

# BEGINNER'S SETUP GUIDE for NANOSTATION 2

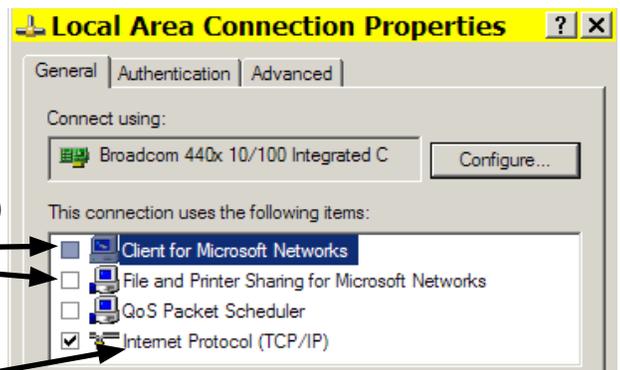
and other Ubiquity devices using AirOS firmware Windows XP

Make sure the Nanostation 2 (Nano for short) is connected to your computer's network card with network cables, via the power injector supplied with 12V (either from the included wall-wart or another 12VDC source). There should then be at least one LED lit on the back of the Nanostation. On the original Nanostation shipping box, find and write down the IP address (should be 192.168.1.20), user name and password (should both be "ubnt"). Do not loose this information!

**Setting up steps:** 1) Set your computer to communicate with Nanostation  
 2) Program Nanostation as receiver (station) and router  
 3) Choose and connect to a WIFI signal

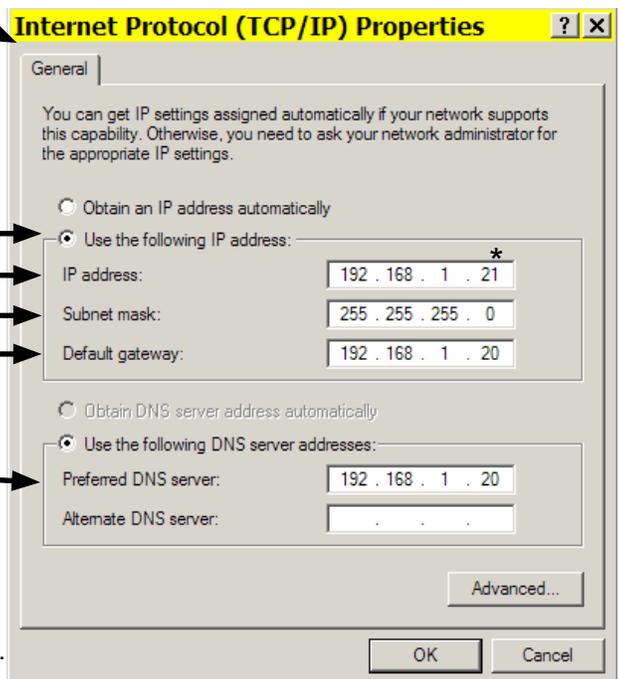
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- Open Start/ Control panel/ **Network Connections** (based on Windows XP).
- Enable your network card: under "LAN or High Speed Internet", right-click on "**Local Area Connection**" and select "**Enable**" (if it's already enabled the option would be "Disable"; just leave as is).
- If there is a built in WIFI card, it should be disabled (right click and choose "Disable" if not already so).
- Right click on "**Local Area Connection**" and select "**Properties**" →



- If you do not need to share files or a printer on your local network you should disable (un-tick) "Client..." and "File and..." for added security.

- Double click on "**Internet Protocol**" →



- Fill in as pictured here:  
 We're entering a static (fixed) IP address →  
 This will be your computer's IP \* →  
 This is always so →  
 This is the IP of the Nanostation →  
  
 Same here →  
 (The Nanostation will be acting as a DNS server)

\* Note: The last number could be any number from 1 to 254 except 20 which is taken.

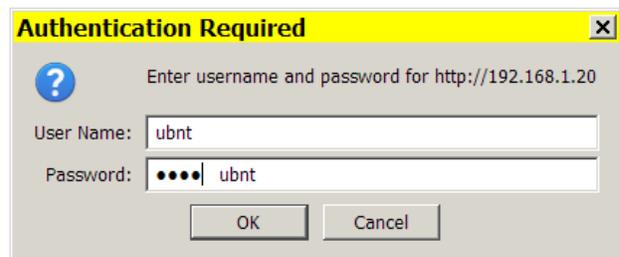
- Click "**OK**" twice. There should be 2 LEDs lit on the Nanostation.

## 2 NOTES (additional explanations; not required reading for success.)

- **AirOS firmware versions** (firmware on a device is like the operating system on a computer): so far Nanostations have been shipping with version 2.2.1 AirOS firmware as pictured here in the screen shots. If you receive a unit with a later firmware (or if you update it later), additional settings may be visible.
- **Directional antenna:** The built in antenna points to the front of unit (LEDs are on back) with a horizontal beam width of about 60 degrees.
- **Resetting device:** Should you be unable to connect to the Nanostation after changing any settings (by mistake), it can be reset to it's original default configuration (a hard reset) by pressing in the reset button (hole inside cover) for 20-30 seconds, with the power on. The LED light should flash after releasing button.

- Open your browser (e.g. Internet Explorer, Firefox, Opera, etc.) and type in address bar: **http://192.168.1.20** (The default address of the Nano) then press the Enter key.

- Type in as follows and press **OK** →  
(If this window did not appear, there may be a problem with the wiring, the network card or a firewall).



- Select **“Network”** tab and change as follows:

The Nanostation will act as a router which makes WIFI cruising life easier.

(This refers to the WIFI side of the Nanostation)

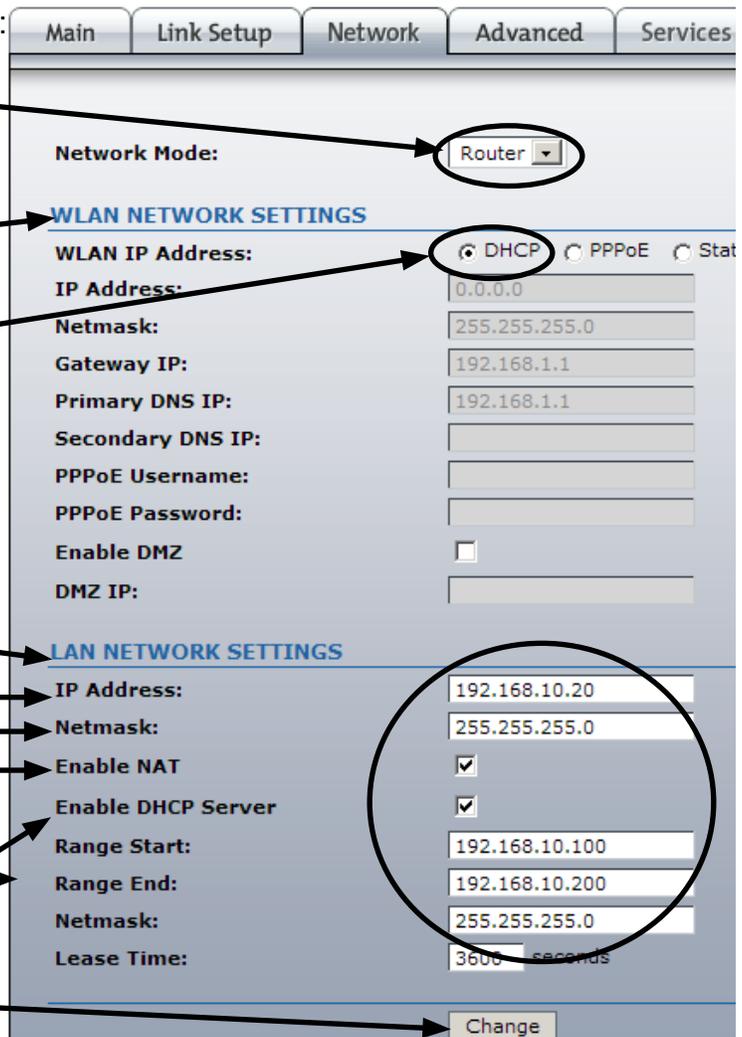
The Nanostation will be assigned an IP address, gateway and DNS server by the WIFI access point you connect to later.

(This refers to the local wired side = you)

This will be the Nano's new IP address Always so

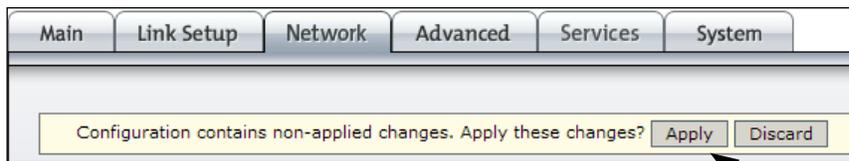
Allows the LAN to communicate with the WLAN

Will allow you to connect a computer which has it's network setting to "Obtain an IP address and DNS server automatically".



- Click **“Change”**

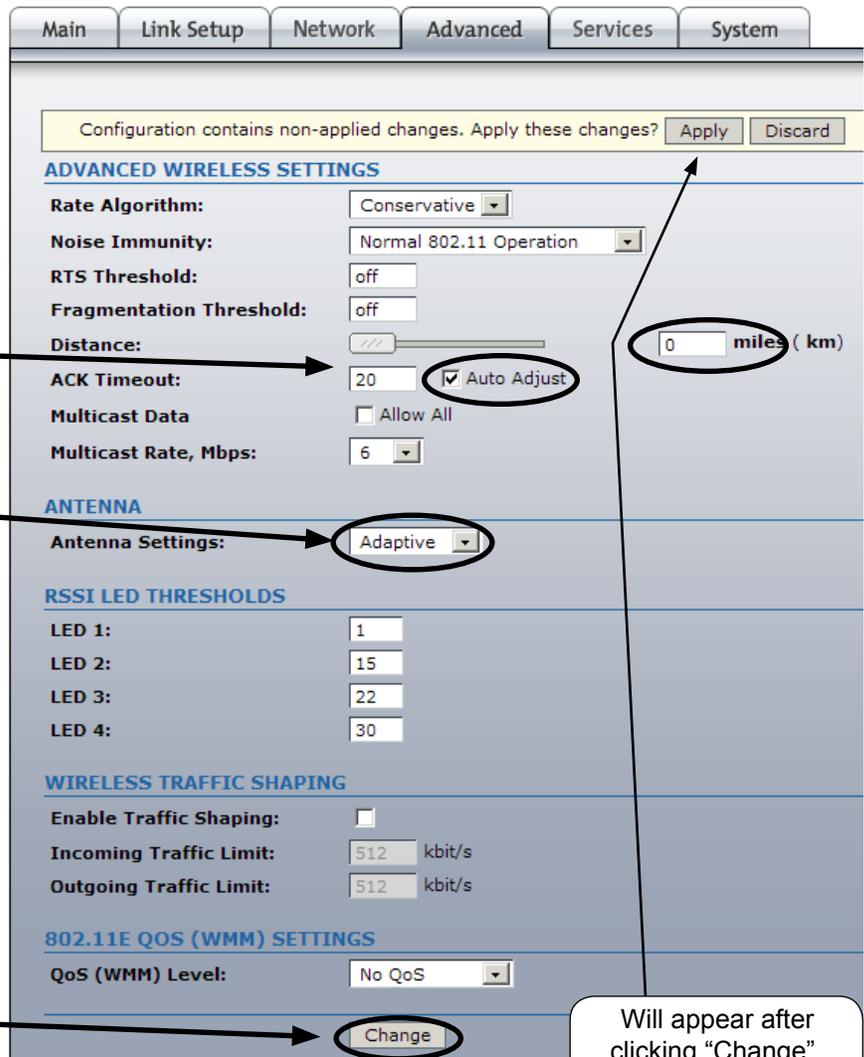
- You'll notice that this now appears at the top of the window:



The changes made on the previous page are memorized but not yet in effect. Only after clicking “**Apply**” with they take effect. Since we still need to make some other changes, we’ll “Apply” them all later.

DO NOT APPLY YET!

- Click on the “**Advanced**” tab →



Will appear after clicking “Change”, but do NOT “Apply” yet.

### Notes

- Just like there are several ways to skin a cat, the network settings of the Nanostation and computer can be many. The settings here have been found most convenient while cruising because connecting to new WIFI access points in different harbours require a minimum of effort.
- Since the default Nano IP address is in the very common range 192.168.1.x, and we do not want to risk having the same range on our own local LAN as the WLAN ashore, we have changed the original Nano IP from 192.168.1.20 to 192.168.10.20. We have also activated the Nano’s DHCP server which means that the computer can get network settings assigned automatically (an IP in the range 192.168.10.100 to 200, plus the IPs of Gateway and DNS server = IP of the Nano). We still need to set the computer to acquire the IP automatically (see end of next page).

- Click on the “**Link Setup**” tab →

Change Nano mode to “**Station**”  
(i.e. receiver or ‘client’)

Make sure output power is on max

Leave rest as shown.

Click “**Change**”

- Click “**Apply**” when it appears at the top:  
Now all the changes will come into effect.

• **Note:** At this point communication with the Nano is lost because we still need to change the computers IP address to be the same range as the Nano (192.168.10.x). The setting can be either fixed (manually to e.g. 192.168.10.21), or **automatic** which is simpler and more flexible (as it allows you to take the computer to another wired network and automatically acquire the settings without having to fiddle):

- Open Start/ Control panel/ **Network Connections**
- Right click on “**Local Area Connection**” and select “**Properties**”
- Double click on “**Internet Protocol**” →

Change like this:

- Click “**OK**” twice.

From now on, all these settings will remain in place and you'll only need to take the steps in #3 to connect to an new WIFI access point. That's a relief!

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• In the browser address bar type **http://192.168.10.20** (the new address of the Nano) then press the Enter key.

• Click on the “**Link setup**” tab, then on “**Select**” (a WIFI signal):

MAC address	ESSID	Encryption	Signal, dBm	Frequency, GHz	Channel
00:60:B3:AB:D1:AD	NewBernGrandMarina	-	-90	2.462	11
00:18:39:6B:74:C9	McCotter	WPA	-94	2.437	6
00:17:94:17:46:00	stayonline	-	-83	2.437	6
00:60:B3:AB:DD:FC	NewBernGrandMarina	-	-82	2.437	6
00:22:6B:45:BF:83	TehHax0rs	WPA	-80	2.462	11
00:17:5A:1E:99:B0	stayonline	-	-72	2.462	11
00:17:59:09:23:40	stayonline	-	-64	2.462	11

Select a strong signal (without encryption) by clicking in the button. Then click “**Select**”

Clicking once on “**Signal**” will sort the list with the strongest one at the bottom

This is the strongest in the list. Any figure lower than about 90 is normally usable.

• Click on “**Change**” then “**Apply**”. That’s it. To verify the connection follow the next step.

• Click on “**Main**” tab. This page has no settings, only information to confirm a connection:

A number here means that the Nanostation has associated with the WIFI base

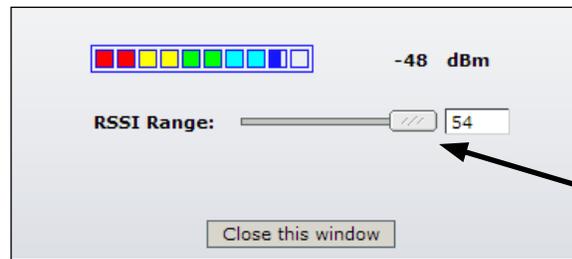
This number will increase with long distance connections

A number here means that the Nanostation has received an IP address. See below.

Note: The numbers here tell us that the WIFI access point has assigned all the necessary numbers to the Nanostation for connecting to the internet. Numbers will vary with access points. If blank, internet access will not work.

DHCP CLIENT INFORMATION	
IP address	172.16.0.76
Netmask	255.255.254.0
Gateway IP	172.16.0.1
Domain Name	e-centre.net
DNS IP	172.16.0.1
DHCP Lease Time	12:00:00
DHCP Lease Time Left	09:15:11

- Clicking on “**Align antenna**” will bring up a received signal strength indicator, useful for improving signals by rotating the Nanostation:



Since the number is negative, a lower figure is stronger.

Moving this slider allows the signal bar indicator to better display different strengths.

- Assuming you have connected to an ‘live’ WIFI access point, you should be ready to access the internet. This may involve logging-in to a marina or hotel welcome page, or paying for access.
- To connect to another WIFI access point in the future, just log-in to the Nanostation with your browser and repeat step #3. See second recommendation below.
- An alternative to step #3 is to type “**Any**” in ESSID (second line on tab “Link Setup”), then Save and Apply. From then onwards, the Nano will automatically connect to any un-encrypted access point, without any intervention from your part. In locations with many WIFI signals, it might not end up being the most desirable one.
- Connecting to an encrypted wireless network (WEP or WPA) require knowing the encryption key and performing additional steps in #3.
- NOTES are meant as additional explanations. They are not required reading for success.

### Recommendations

- For **security** use a firewall (e.g. Windows firewall or free Zone Alarm) and a virus scanner (e.g. Norton or free AVG).
- Make a **bookmark** (or ‘favorite’) to the Nanostation address (<http://192.168.10.20>) and save the log-in info in your browser for easier access.
- White **cable ties** as supplied for mounting the device may fail alter exposure to sunlight. It’s better to use black ties, string or metal hose clamps.

### Online resources

- Download a more **recent firmware** (improvements and bug fixes; not necessary but recommended) at: <http://www.ubnt.com/support/ns2.php> . Once downloaded, go to your Nano address, click on “**System**” tab, then “**Upgrade**”. Previous configuration settings will not be lost.
- For an **advanced manual** on the AirOS firmware save this web page: <http://wiki.ubnt.com/wiki/index.php/AirOS>

For questions and to order a copy please e-mail [nano@3dym.com](mailto:nano@3dym.com)