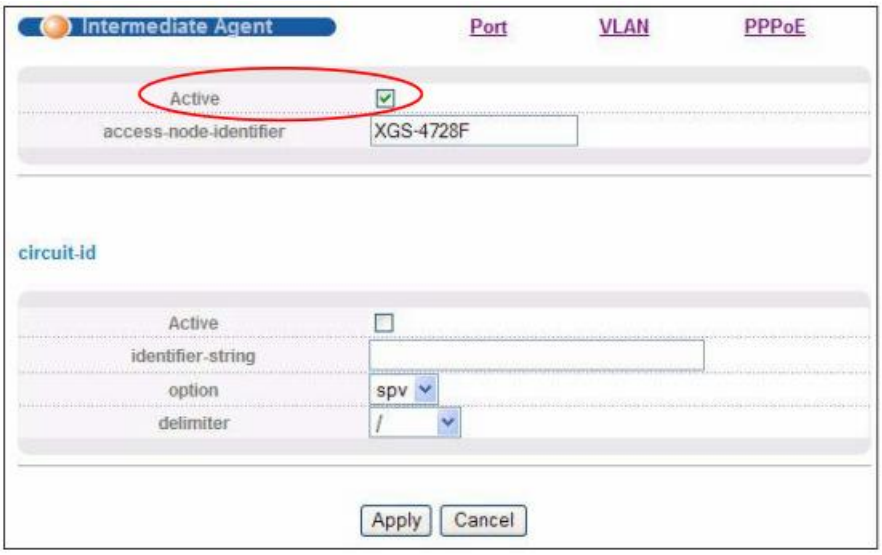
Setup 5.

Then select Yes to enable PPPoE IA in VLAN 1 and also select Circuit-id and Remote-id to allow the Switch to add these two strings to frames tagged with VLAN 1 and pass to the PPPoE server. Click Apply.

Configuring Switch B

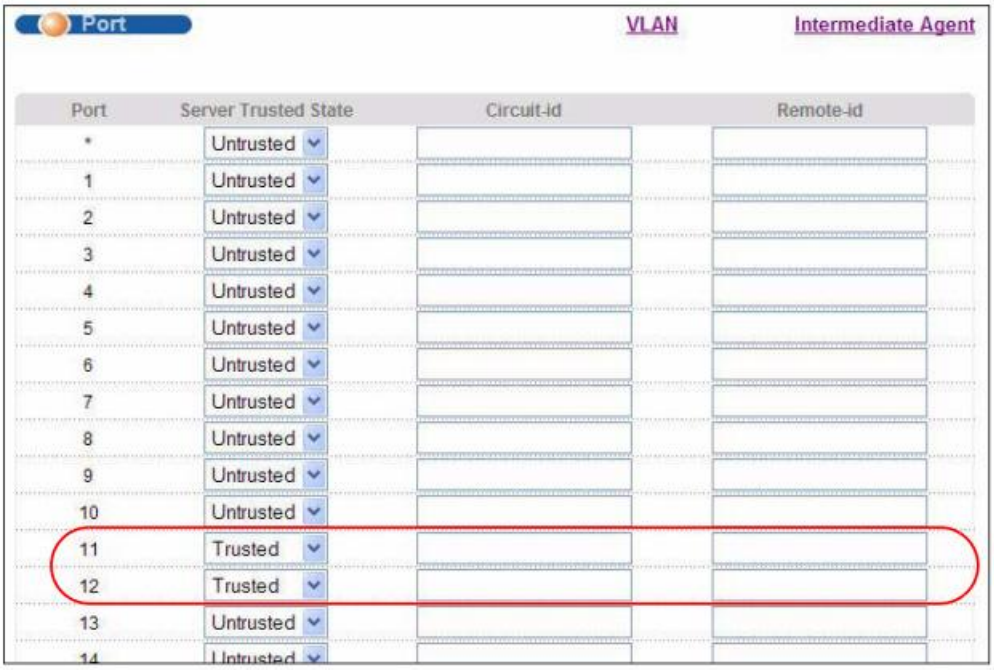
The example uses another XGS-4728F as switch B.

Setup 1. Click Advanced Application > PPPoE > Intermediate Agent. Select Active then click Apply. Click Port on the top of the screen.



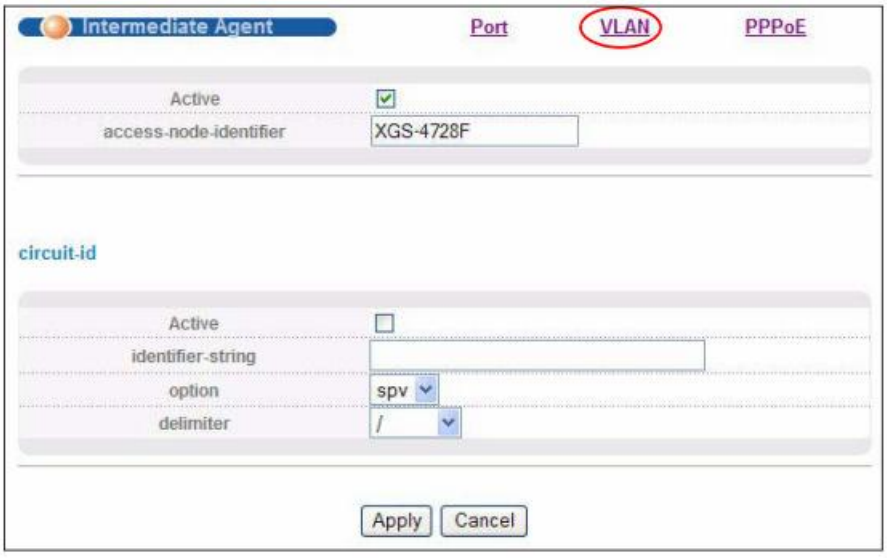
Setup 2.

Select Trusted for ports 11 and 12 and then click Apply. Then Click Intermediate Agent on the top of the screen.



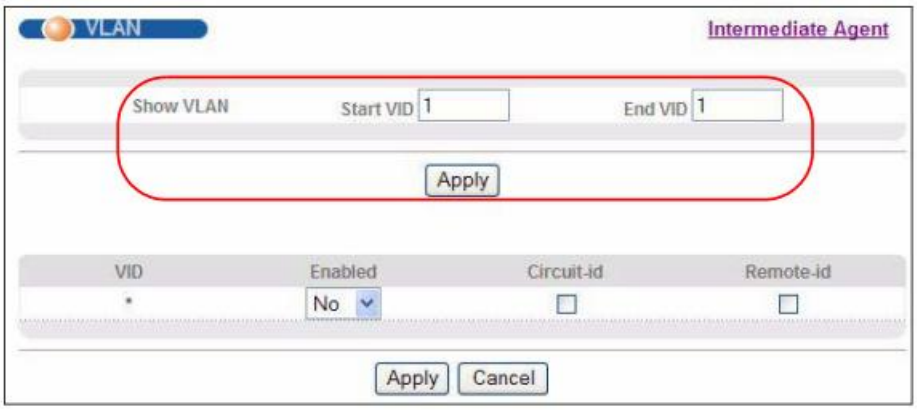
Setup 3.

The Intermediate Agent screen appears. Click VLAN on the top of the screen. Enter 1 for both Start VID and End VID. Click Apply.



Setup4.

Enter 1 for both Start VID and End VID. Click Apply.



Setup 5.

Then select Yes to enable PPPoE IA in VLAN 1 and also select Circuit-id and Remote-id to allow the Switch to add these two strings to frames tagged with VLAN 1 and pass to the PPPoE server. Click Apply.

The settings are completed now. If you miss some settings above, subscriber C could not successfully receive an IP address assigned by the PPPoE Server. If this happens, make sure you follow the steps exactly in this tutorial.

Configuration ZyXEL switch using the CLI

Switch A

```
   vlan 1
   name 1
   normal ""
   fixed 1-28
   forbidden ""
   untagged 1-28
   ip address 192.168.1.1 255.255.255.0
exit
interface route-domain 192.168.1.1/24
exit
interface port-channel 5
   pppoe intermediate-agent format-type circuit-id string userC
   pppoe intermediate-agent format-type remote-id string 00134900000A
exit
interface port-channel 12
   pppoe intermediate-agent trust
exit
ip address 192.168.0.1 255.255.255.0
pppoe intermediate-agent
pppoe intermediate-agent vlan 1
pppoe intermediate-agent vlan 1 circuit-id
pppoe intermediate-agent vlan 1 remote-id
```

Switch B

```
vlan 1 name 1
   normal ""
   fixed 1-28
   forbidden ""
   untagged 1-28
   ip address 192.168.1.1 255.255.255.0
exit
interface route-domain 192.168.1.1/24
exit
interface port-channel 5
   pppoe intermediate-agent format-type circuit-id string userC
   pppoe intermediate-agent format-type remote-id string 00134900000A
exit
interface port-channel 12
   pppoe intermediate-agent trust
exit
ip address 192.168.0.1 255.255.255.0
pppoe intermediate-agent
pppoe intermediate-agent vlan 1
pppoe intermediate-agent vlan 1 circuit-id
pppoe intermediate-agent vlan 1 remote-id
```