

## A Tutorial

### Monitoring a ConnectUPS SNMP/WEB Card Without Wires

Author: Brian Young – Powerware

Date: January 7, 2002

## Background

Normally, a ConnectUPS SNMP/WEB Card is installed in a UPS, configured with its own IP address and then connected to an existing 10Mb Ethernet network (see Figure 1). In some environments, such as a UPS located in the basement of a building, getting an Ethernet connection near the UPS may be troublesome. This document serves to describe the process of installing a ConnectUPS SNMP/WEB Card in such an environment, using two 802.11b Wireless Access Points to provide a seamless wireless bridge to an existing wired network.

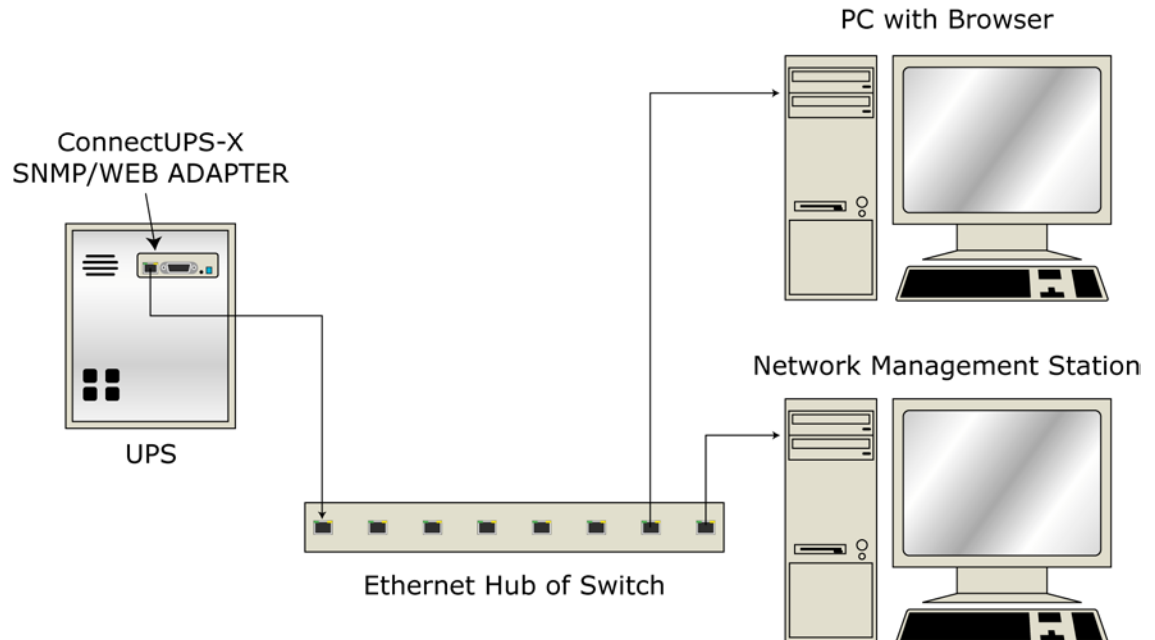


Figure 1 – Traditional “Wired” Approach

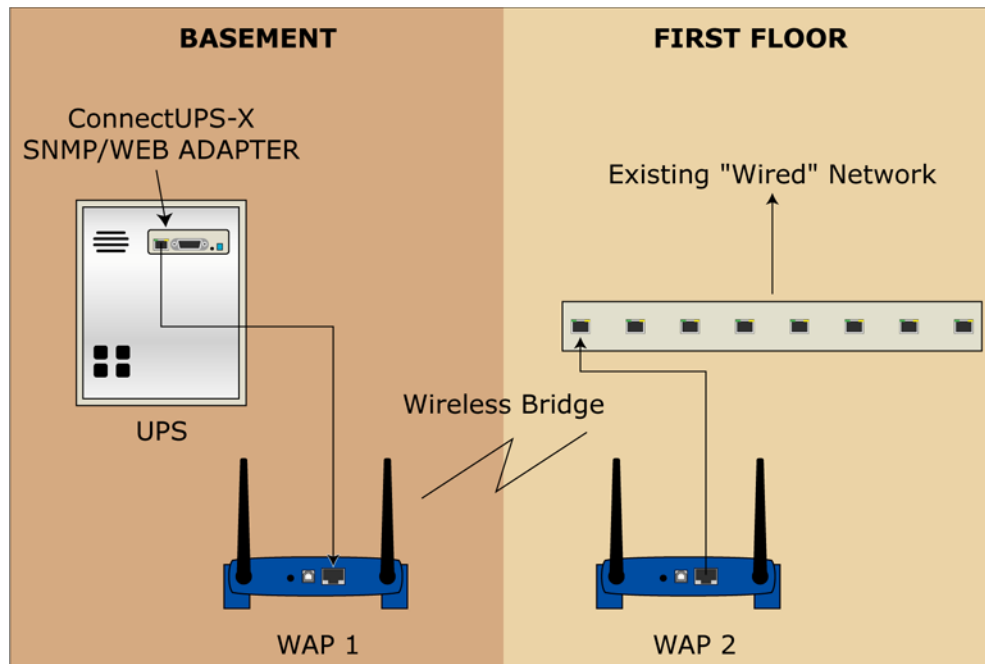


Figure 2 – Wireless Approach as described in this document

## Requirements

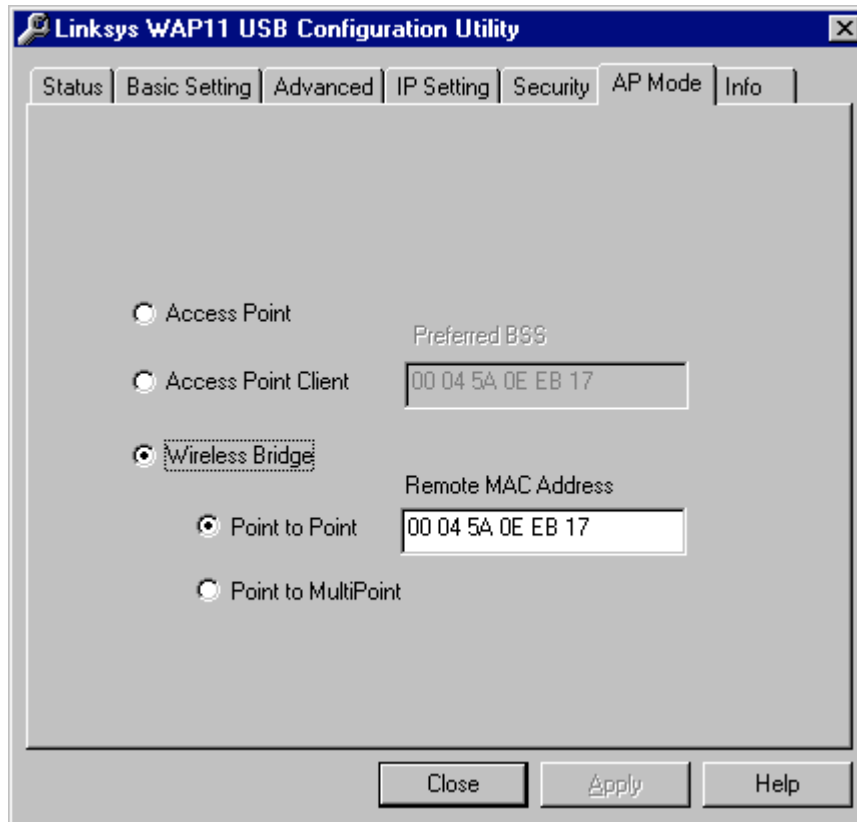
- ❑ A Powerware UPS (compatible with ConnectUPS SNMP/WEB)
- ❑ A ConnectUPS –X or –BD SNMP/WEB Card
- ❑ 2 (two) Linksys Wireless Access Points (model WAP11 is suggested due to its supported wireless bridge function)
- ❑ An Existing Ethernet infrastructure that provides a connection for one of the Wireless Access Point devices
- ❑ A Cross-Over Network Patch Cable (alternately, a hub and two non-crossed cables may be used)
- ❑ One Ethernet Patch Cable

## Installation Process

### Configuration

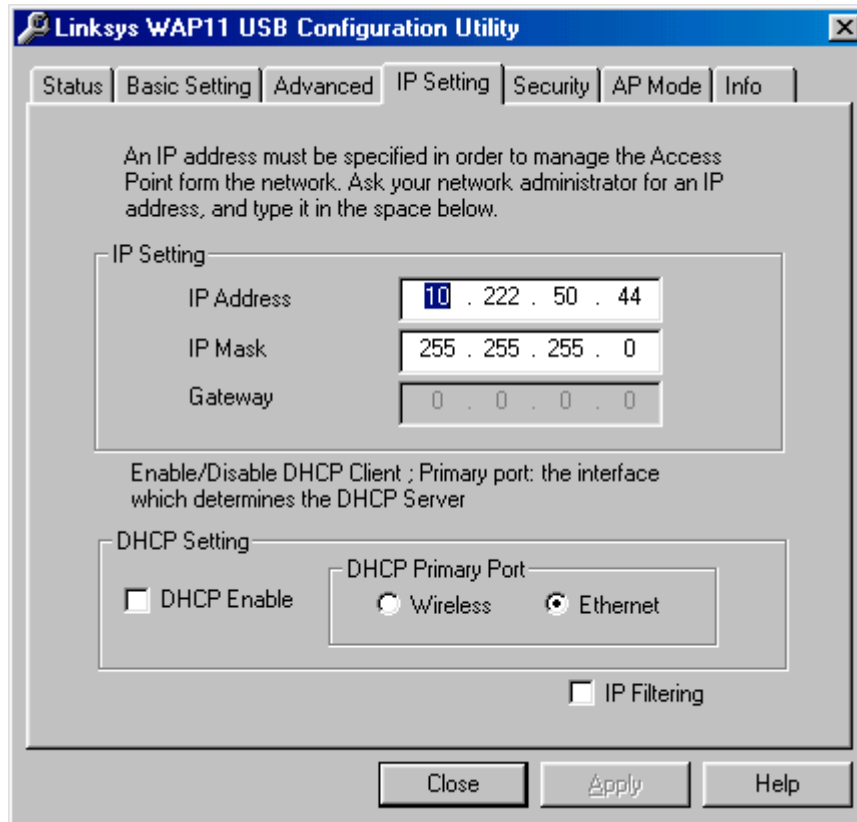
1. Use a PC or Laptop with a USB connection to run the USB-based configuration utility provided by Linksys for the WAP11 (WAP11 USB Configuration Utility) as described in the user guide provided.
2. Determine if both WAP11 devices have at least firmware version 1.4g.5 installed. If not, obtain the latest from [www.linksys.com](http://www.linksys.com) and follow the provided instructions to install the firmware. Note: One should also obtain the latest documentation for the product at the same time and if necessary, download the matching USB Configuration Utility.

3. Use the WAP11 USB Configuration Utility to set the first WAP11 as a Wireless Bridge with Point to Point communications. This will allow the first WAP11 to communicate only with another WAP11 device similarly configured as a Point to Point bridge.

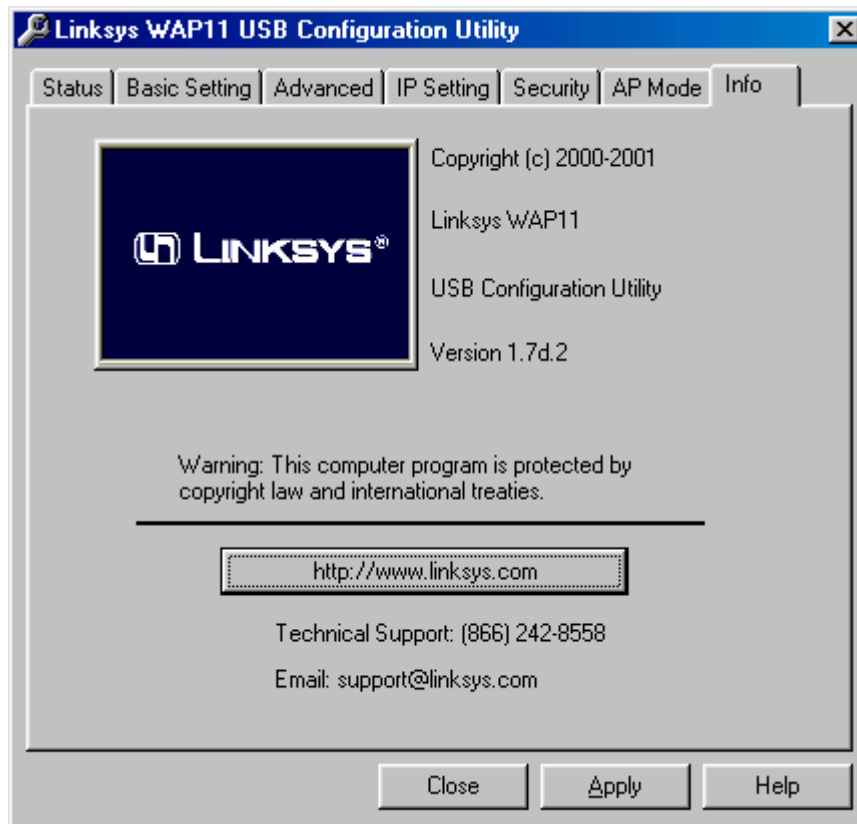


To do so, select the **AP Mode** tab, followed by selecting **Wireless Bridge** and then **Point to Point**. Then in the space provided, provide the MAC Address of the other WAP11 that becomes part of the wireless bridge. The MAC Address for each WAP 11 is provided on a label found on the underside of the device. Note: Once acting as a Wireless Bridge, the device will not act as an Access Point for additional Wireless clients.

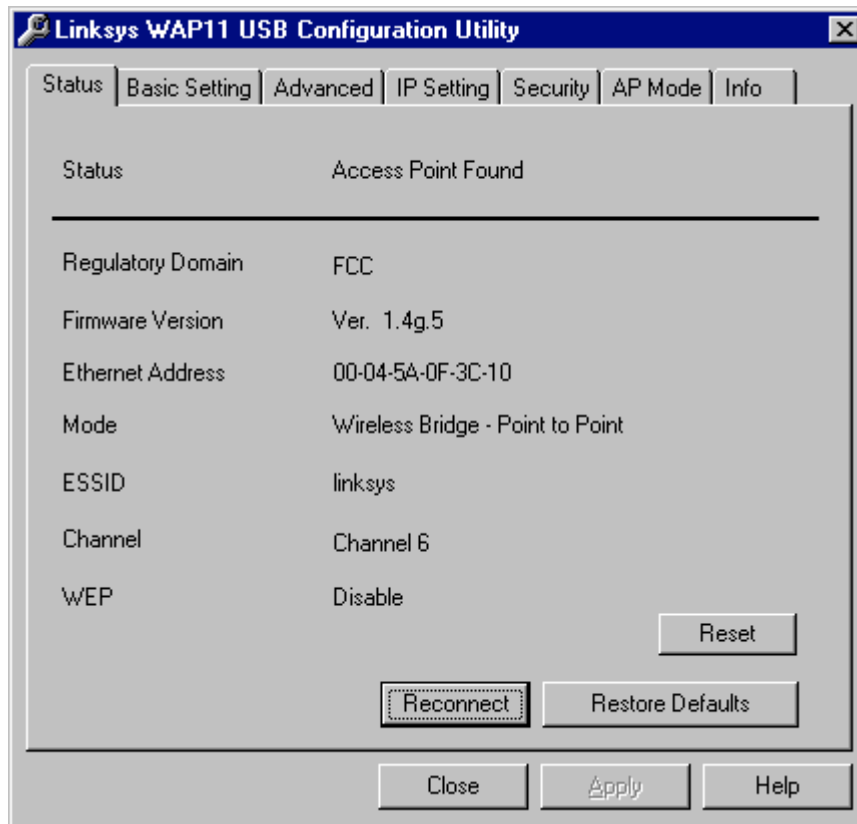
4. Next, you must configure the WAP11 with a unique IP Address. To do so, select the **IP Setting** tab and configure the **IP Address** and **IP Mask**.



5. Unless wireless data encryption is of interest or you need to make addition changes to setup due to operation on an existing wireless Ethernet environment, you may complete the setup process simply by selecting the **Info** tab, followed by selecting the **Apply** button to download the new configuration to the WAP11 via the USB connection.



6. Once the download process is complete, you can verify the new settings by selecting the **Status** tab and confirming that the *Mode* is set to *Wireless Bridge – Point* . Once satisfied with the settings for your environment, you may select **Close** to exit the Configuration Utility.



Follow steps 3 to 6 above for the *other* WAP11 before proceeding.

#### ConnectUPS SNMP/WEB Card Installation

Install the ConnectUPS SNMP/WEB Card in the UPS as described in its User Guide. Use your PC or Laptop and the supplied cable to configure the card's IP Address and associated parameters in a manner consistent with other devices on your network.

#### Hardware Installation

1. Install the first WAP11 by connecting it to your existing Ethernet network in a convenient location using an Ethernet Patch Cable.
2. Plug the supplied Power Adapter into the WAP11 and into a convenient AC source (UPS-protected AC is recommended).
3. The Power and Link LEDs should be lit, indicating that the device is ON and the wire-side Ethernet is connected. Note: The Link LED may blink indicating the presence of network traffic.
4. Install the second WAP11 near the ConnectUPS SNMP/WEB Card by connecting it to the card using a Cross-Over Ethernet Cable. Alternately,

you may connect it to an Ethernet hub using a non-crossed Patch Cable. The ConnectUPS will also need to be connected to the Ethernet hub using a non-crossed Patch Cable.

5. Plug the supplied Power Adapter into the WAP11 and into a convenient AC source (since you are near a UPS, use its output).
6. The Power and Link LEDs should be lit, indicating that the device is ON and the wire-side Ethernet is connected.

This completes the Hardware Installation

### **Using the Bridge**

Now that the Wireless Access Points are installed in a wireless bridge configuration, the ConnectUPS SNMP/WEB Card should be accessible on your network. A simple “ping” test can be performed by pinging the IP Address of the SNMP/WEB Card. If no response is received it may mean that the distance between the access points may be too great for consistent communications. You might be able to adjust the antenna orientation or adjust the location of the access points to improve performance.

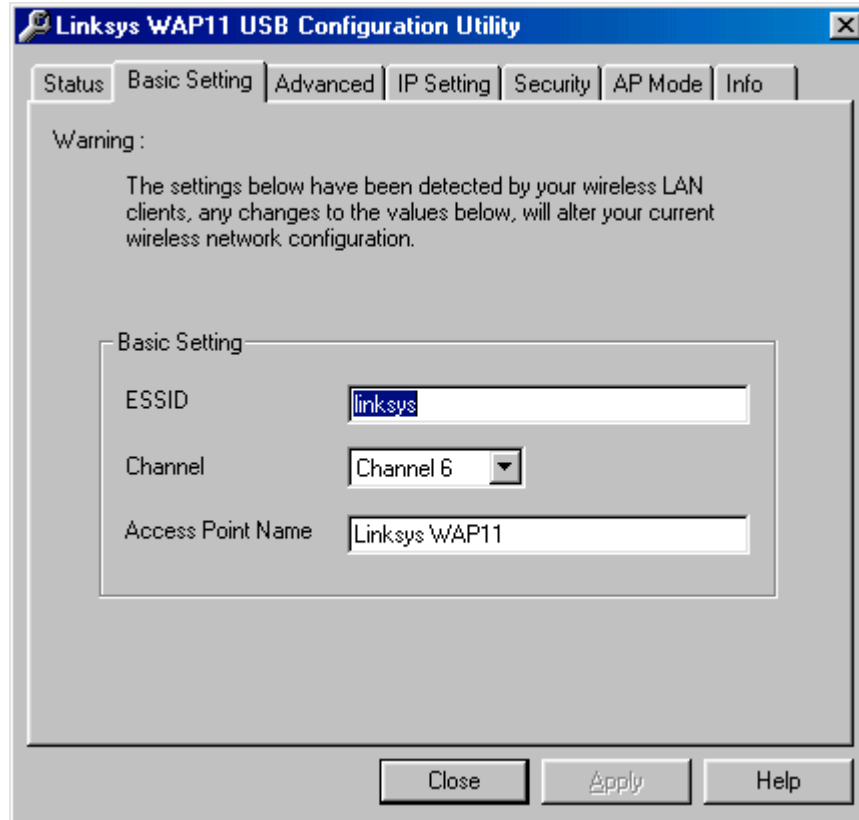
Once you succeed in pinging the ConnectUPS SNMP/WEB Card, you can then begin to use it just as you would if it were “wired” to your network.



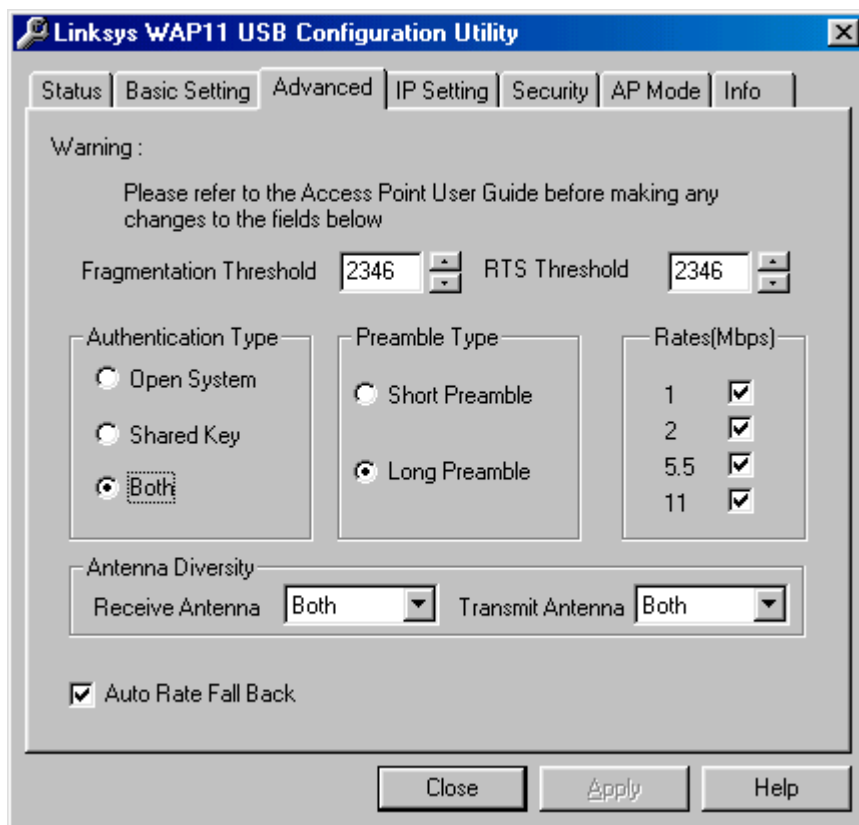
## Additional Configuration Screen that May be of Interest

During the configuration process, the following screens may be of interest if for specific (power user) environments.

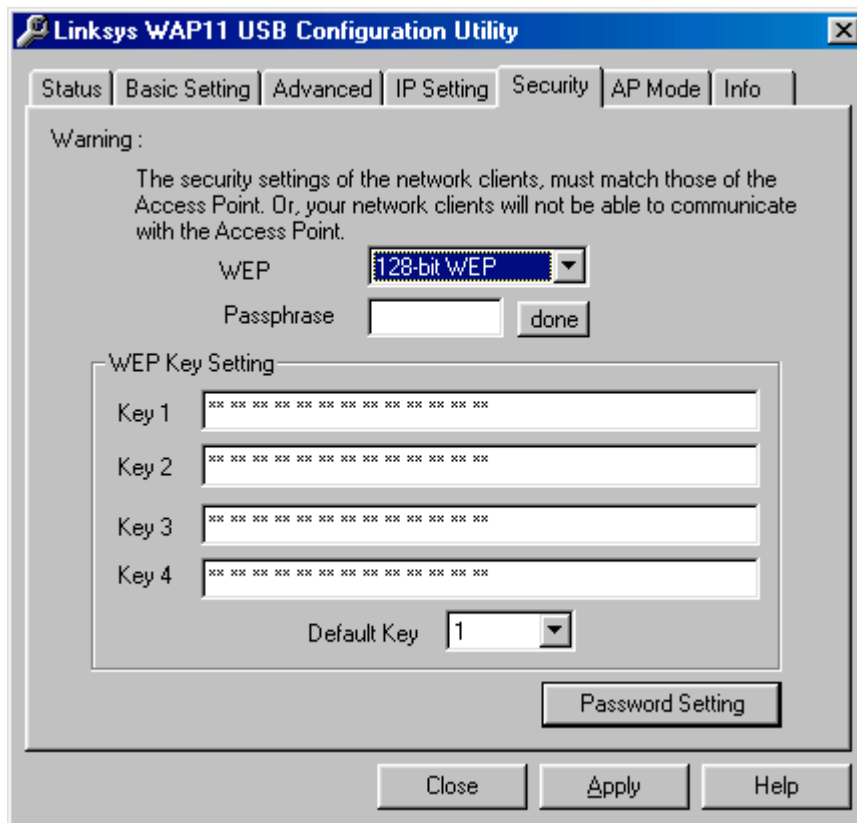
In case the WAP11 devices you configure for this application must coexist with other wireless devices, you may want to change the settings below the **Basic Setting** tab in relationship to the device's electronic ID and radio channel. Otherwise default setting will work for most environments.



The settings accessible below the **Advanced** tab allow you to adjust data rates and how the WAP11 will use the built-in antennas. For most environments, the default setting should be acceptable.



Although communications with a ConnectUPS SNMP/WEB Card typically is not considered a sensitive network activity, you may choose to enable security in the form of encryption. The WAP11 supports up to 128-bit WEP (Wireless Encryption Protocol). Since each WAP11 device configured for this environment will only communicate with a similarly configured WAP11 device, you need not worry about intrusions to your network from roaming wireless PCs. However, if you feel better about it, WEP can be enabled on each bridge device to keep your local IT Department happy. Settings are found under the **Security** tab.



The image shows a screenshot of the Linksys WAP11 USB Configuration Utility window, specifically the Security tab. The window has a title bar with the Linksys logo and the text "Linksys WAP11 USB Configuration Utility". Below the title bar is a tabbed interface with tabs for Status, Basic Setting, Advanced, IP Setting, Security (selected), AP Mode, and Info. The Security tab contains a "Warning" message: "The security settings of the network clients, must match those of the Access Point. Or, your network clients will not be able to communicate with the Access Point." Below the warning, there is a "WEP" section with a dropdown menu set to "128-bit WEP" and a "Passphrase" input field with a "done" button. Underneath is a "WEP Key Setting" section with four input fields labeled "Key 1", "Key 2", "Key 3", and "Key 4", each containing a series of "x" characters. Below these fields is a "Default Key" dropdown menu set to "1". At the bottom right of the Security tab is a "Password Setting" button. At the very bottom of the window are three buttons: "Close", "Apply", and "Help".

Linksys WAP11 USB Configuration Utility

Status Basic Setting Advanced IP Setting **Security** AP Mode Info

Warning :  
The security settings of the network clients, must match those of the Access Point. Or, your network clients will not be able to communicate with the Access Point.

WEP 128-bit WEP  
Passphrase done

WEP Key Setting

Key 1  
Key 2  
Key 3  
Key 4

Default Key 1

Password Setting

Close Apply Help