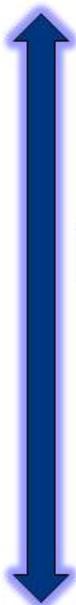# ARP Learning

**Ethernet Switch**

**ZyNOS 4.00**

Support Notes

Version 4.00 July 2011

## Overview of ARP Learning

In previous release of firmware, to avoid ARP spoofing, the switch only accepted ARP replies that were requested by the switch itself. With the new ARP-Learning feature, user can now select ARP learning mode on specific ports, including ARP-request, ARP-reply and Gratuitous-ARP.
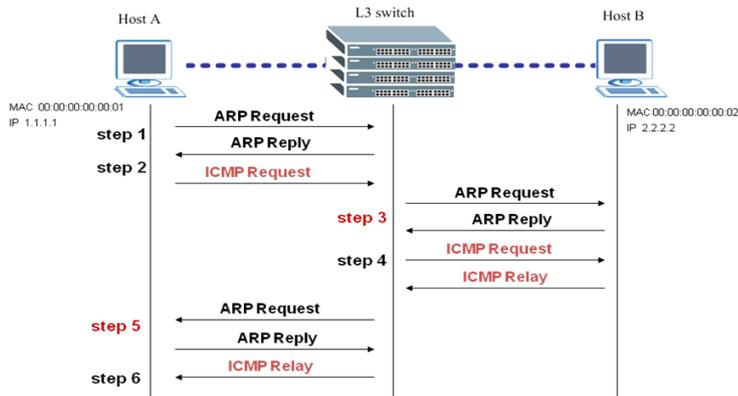
## Convenient

1. **All IP packet learning to CPU**
2. **ARP Request**
3. **ARP Reply + Gratuitous ARP**
4. **ARP Reply + IP Move**     default
5. **ARP Reply**
6. **IPSG: IP + MAC Binding**
7. **IPSG: IP + MAC + Port Binding**
8. **802.1X authentication**

## Security

This figure above presents the relative position of the setting between Convenience and Security.
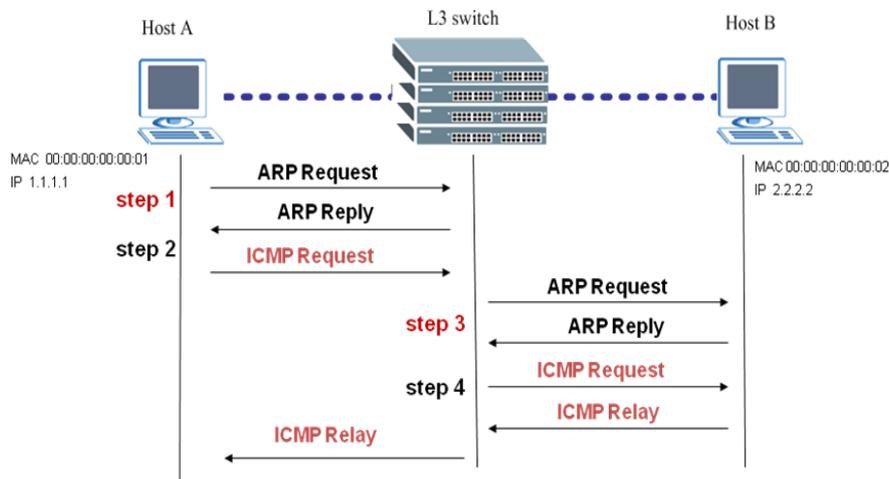
# Scenario

### 1. Using ARP-reply as ARP-Learning-Mode



This is the default setting. As a result the switch will only learn ARP in step 3 and step 5, it is because the switch only records ARP records which were requested by itself.

### 2. Using ARP-request as ARP-Learning-Mode



When using ARP-request as the ARP-Learning-Mode, the switch will learn ARP immediately when it receives an ARP-request.

3. **Gratuitous-ARP**
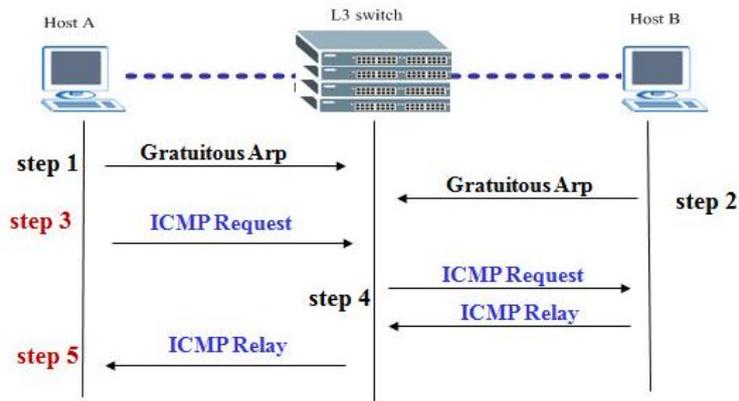


A gratuitous ARP-Request is an ARP-Request packet .The source and destination IPs are both set to the IP of the machine issuing the packet. The destination MAC is the broadcast address. It's mostly sent out during a link-up of a device or to notify when there is an IP address conflict.
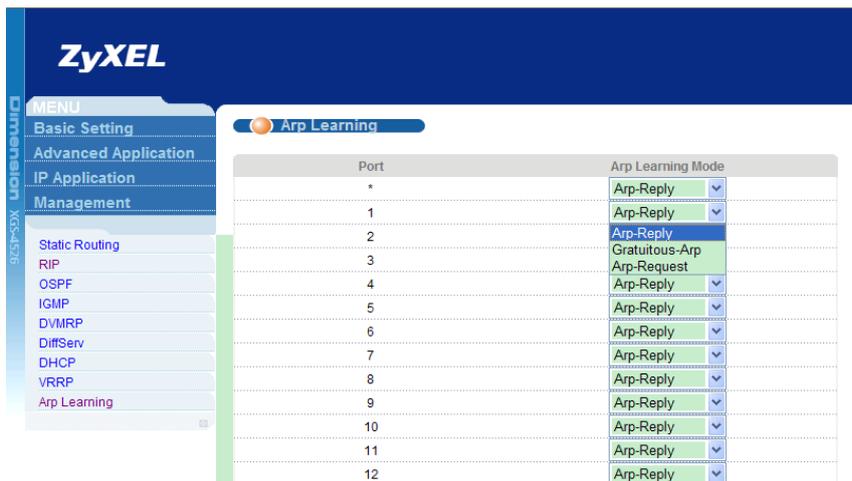
# Configuration using the Web GUI

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.
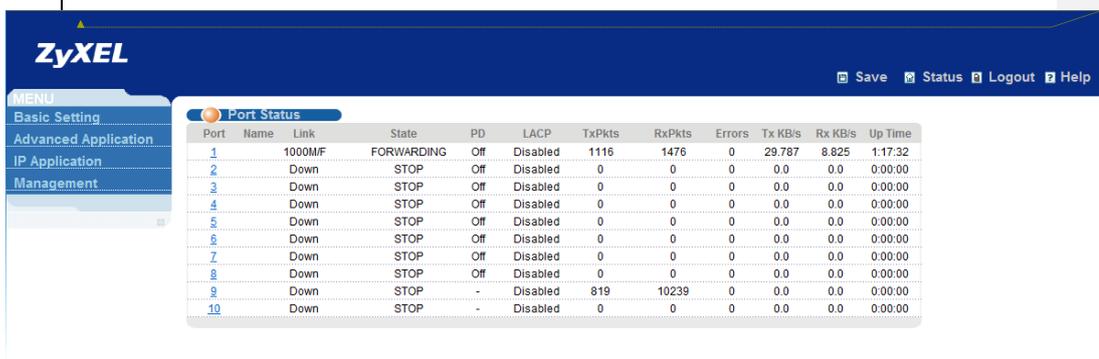


7. Click "**IP Application**" → "**Arp Learning**" for the setup page.

# Configuration using the CLI

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 the command line and type: telnet 192.168.0.1

5. By default, the username for the administrator is "admin" and the password is 1234

Alternatively, connect the CONSOLE port to a PC's serial port.

Use a terminal program with the following settings:

Baud rate: 9600/115200

Data: 8 bit

Parity: none

Stopbits: 1 bit

Flow Control: none

Switch#config

Switch(config)#interface port-channel <number>

Switch(config-interface)#arp-learning < arp-request | gratuitous-arp | arp-reply>