

Creating a Transparent Wireless Bridge With Ubiquiti AirOS

This guide will walk you through the steps of sharing (bridging) an internet connection in one building, and extending that same internet to another building. The same setup can be used to connect local area networks (LAN's) in two different buildings. Since this configuration is "transparent", it is a bridged connection and requires no routing.

Things that can be accomplished using this guide:

- Sharing a neighbors internet connection from across the street (must have their permission and must be legal from there provider).
- Bridging your internet/local area network with another building.
- Making a standard layer 2 transparent bridge for joining two LAN networks.

Items you will need:

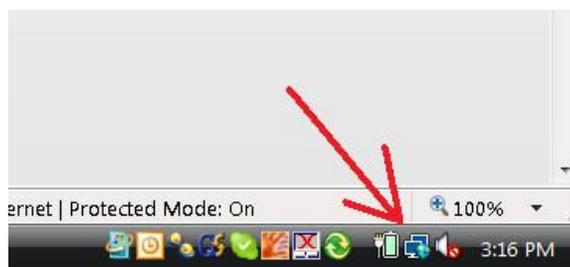
- Two UBNT devices such as NanoStation, PowerStation, PicoStation etc.
- Ethernet Cables for each device.
- Location to mount the units (either on a pole outside or using the UBNT Window Mounts).
- Line of Site between each mounting location.
- A PC or Laptop to do the configuration of the units.

Step 1: Connecting the UBNT device to your computer

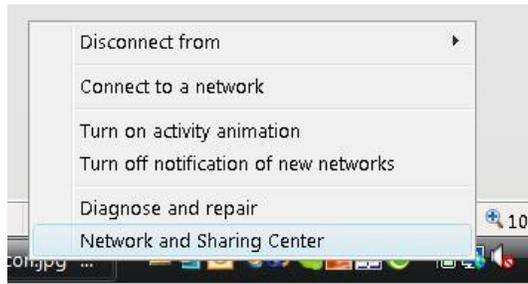
- Plug the provided power adapter into the wall, then connect the other side to the PoE splitter.
- Connect an Ethernet cable to the UBNT Device, then the other side to the PoE port on the PoE splitter.
- Next, connect a second Ethernet cable into the PoE splitters LAN port, then into the back of your computer.

Step 2: Configure your Windows computer to talk UBNT device

- Right click on your Network icon in the bottom right hand corner of the desktop (System Tray).



- Select the Network and Sharing option.



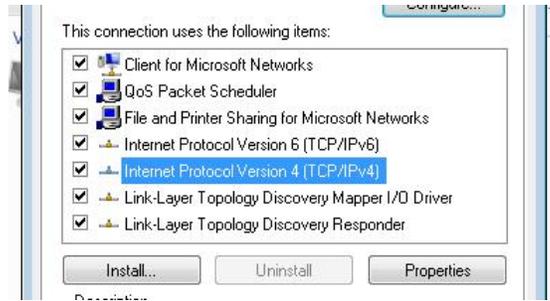
C) Select the Manage Network Connections link



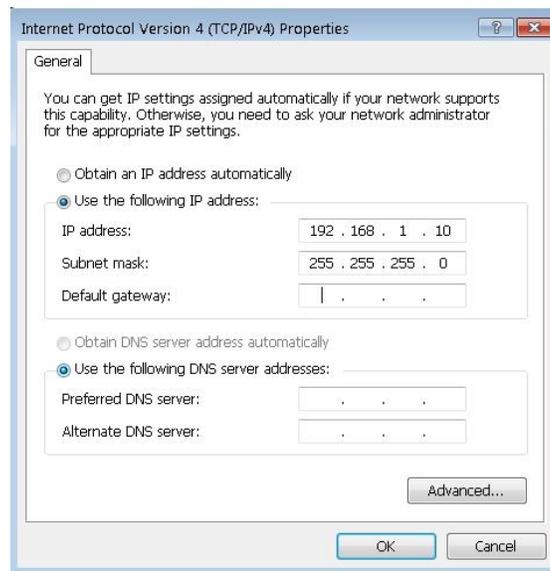
D) Right click on Local Area Connection and select the Properties link



E) Double click on the Internet Protocol version 4 option



F) Type in the information as seen to the right, then hit ok, and ok once more to return you to your desktop. Your system is now properly configured to talk with the UBNT device.



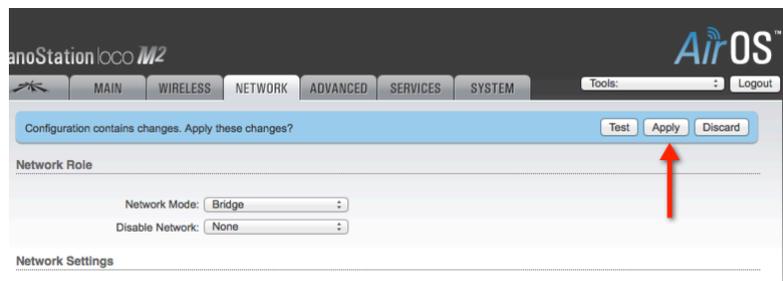
Step 3: Log Into the Ubiquiti Device

A) Launch your Web Browser. We have seen problems with any browser besides Internet Explorer so that is recommended.

B) Type this address into the address bar: 192.168.1.20

C) A pop up window will appear and you will enter ubnt for both the username and password field.

Note: After every configuration change, you will need to click the Change button and then the Apply button.



Step 4: Configure the Access Point (AP) End

Click the Wireless tab and set as follows (Wireless Security section is optional):

The screenshot displays the configuration interface for a NanoStation loco M2 device running AirOS. The interface is divided into several tabs: MAIN, WIRELESS, NETWORK, ADVANCED, SERVICES, and SYSTEM. The WIRELESS tab is selected, showing the 'Basic Wireless Settings' section. This section includes fields for Wireless Mode (set to 'Access Point WDS'), WDS Peers, SSID (set to 'ubnt'), Country Code (set to 'United States'), IEEE 802.11 Mode (set to 'B/G/N mixed'), Channel Width (set to '40 MHz'), Channel Shifting (set to 'Disabled'), Frequency (set to 'Auto'), Extension Channel (set to 'None'), Frequency List (set to 'Enabled'), Auto Adjust to EIRP Limit (checked), Output Power (set to '23 dBm'), and Max TX Rate (set to 'MCS 12 - 180' with 'Automatic' checked). Below this is the 'Wireless Security' section, which includes Security (set to 'WPA2'), WPA Authentication (set to 'PSK'), WPA Preshared Key (set to '9999999999' with 'Show' checked), and MAC ACL (set to 'Enabled'). Three callout boxes with red arrows point to specific settings: '1. CHANGE MODE' points to the Wireless Mode dropdown, '2. SET TO WPA2' points to the Security dropdown, and '3. SET A KEY, 10 DIGITS' points to the WPA Preshared Key field. A 'Change' button is located at the bottom right of the configuration area. The footer of the page reads '© Copyright 2006-2011 Ubiquiti Networks, Inc.'

B) Click the Network tab and set as follows:

The screenshot displays the 'Network' configuration page in the NanoStation loco M2 AirOS interface. The 'Network Role' section shows 'Network Mode' set to 'Bridge' and 'Disable Network' set to 'None'. A red arrow points to the 'Bridge' dropdown, with a callout box stating '4. LEAVE IN BRIDGE MODE'. The 'Network Settings' section shows 'Bridge IP Address' set to 'Static' with a red arrow pointing to the radio button, and a callout box stating '5. SET AS REQUIRED'. Other settings include IP Address: 192.168.1.21, Netmask: 255.255.255.0, Gateway IP: 192.168.1.1, MTU: 1500, and 'Auto IP Aliasing' checked. Below are sections for 'VLAN Network Settings', 'Firewall Settings', and 'Static Routes', each with an 'Enable' checkbox and a 'Configure...' button. A 'Change' button is located at the bottom right of the page.

Step 5: Configure the Station End

A) Click the Wireless tab and set as follows (Wireless Security section is optional):

The screenshot shows the configuration interface for a NanoStation M2. The 'WIRELESS' tab is selected. The 'Basic Wireless Settings' section includes: Wireless Mode (Station WDS), SSID (ubnt), Lock to AP MAC (00:27:22:4A:FC:53), Country Code (United States), IEEE 802.11 Mode (B/G/N mixed), Channel Width (Auto 20/40 MHz), Channel Shifting (Disabled), Frequency Scan List (Disabled), Auto Adjust to EIRP Limit (checked), Output Power (23 dBm), and Max TX Rate (MCS 12 - 78 [180] Automatic). The 'Wireless Security' section includes: Security (WPA2), WPA Authentication (PSK), and WPA Preshared Key (9999999999). Three red arrows point to the 'Station WDS' dropdown, the 'WPA2' dropdown, and the 'WPA Preshared Key' field. Three callout boxes are present: '1. CHANGE MODE' pointing to the Wireless Mode dropdown, '2. SET TO WPA2' pointing to the Security dropdown, and '3. SET A KEY, 10 DIGITS' pointing to the WPA Preshared Key field. A 'Change' button is at the bottom right. The footer contains the copyright notice: © Copyright 2006-2011 Ubiquiti Networks, Inc.

B) Click the Network tab and set as follows:

NanoStation loco M2 AirOS™

MAIN WIRELESS NETWORK ADVANCED SERVICES SYSTEM Tools: Logout

Network Role

Network Mode: Bridge
Disable Network: None

Network Settings

Bridge IP Address: DHCP Static
IP Address: 192.168.1.21
Netmask: 255.255.255.0
Gateway IP: 192.168.1.1
Primary DNS IP:
Secondary DNS IP:
MTU: 1500
Spanning Tree Protocol:
Auto IP Aliasing:
IP Aliases: Configure...

VLAN Network Settings

Enable VLAN:

Firewall Settings

Enable Firewall: Configure...

Static Routes

Static Routes: Configure...

Change

Once the devices have been configured and confirmed that they are working, you may wish to change the IP addresses to coincide with your network addressing scheme.