LAB: Configure an Access Point to support VLANs

Objective

The student will extend VLANs into a WLAN.

Scenario

VLANs can be extended into a WLAN by adding IEEE 802.11Q tag awareness to the AP. Frames destined for different VLANs are transmitted by the AP wirelessly on different SSIDs with different WEP keys. Only the clients associated with that VLAN receive those packets. Conversely, packets coming from a client associated with a certain VLAN are 802.11Q tagged before they are forwarded onto the wired network. The basic wireless components of a VLAN consist of an AP and a client associated to it using wireless technology. The AP is physically connected through a trunk port to the network VLAN switch on which the VLAN is configured. The physical connection to the VLAN switch is through the AP Ethernet port. A router is also necessary to route between the different VLANs. Up to 16 SSIDs can be configured on the AP, hence 16 VLANs are supported.

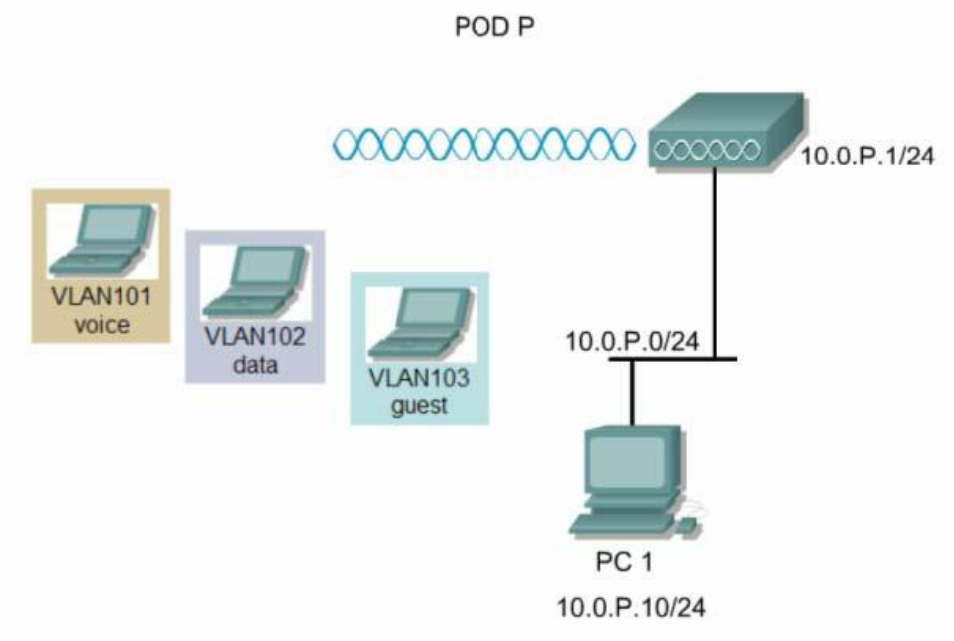
Configuring the AP to support VLANs is a three-step process:

1. Create SSIDs and assign authentication settings to SSIDs.

2. Assign SSIDs to VLANs .

3. Enable the VLAN on the radio and Ethernet ports.

Topology



Preparation

The student PC should be connected to the AP through an isolated wired network or crossover cable. The AP should be set to factory defaults.

Team	Access Point Name	SSID	VLAN	Authentication	Bridge group	BVI Address
1	PodP	managementP	10	Network EAP Shared	1	10.0.P.1/24
		voiceP	101	Network EAP Open	101	
		dataP	102		102	
		guestP	103		103	

Tools and Resources

- One AP with AP power supply or source
- A PC (PC1) that is connected to the same wired network as the AP
- A wireless PC or laptop (PC2)

Step1 Basic configuration

- Connect to the AP using a console
- Configure Hostname and passwords
- Configure the Bridge Virtual Interface (BVI) P = assigned group number.

Step 2 Configure PC1 and Connect to AP using the web browser

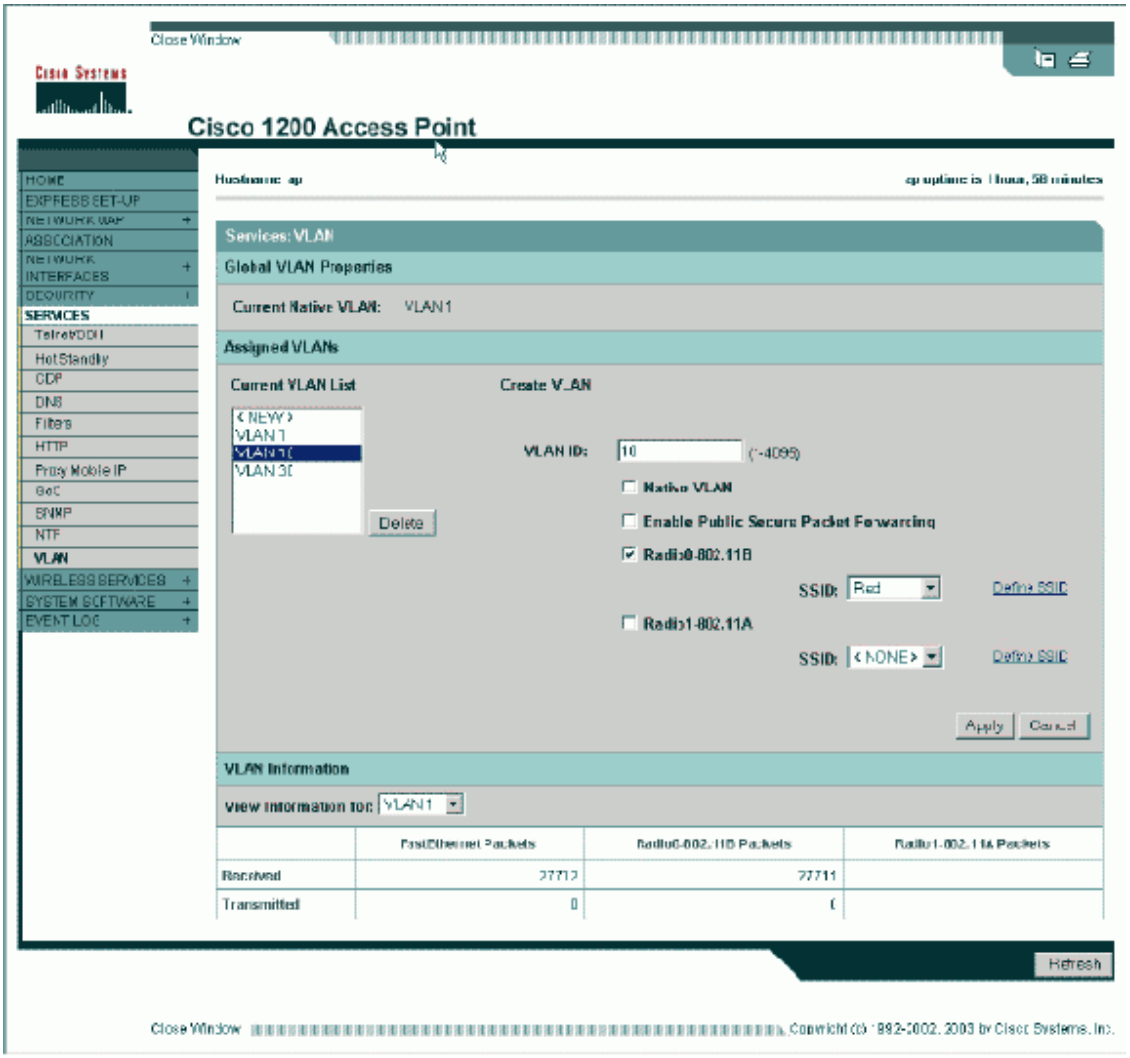
Make sure that the AP is connected to PC1 by a wired connection. Configure the IP address, subnet mask, and gateway on PC1. IP address 10.0.P.2 Subnet Mask 255.255.255.0 Gateway 10.0.P.1

Step 3 Connect to AP using the web browser

Open an Internet browser. Type the AP IP address in the browser address location field. Press Enter. A log in screen appears. Type in the password of cisco (case sensitive) and click OK.

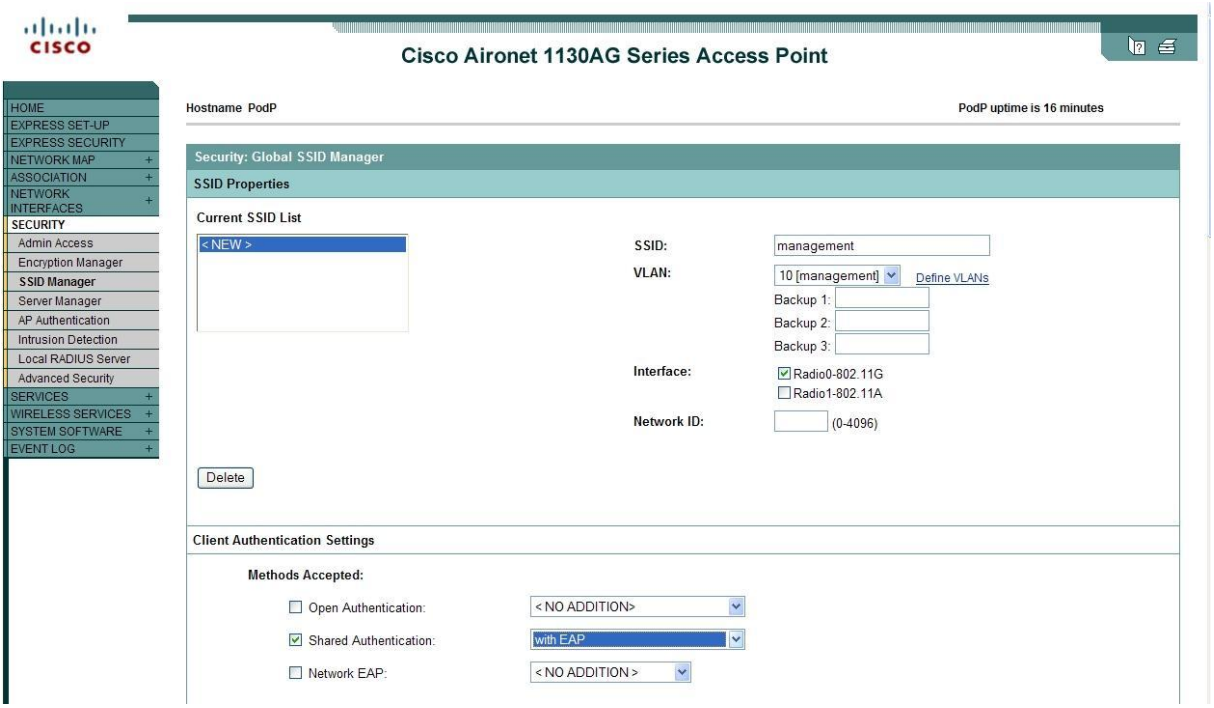
Configure VLANs

From the VLAN Service (under the **Services > VLAN** menu item), set up any subsequent VLANs:
a. From the Current VLAN List, select New.
Enter the VLAN number of the desired VLAN in the VLAN ID box. b.
c. Select check boxes for the radio interface or interfaces where this VLAN applies.
d. Click Apply

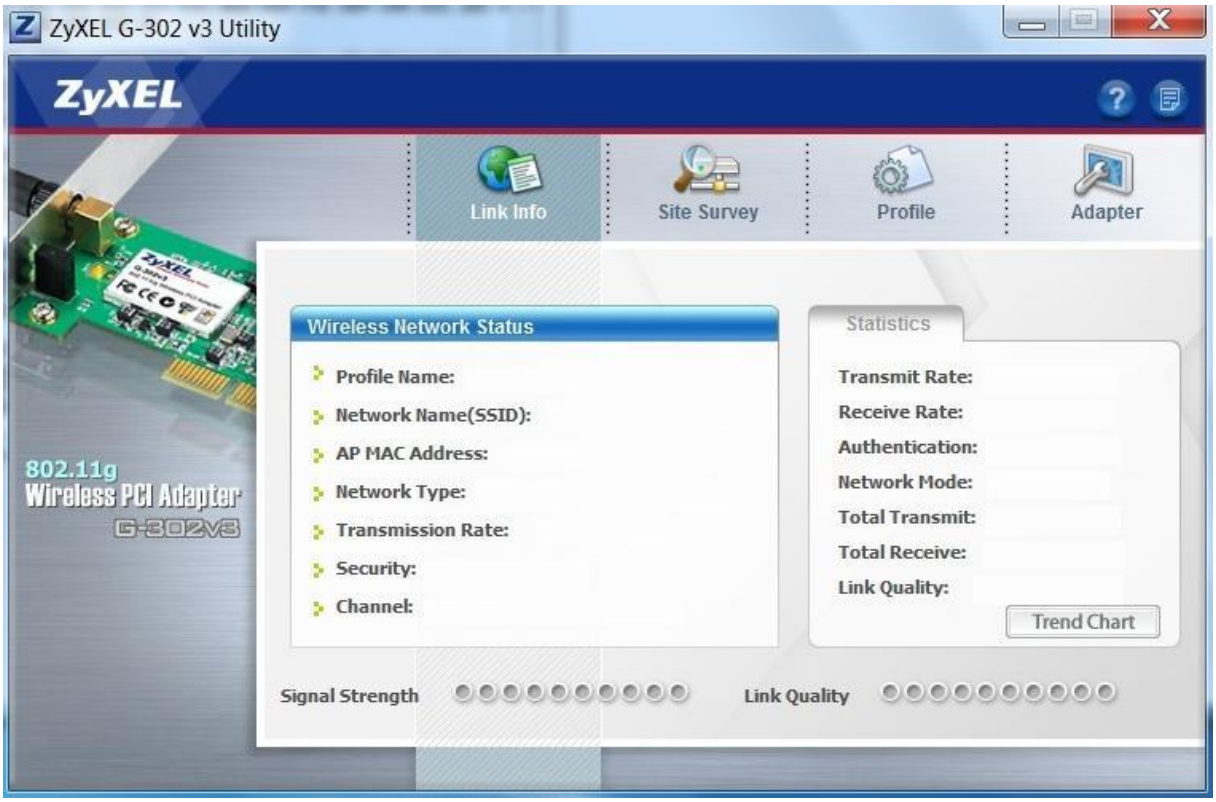


From the SSID Manager (under the **Security > SSID Manager** menu item,) associate VLANs that you want extended into wireless, with an SSID.
Note: You do not need to associate every VLAN defined on the access point with an SSID. For example, for security reasons, most access point installations do not associate an SSID with the Native VLAN.

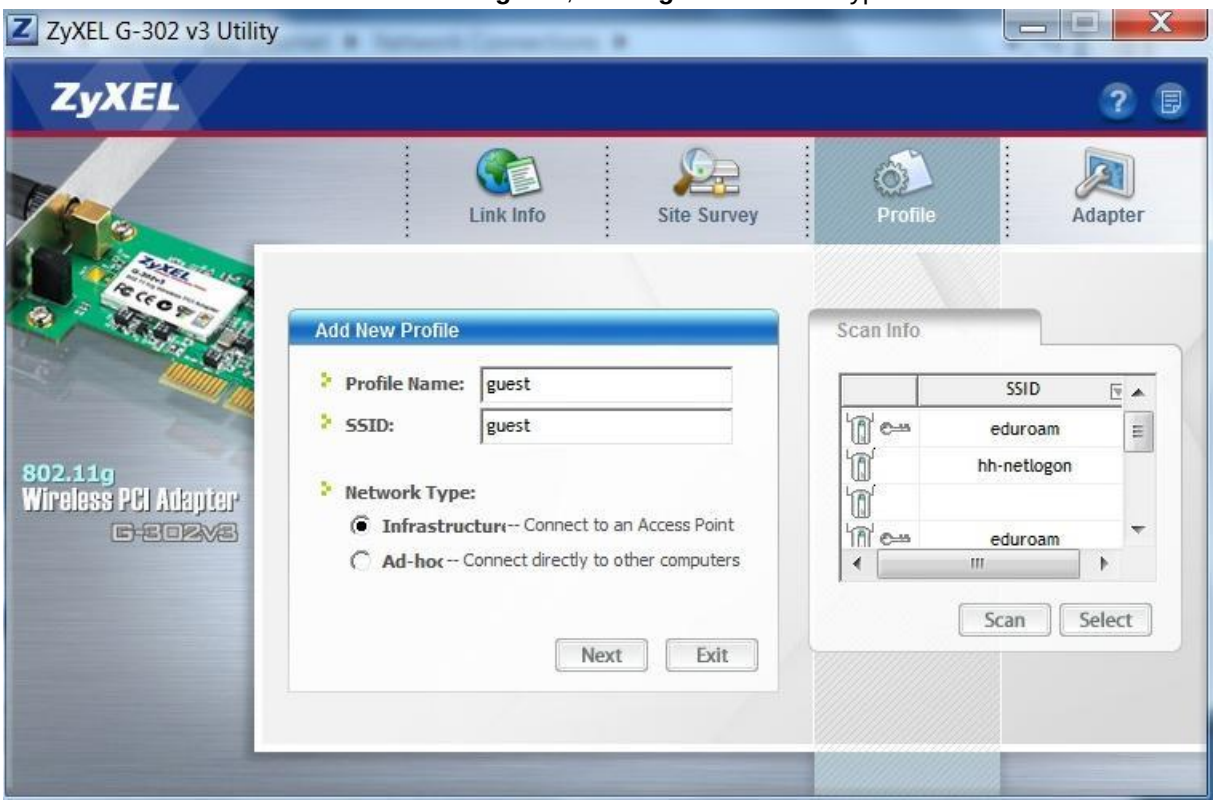
a. From the Current SSID List, select New.
b. Enter the desired SSID (case−sensitive) in the SSID box.
Select the desired VLAN number to associate this SSID with from the dropdown list.
c. Click Apply−RadioX to create the SSID on the selected radio, or Apply−all to create it on all radios.



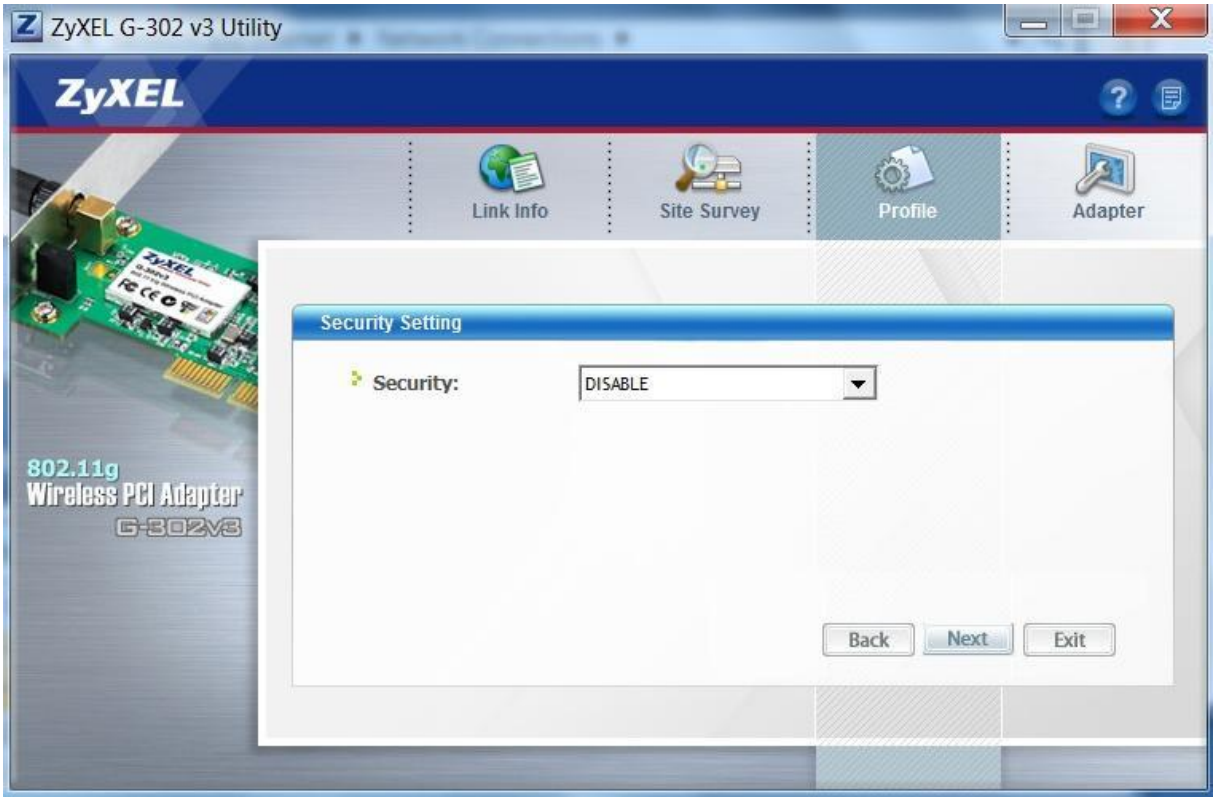
Connect one of the hosts to the guest VLAN.
Open the **ZyXEL G-302 v3 Utility** for wireless connections.



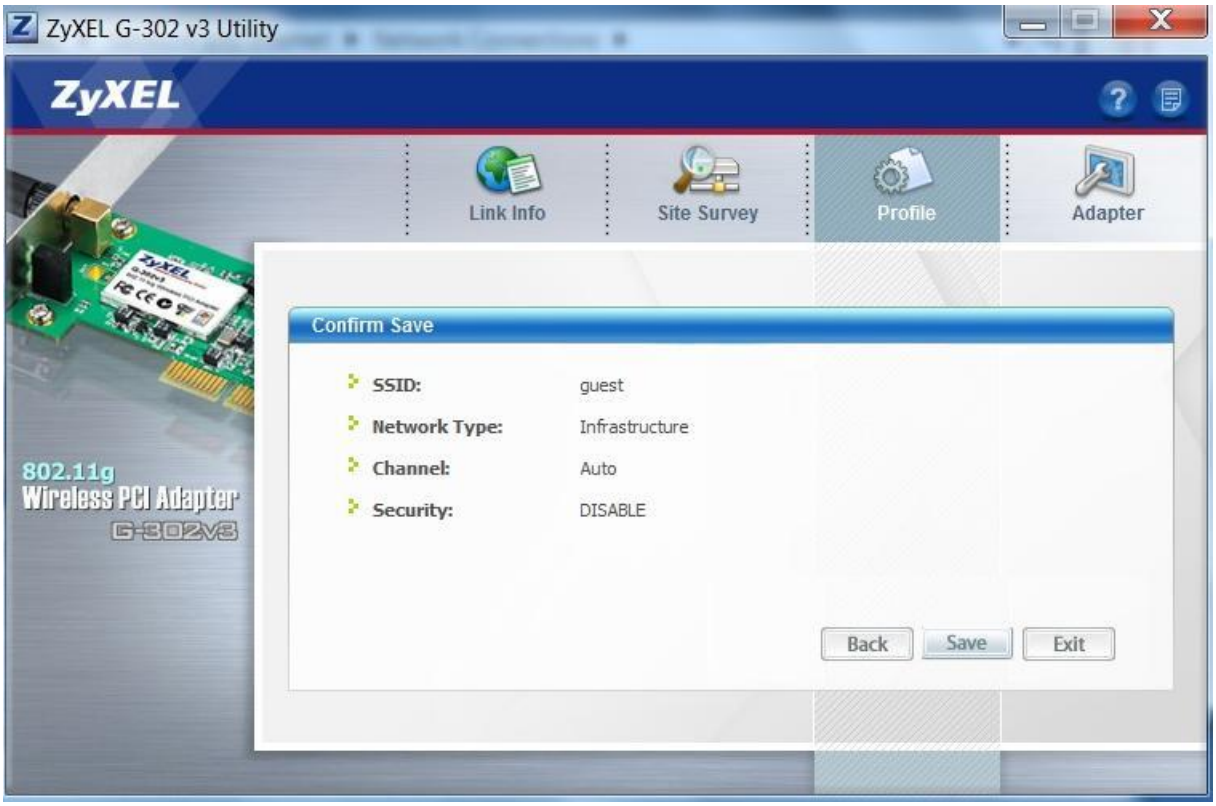
Click the **Profile** tab and add New Profile **guest**, SSID: **guest** Network type: **Infrastructure**



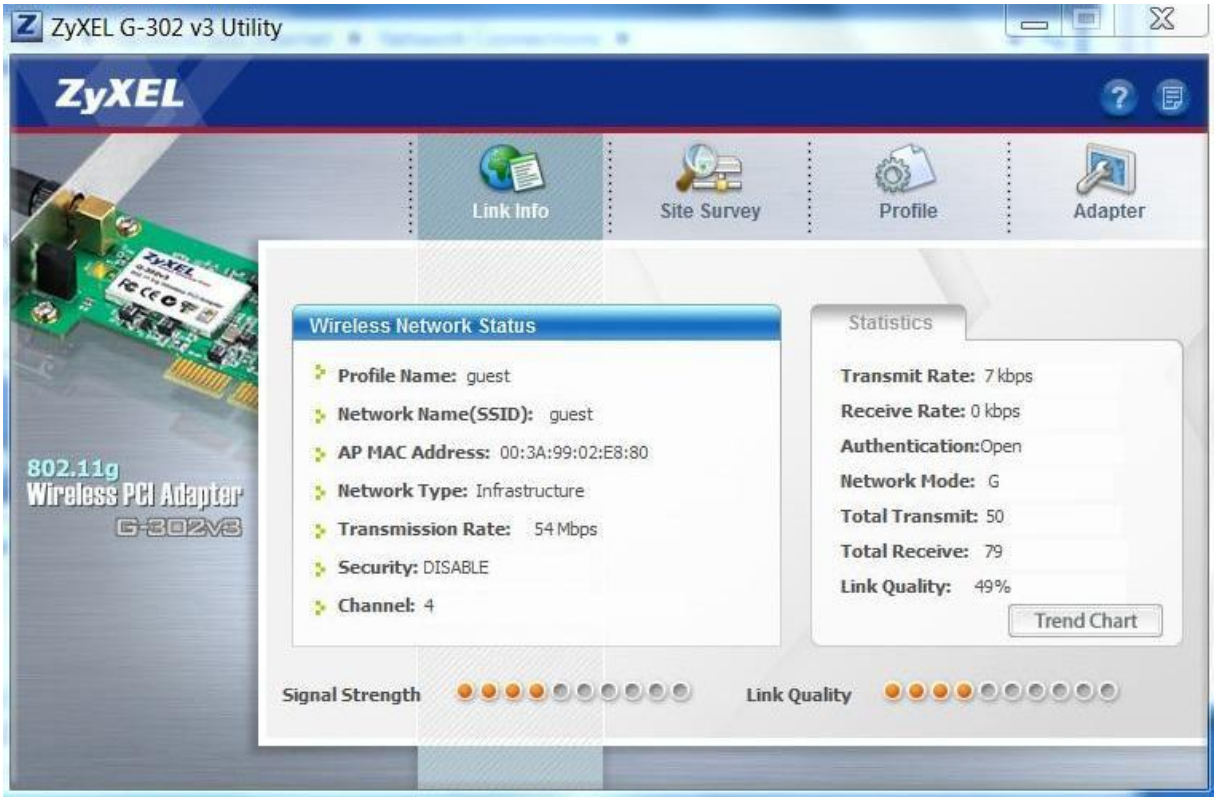
Security: **Disable**



Save and Activate the Network



Host is connected



As you may have noticed, we can't find any of our VLAN SSID:s in the SSID list. What would be a reason not to broadcast the SSID?

Name a few benefits of setting up wireless VLANs:

Setting up a rogue wireless access point, what could a hacker do, and what type of security (authentication/encryption) would be used?