Networking with StarBand

Networking with a Self-hosted Satellite Modem

RVNETWORKING.COM

Satellite

Network Operations Center (NOC)

Firewall/NAT

Leased Line

Wireless Router

148.x.y.z+1 (WAN)

192.168.2.1 (LAN)

192.168.2.3

Internet

StarBand Nova 148.x.y.z

192.168.2.2

192.168.2.4
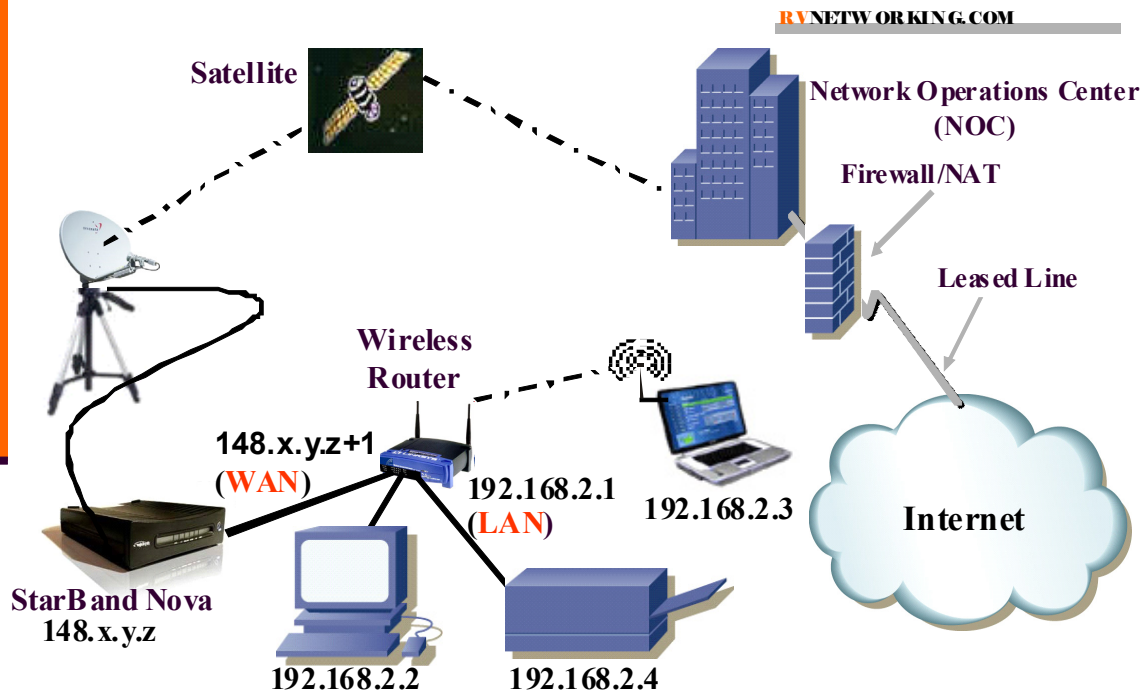
Networking Information

Your satellite connection can be shared among multiple computers. Shown above is a typical home/RV network. Networking with today's *self-hosted* modems like the StarBand Nova is pretty easy. In fact, with a wireless router such as a Cisco Linksys router, it is literally "*Plug and Play*".

However, you should not use it with the default configuration, because it is not secure. At the very least, you should change the following parameters:

• SSID - This is your wireless network name. It is what you will see when you **View Available Wireless Networks**, in Windows. By default, all wireless networks that use a Linksys router are called **linksys** if an older model and the model number if a new model.

• Channel - There are only three non-overlapping channels for the more common B/G wireless LANs (WLANs): 1, 6, and 11. The newer N standard has additional options, but it is recommend that you use the standard 20 MHz channels and stick to 1, 6, and 11.

By default, most wireless routers or access points will use channel 6, which is prone to interference from both sides AND more likely to encounter interference from another wireless device also using the default.

Use either channel 1 or 11, to reduce the chance of interference and allow it only from one side. Be prepared to change the channel, if you run into interference.

- Administrator password - If you don't change this from **admin**, anyone who can see your WLAN can connect to your router and change its password or anything else.

- Enable and configure WEP - Use only the more secure 128-bit WEP. If you plan to share your satellite connection with friends, enter the WEP key directly, as 26 hexadecimal digits, from 0 to 9, or A to F.

  If you will only have newer Windows systems connecting to your WLAN, you can use the even more secure WPA2 personal. If you will have Windows XP devices or Macintosh compuyters connect, there can be compatibility issues with WPA2.

You should also save your router's configuration, so that if you ever have to reset your router to its default parameters, you can easily restore the configuration. The following subsections explain how to connect to your router and change these things and more.

How to Connect to Your Linksys Wireless Router

Your Linksys router is manageable, using a standard web browser interface. Make sure you do NOT have a proxy set in your browser and simply enter the local IP address (192.168.1.1, by default) into the browser address bar and hit **<ENTER>**. When you are prompted for a login and password, hit the **<TAB>** key, to go to the password field, type the password (case sensitive), and then hit **<ENTER>**.

How to Change the Local IP address and Maximum Users

With the StarBand Nova modem, the local IP address should be changed from 192.168.1.1 to 192.168.2.1. This is because the Nova modem uses the address 192.168.1.1 and this can cause an address conflict, if you don't change it on the router. Here is how to change the local IP address:

Step 1 Connect to the device as explained above.

Step 2 You will be on the **Setup** (top tab) **-> Basic Setup** (bottom tab) page.

Step 3 In the **Network Setup** area, change the third text box of **Local IP Address** from "1" to "2", so that the final address displayed is 192.168.2.1.

Step 4 In the **Network Address Server Settings (DHCP)** area, change the **Maximum Number of DHCP Users** from "50" to a small value, such as "5" or "6".

Step 5 Click **Save Settings** to save your change.

How to Disable Wireless, Change the SSID, or Change the Channel

It is sometimes necessary to move to a different frequency (channel) to avoid another source of interference. Here is how to change the channel:

Step 1 Connect to the device as explained above.

Step 2 Click **Wireless** (top tab) **-> Basic Wireless Settings** (bottom tab).

Step 3 If you have a newer model, you may need to first select **Manual**.

Step 4 To disable wireless access, select **Disabled** from the **Wireless Network Mode** popup menu. To again enable wireless access select **B-only** (to only allow the older/slower 802.11b devices), **G-only** (to only allow the newer/faster 802.11g devices), or **Mixed** (to allow both b and g devices) from the popup menu.

Step 5 To change the SSID, just select the current SSID text in the **Wireless Network Name** field (i.e., linksys) and type the name you want. Avoid special characters.

Step 6 To change the channel, click on the popup menu labeled **Wireless Channel** and select the channel you want. Remember that the only three non-overlapping channels are 1, 6, and 11. If you suspect interference, try changing the channel.

Step 7 Click **Save Settings** to save your changes.

How to Change the Administrator Password

Here is how to change the password:

Step 1 Connect to the device as explained above.

Step 2 Click **Administration** (top tab) **-> Management** (bottom tab).

Step 3 In the **Router Password - Local Router Access** section, enter the new password twice.

Step 4 Click **Save Settings** to save your change.

How to Enable and Configure WEP

Here is how to enable and configure WEP:

Step 1 Connect to the device as explained above.

Step 2 Click **Wireless** (top tab) **-> Wireless Security (bottom** tab).

Step 3 Click on the popup menu labeled **Security Mode** and select **WEP**.

Step 4 Click on the popup menu labeled **WEP Encryption.** Select **128 bits 26 hex digits**.

Step 5 In the **Key 1** text field, type 26 characters, from 0 to 9 and A to F. This will be your WEP key.

Setting the WEP key directly is recommended, because the only common denominator among Wi-Fi devices using WEP is the hexadecimal key. Many wireless clients allow you to enter a "*passphrase*" and generate the hex key from that. But, many do not. For example, anyone that uses Windows XP wireless for configuring cannot use a passphrase. For this reason, I recommend setting the key on the wireless router directly in hexadecimal.

You can use the zero like the letter "O" and the letters A to F, and spell words or use numbers that are meaningful to you. For example, you could spell "badf00dbadcafe1234facef00d". Or, you could use two 10-digit phone numbers and one 6-digit date, for a total of 26 characters.

Step 6 Click **Save Settings** to save your changes.

How to Save the Configuration

It is occasionally necessary to completely reset wireless devices to their original "*out-of-the-box*" state. As long as the latest configuration has been saved, it is fairly simple to restore after the reset.

Here is how to save the configuration:

Step 1 Connect to the device as explained above.

Step 2 Click **Administration** (top tab) **-> Config Management** (bottom tab).

Step 3 Click **Backup** to save the current settings.

Step 4 Save the file like any other file on your Windows PC hard drive, giving it a meaningful name.

How to Reset the Router

To completely reset a Cisco Linksys router to its original "out-of-the-box" state, you need to depress the small recessed button on the back with a pen or other pointed object. Hold the button in until one or more of the lights on the front blink. Then, remove power while continuing to hold the button in. After power has been removed, release the button, wait 15-20 seconds and power the device back on.

How to Restore the Configuration

Step 1 Connect to the device as explained above, except the password will be **admin**, since it has been reset. It's address will always be 192.168.1.1.

Step 2 Click **Administration** (top tab) **-> Config Management** (bottom tab).

Step 3 Click **Browse** and then browse to the file on your PC's hard drive and click **Open**.

Step 4 Click **Restore** to restore the previous settings.

How to View Network Status Information

Here is how to check the status:

Step 1 Connect to the device as explained above.

Step 2 Click **Status** (top tab) **-> Router**, **Local Network**, or **Wireless** (bottom tab).

More Information

There are screen shots of each of the pages on the WRT54G/GL router, along with some additional Wi-Fi information on the RV2WaySat.com web site:

http://www.rv2waysat.com/Rally2006/Handouts/Wi-Fi-Networking.pdf

Your Network Information

Write the information for your network here:

- Local IP Address:
- Network Name (SSID):
- Channel:
- Adminstrator Password:
- Encryption:
- WEP Key: