RT-N13 SuperSpeed N
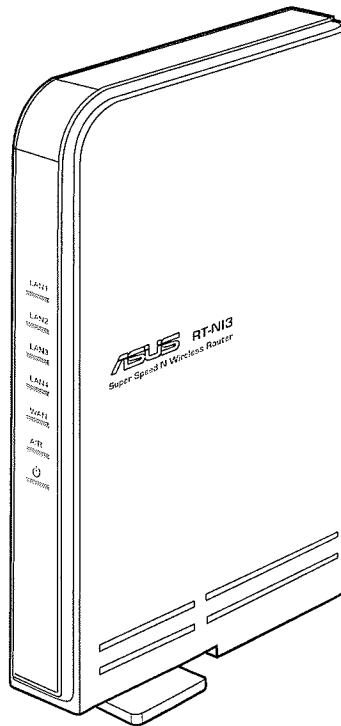# Wireless Router

User Manual

Manufacturer Contact Information

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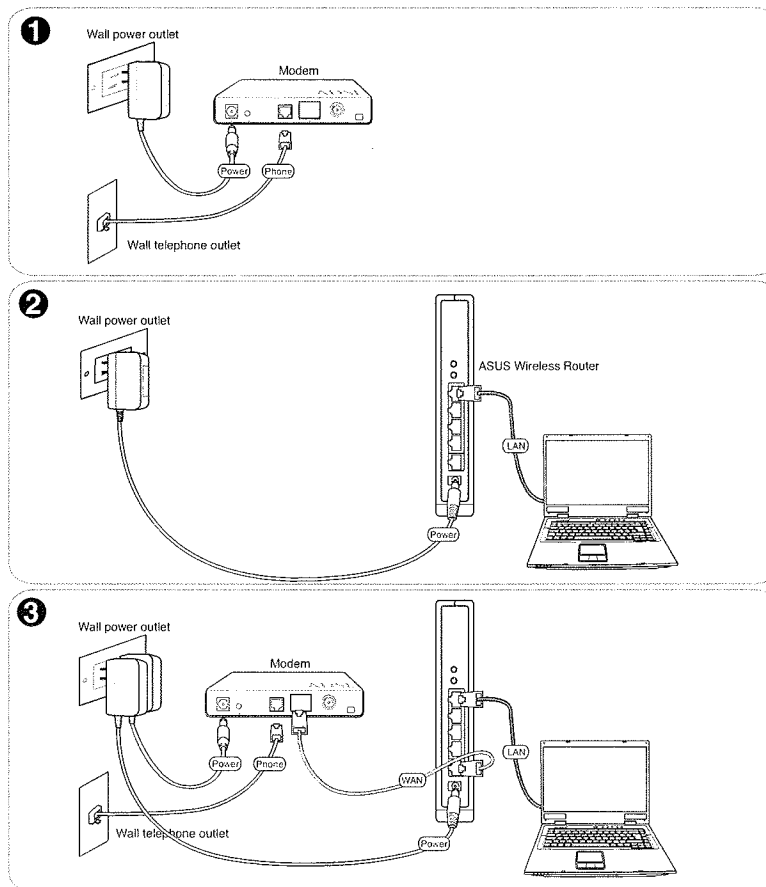|	
Components:	+49-01805-010923
Fax:	+49-2102-9599-11
Online support:	support.asus.com

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1. Package contents

- RT-N13 wireless router x 1
- Power adapter x 1
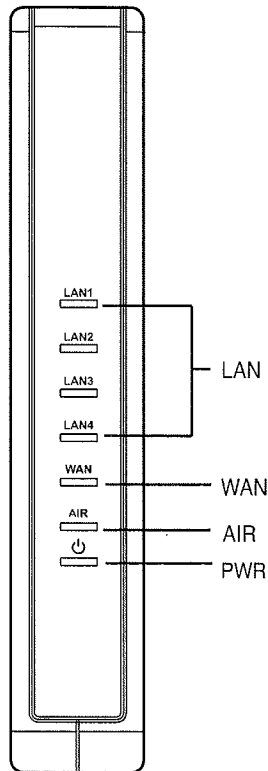- Utility CD x 1
- RJ45 cable x 1
- Quick Start Guide x 1

2. Connecting ADSL modem and wireless router

1) Cable connection

2) Status indicators

```
      LAN1
      ┌──┐
      └──┘
      LAN2
      ┌──┐
      └──┘      ─ LAN
      LAN3
      ┌──┐
      └──┘
      LAN4
      ┌──┐
      └──┘
      WAN
      ┌──┐
      └──┘      ── WAN
      AIR
      ┌──┐
      └──┘      ── AIR
      ⏻
      ┌──┐
      └──┘      ── PWR
```

PWR (Power)

Off	No power
On	System ready
Slow blinking	Firmware upgrade failed
Fast blinking	WPS processing

AIR (Wireless Network)

Off	No power
On	Wireless system ready
Blinking	Transmitting or receiving data (wireless)

WAN (Wide Area Network)

Off	No power or no physical connection
On	Has physical connection to an Ethernet network
Blinking	Transmitting or receiving data (through Ethernet cable)

LAN 1-4 (Local Area Network)

Off	No power or no physical connection
On	Has physical connection to an Ethernet network
Blinking	Transmitting or receiving data (through Ethernet cable)

3. Getting started

The ASUS RT-N13 Wireless Router can meet various working scenarios with proper configuration. The default settings of the wireless router may change to meet your individual needs. Thus, before using the wireless router, check the basic settings to ensure that they all work in your environment.

ASUS provides a utility named WPS for fast wireless configuration. If you would like to use WPS for your router configuration, refer to chapter 5 for details.

Note: Wired connection for initial configuration is recommended to avoid possible setup problems due to wireless uncertainty.

1) Wired connection

The RT-N13 Wireless Router is supplied with an Ethernet cable in the package. The wireless router has an integrated auto-crossover function. Thus, you can either use a straight-through or a crossover cable for wired connection. Plug one end of the cable to the LAN port on the rear panel of the router and the other end to the Ethernet port on your PC.

2) Wireless connection

For establishing wireless connection, you need an IEEE 802.11b/g/n compatible WLAN card. Refer to your wireless adapter user manual for wireless connection procedures. By default, the SSID of the wireless router is "default" (in lower case), encryption is disabled and open system authentication is used.

3) Setting IP address for wired or wireless client

To access the RT-N13 Wireless Router, you must have the correct TCP/IP settings on your wired or wireless clients. Set the IP addresses of the clients within the same subnet of RT-N13.

Getting an IP address automatically

The RT-N13 Wireless Router integrates DHCP server functions, thus, your PC gets an IP address automatically.

Note: Before rebooting your PC, switch ON the wireless router and ensure that the router is ready.

## Setting up the IP address manually

To manually set the IP address, you need to know the default settings of the wireless router:

- IP address 192.168.1.1

- Subnet Mask 255.255.255.0
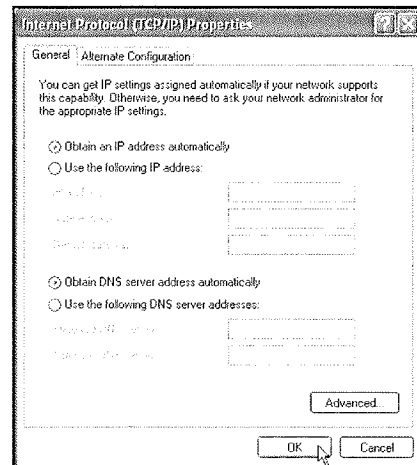
To set up the connection with a manually assigned IP address, the address of your PC and the wireless router must be within the same subnet:

- IP address: 192.168.1.xxx (xxx can be any number between 2 and 254. Ensure that the IP address is not used by other device)

- Subnet Mask: 255.255.255.0 (same as RT-N13)

- Gateway: 192.168.1.1 (IP address of RT-N13)

- DNS: 192.168.1.1 (RT-N13), or assign a known DNS server in your network.
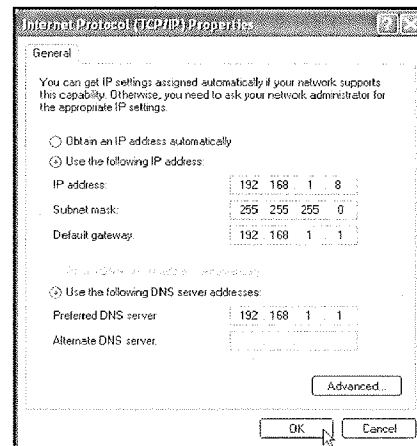
4) Configuring the wireless router

Follow the steps below to enter the Web configuration interface of RT-N13.

1. Enter the following address in your web browser: http://192.168.1.1

2. Key in the default user name and password in the login pop-up window, then click **OK**. For your reference, the following are the default login information of your device.

- User name: admin

- Password: admin

After logging in, you can see the ASUS Wireless Router home page.

The homepage displays quick links to configure the main features of the wireless router.
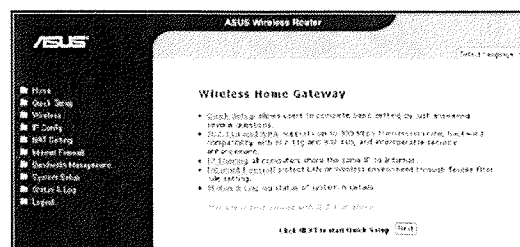
5) Quick setup

To start quick setup, click **Next** to enter the "Quick Setup" page. Follow the instructions to setup the ASUS Wireless Router.

1. Select your time zone and click **Next**.

2. ASUS wireless router supports five types of ISP services: cable, PPPoE, PPTP, static WAN IP, and Telstra BigPond. Select your connection type and click **Next** to continue.

Cable or dynamic IP user

If you are using services provided by cable ISP, select **Cable Modem or other connection that gets IP automatically**. If your ISP provides you with the hostname, the MAC address, and the heartbeat server address, fill these information into the boxes on the setting page; if not, click **Next** to skip this step.

PPPoE user

If you are using PPPoE services, select **ADSL connection that requires username and password**. It is known as PPPoE. You need to input the username and password provided by your ISP. Click **Next** to continue.

PPTP user

If you are using PPTP services, select **ADSL connection that requires username, password and IP address.** Fill in the username, password and IP address provided by your ISP into the fields. Click **Next** to continue.

Static IP user

If you are using ADSL or other connection type that uses static IP address, select **ADSL or other connection type that uses static IP address.** Input the IP address, subnet mask, and default gateway provided by your ISP. You can specify DNS servers, or get DNS information automatically.

3. To set up your wireless interface, specify an SSID (Service Set Identifier), which is a unique identifier attached to packets sent over WLAN. This identifier emulates a password when a device attempts to communicate with your wireless router via WLAN.

If you want to protect transmitted data, select a **Security Level** to enable encryption methods.

Medium: Only users with the same WEP key settings can connect to your wireless router and transmit data using 64bits or 128bits WEP key encryption.

High: Only users with the same WPA pre-shared key settings can connect to your wireless router and transmit data using TKIP encryption.

4. Input four sets of WEP keys in the WEP Key fields (10 hexadecimal digits for WEP 64bits, 26 hexadecimal digits for WEP 128bits). You can also let the system generate the keys by inputting a Passphrase. Record the Passphrase and the WEP keys in your notebook, then click **Finish**.

   For example, if we select WEP 64bits encryption mode and input 11111 as the Passphrase, the WEP Keys are generated automatically.

5. Click **Save&Restart** to restart the wireless router and activate the new settings.

6. To connect the wireless router from a wireless client, you can use Windows® Wireless Zero Configuration service to set up the connection. If you use ASUS Wireless Card on your computer, you can use the One Touch Wizard utility supplied in WLAN Card support CD for wireless connection.

Configuring ASUS WLAN Card with One Touch Wizard

If you have installed ASUS wireless card together with its utilities and drives on your PC, click **Start -> All Programs -> ASUS Utility-> WLAN Card -> One Touch Wizard** to launch the One Touch Wizard utility.
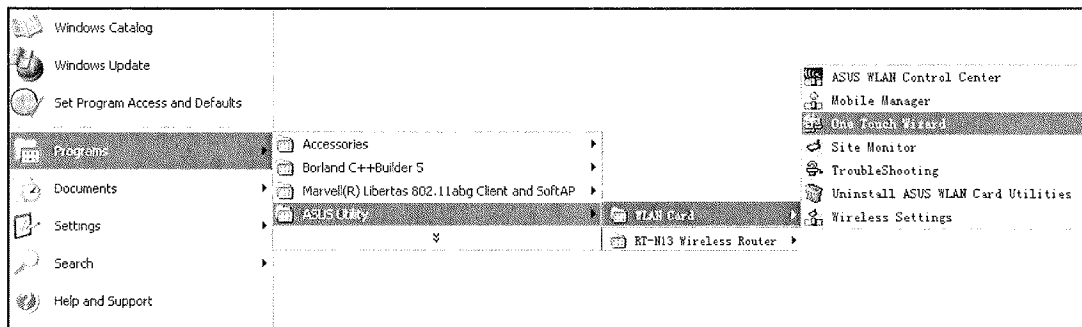
1) Select **Connect to an existing wireless LAN (Station)** radio button and click **Next** to continue.
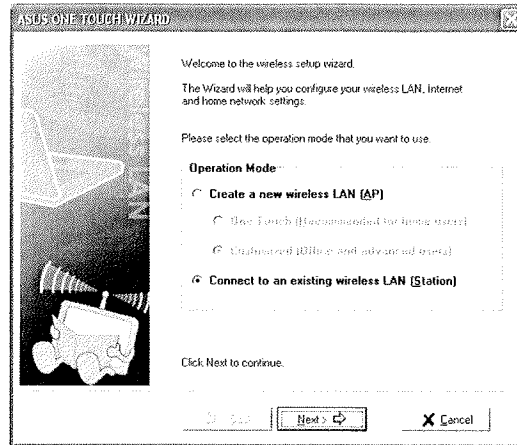
2) One Touch Wizard searches and displays the available APs in the **Available Networks** list. Select RT-N13 and press **Next** to continue.
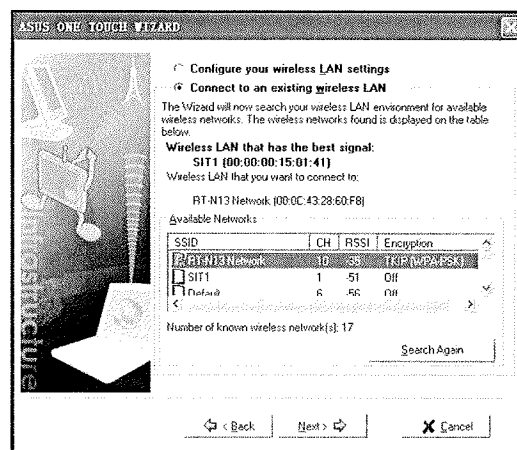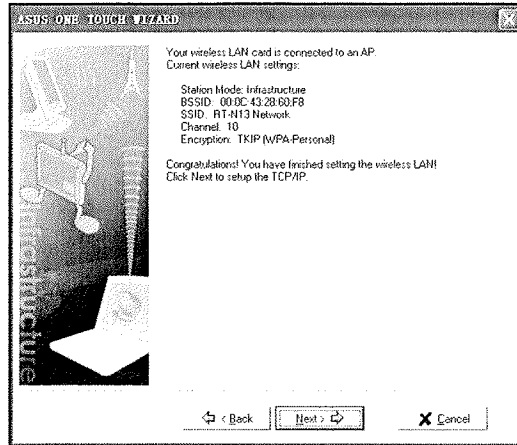
3) Set the authentication and encryption of your WLAN card the same with those at RT-N13. In the previous steps the **Key Length** is **64 bits**, **Passphrase** is 11111. Click **Next** to continue.
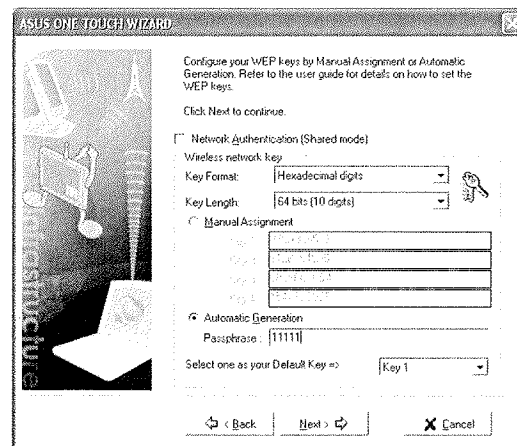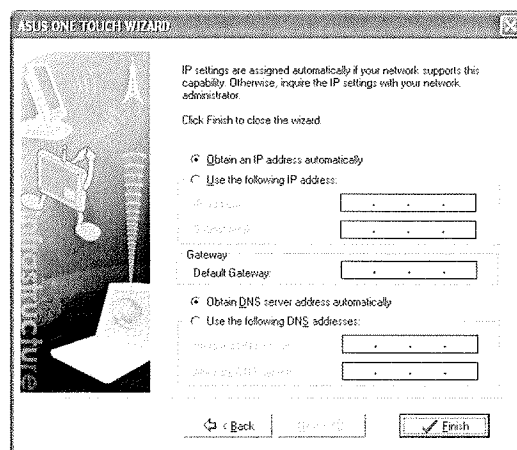
4) It takes several seconds for the wireless card to associate with RT-N13. Press **Next** to setup TCP/IP for your WLAN Card.

5) Setup the IP address of the WLAN Card according to your network condition. After the setup is complete, click **Finish** to exit the One Touch Wizard.

Configuring WLAN card with Windows® WZC service

If you use non-ASUS wireless card, you can set up the wireless connection with Windows® Wireless Zero Configuration (WZC) service.

1) Double-click the wireless network icon on the task bar to view available networks.Select your wireless router and click **Connect**.
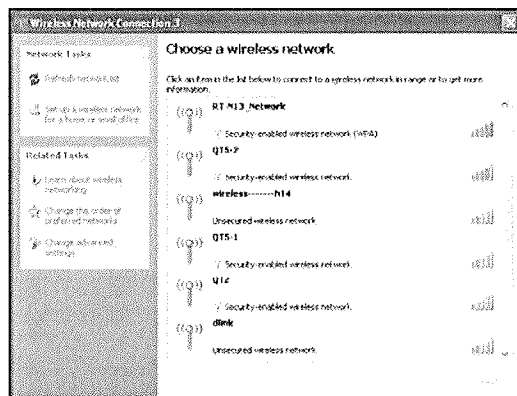
2) Input the 10-digit keys you have set on the wireless router and click **Connect**. The connection is complete within several seconds.
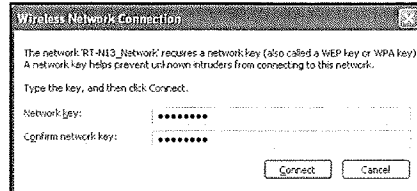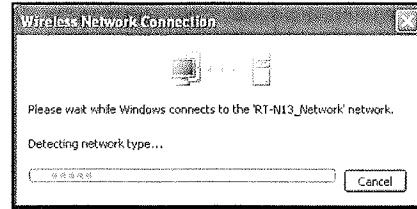
7. Configuring advanced features

To view and adjust other settings of the wireless router, enter the Web configuration page of RT-N13. Click on items on the menu to open a submenu and follow the instructions to setup the router. Tips show up when you move your cursor over each item.
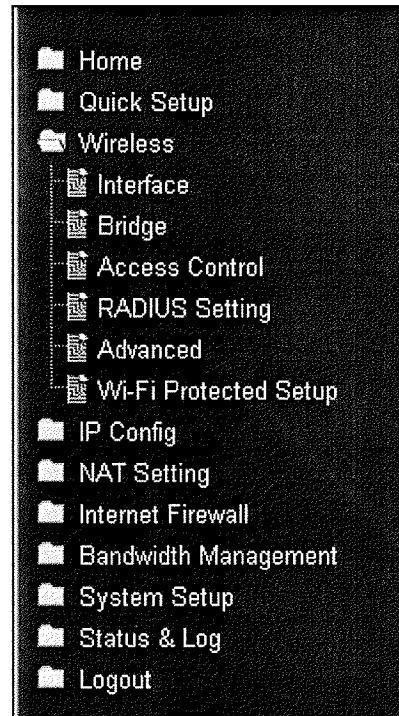
4. Wireless router features

This chapter provides setup examples of some frequently used router features. You can set up these features via your Web browser.

1) Choosing an appropriate operation mode

ASUS RT-N13 Wireless Router supports three operation modes: home gateway, router, and access point. Click **System Setup -> Operation mode** to open the configuration page.
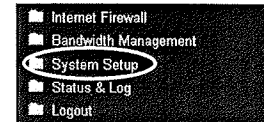
> **Home gateway** mode is for home or SOHO users who want to connect to their ISPs for Internet services. In this operation mode, NAT, WAN connection, Internet firewall functions are supported.
>
> **Router** mode is for office use where multiple routers and switches co-exist. You can set up routing policies in this mode; however, NAT function is disabled.
>
> **Access point** mode works when you setup RT-N13 as a wireless bridge. In this mode, all Ethernet ports on RT-N13 (4 LAN ports and 1 WAN port) are recognized as LAN ports. WAN connection, NAT, and Internet firewall functions are disabled in access point mode.

Select a proper mode which complies to your network scenario and press **Apply** button, and then you can continue to set up the advanced features for your RT-N13.

2) Setting up wireless encryption

RT-N13 provides a set of encryption and authentication methods to meet the different demands of home, SOHO, and enterprise users. Before setting up encryption and authentication for RT-N13, contact your network administrator for advice.
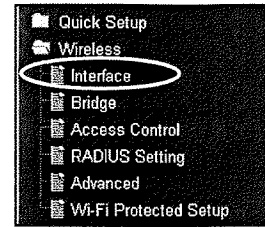
Click **Wireless -> Interface** to open the configuration page.

Note: For 802.11n performance, select 40MHz bandwidth. Channel option will depend on the bandwidth that you select.

Encryption

The encryption modes supported by RT-N13 are: WEP (64bits), WEP (128bits), TKIP, AES, and TKIP+AES.

WEP stands for Wired Equivalent Privacy, it uses 64bits or 128bits static keys to encrypt the data for wireless transmission. To setup WEP keys, set **WEP Encryption** to **WEP-64bits** or **WEP-128bits**, then manually type in four sets **WEP Keys** (10 hexadecimal digits for 64-bit key or 26 hexadecimal digits for 128-bit key). You can also let the system generate the keys by entering a **Passphrase**.

TKIP stands for Temporal Key Integrity Protocol. TKIP dynamically generates unique keys to encrypt every data packet in a wireless session.

AES stands for Advanced Encryption Standard. This solution offers stronger protection and increases the complexity of wireless encryption.

TKIP+AES is used when both WPA and WPA2 clients co-exist in the wireless network.

Authentication

The authentication methods supported by RT-N13 include: Open, shared key, WPA-PSK, WPA, and Radius with 80.211x.

> **Open:** This option disables authentication protection for wireless network. Under Open mode, any IEEE802.11b/g client can connect to your wireless network.

> **Shared:** This mode uses the WEP keys currently in use for authentication.

> **WPA/WPA2 and WPA-PSK/WPA2-PSK:** WPA stands for WiFi-Protected Access. WPA provides two security modes: WPA for enterprise network, and WPA-PSK for home and SOHO users. For enterprise network, WPA uses the already existing RADIUS server for authentication; for home and SOHO user, it provides Pre-Shared Key (PSK) for user identification. The Pre-Shared Key consists of 8 to 64 characters.

> **Radius with 802.1X:** Similar with WPA, this solution also uses RADIUS server for authentication. The difference lays on the encryption methods: WPA adopts TKIP or AES encryption methods, while Radius with 802.1X does not provide encryption.

When authentication and encryption are set, click **Finish** to save the settings and restart the wireless router.
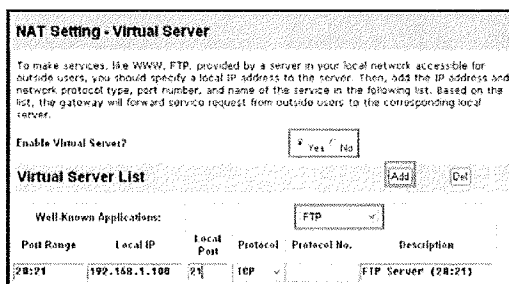
3) Setting up virtual server in your LAN

Virtual server is a Network Address Translation (NAT) function which turns a computer within a LAN into a server by allowing data packets of certain service, such as HTTP, from Internet.

1. Click **Virtual Server** in NAT Setting folder to open the NAT configuration page.

2. Select **Yes** to enable virtual server. For example, if host 192.168.1.100 is the FTP server that the user will access, it means all packets from Internet with destination port as 21 are to be directed to the host. Set Well-known Application to FTP. Port range to 21, Local IP to the host IP, Local Port to 21, Protocol to TCP.

3. Click **Finish**.
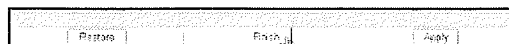
4. Click **Save & Restart** to restart the wireless router and activate the settings.
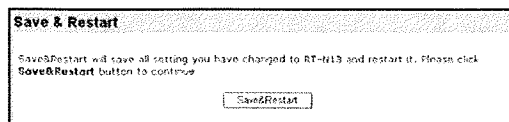
4) Setting up virtual DMZ in your LAN

To expose an internal host to the Internet and make all services provided by this host available to outside users, enable Virtual DMZ function to open all ports of the host. This function is useful when the host plays multiple roles such as HTTP server and FTP server. However, in doing this, your network becomes less secure.

1. Click **Virtual DMZ** in the NAT Setting menu.

2. Enter the IP address of the host and click **Finish**.

3. Click **Save & Restart** to restart the wireless router and activate the settings.

5) Setting up DDNS

DNS enables host who uses static IP address to associate with a domain name; for dynamic IP user, they can also associate with a domain name via dynamic DNS (DDNS). DDNS requires registering and account-creating at ASUS DDNS service. The ASUS DDNS server has already recorded your IP address information. You just set your domain name and you can access USB Hard Disc Drive that plugged in RT-N13 via Internet.

ASUS DDNS Service

1. Click **DDNS** from IP Config folder.
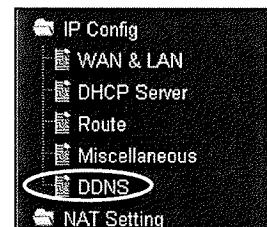
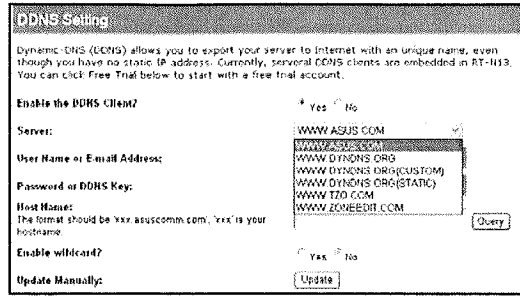2. Select **Yes** to enable the DDNS service.

3. Select WWW.ASUS.COM for detail setting. You do not necessary to key in **User Name of E-mail Address** and **Password or DDNS Key** if you select this server. Or you can select another website to register and apply for DDNS service. Please refer to Page 17 to see another service setting.
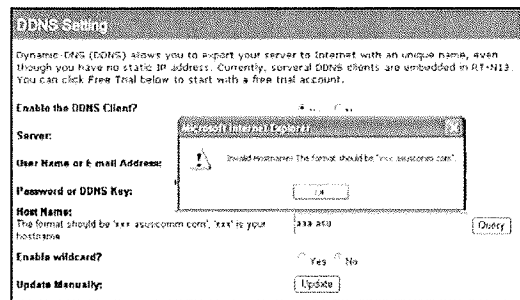
4. Enter the host name then click **Query**. The format should be xxx.asuscomm. com. (xxx is what you want to set up a host name)
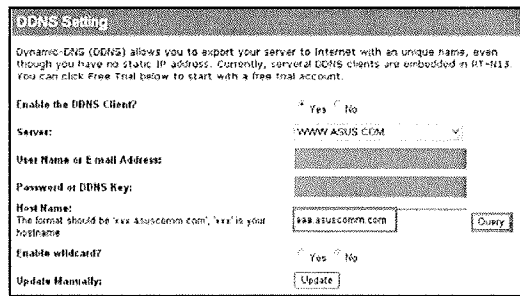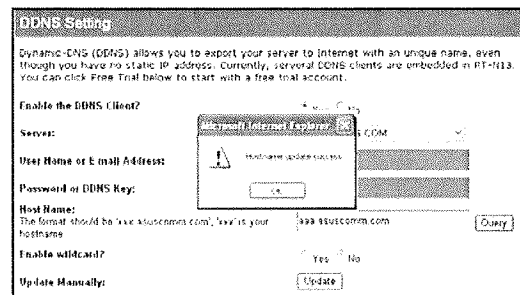
5. You can see this message when your host name is successfully registered.
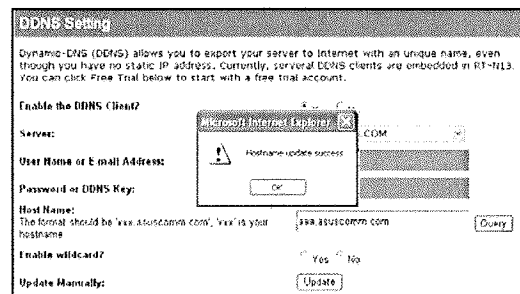
6. If host name's format does not follow xxx.asuscomm.com, you will see this message. Please re-enter your host name again.
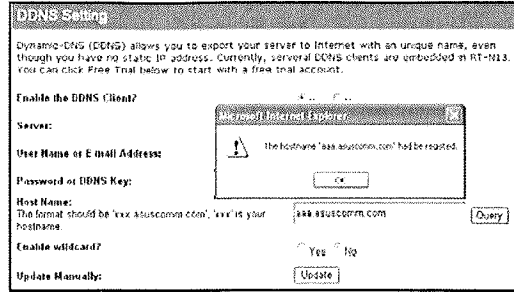
7. If you want to change host name, please enter new host name and click **Query**. You can see this message when your host name is successfully updated.
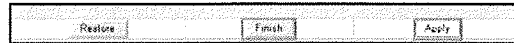
8. If the host name had been registered, you will see this message. Please re-enter your host name again.

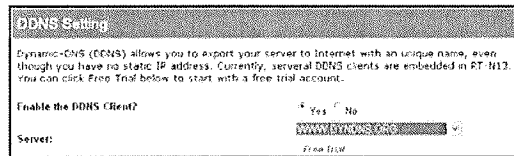9. Click **Apply** then click **Finish.**

10. Click **Save & Restart** to restart RT-N13 and activate settings.

11. You can type your host name in the address bar of browser to access your Hard Disk Drive plugged in RT-N13.

DynDNS Service

1. Select **Yes** to enable the DDNS service. If you do not have a DDNS account, click **Free Trial** to register for a trial account.
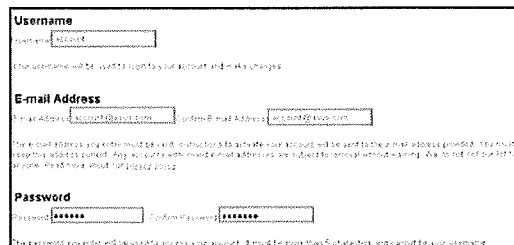
2. After clicking Free Trial, you are directed to the homepage of www. DynDNS.org, where you can register and apply for DDNS service.
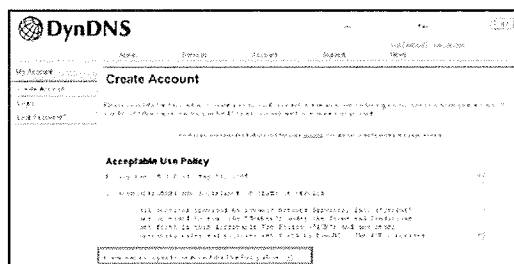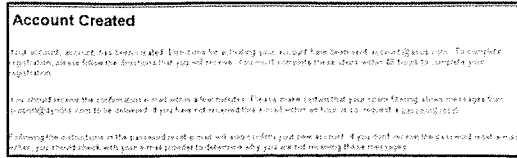
   Read the policy and select "**I have read...**".

3. Enter your user name, e-mail address, password, then click **Create Account**.
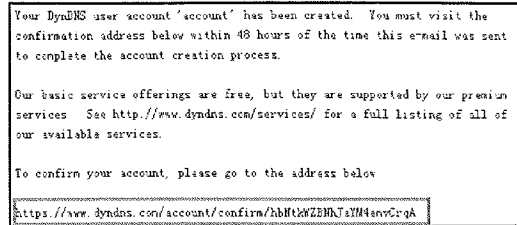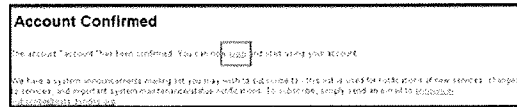
4. A message prompts out informing that your account has been created. An E-mail is sent to your mailbox. Open your mailbox and read the mail.
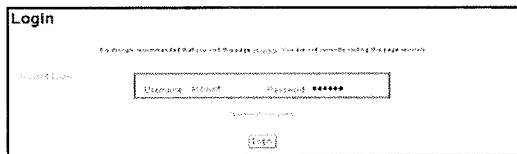
Account Created

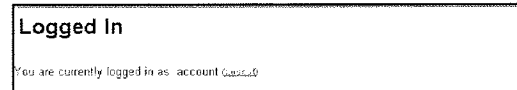5. You can find the activation letter in your E-mail box. Click the hyperlink.

Your DynDNS user account 'account' has been created. You must visit the confirmation address below within 48 hours of the time this e-mail was sent to complete the account creation process.

Our basic service offerings are free, but they are supported by our premium services. See http://www.dyndns.com/services/ for a full listing of all of our available services.

To confirm your account, please go to the address below

https://www.dyndns.com/account/confirm/hbNtkWZBNhJaYN4envCrqA

6. The link directs you to a login page. Click **login**.

Account Confirmed

7. Enter the user name and password then click **Login**.

Login

8. After logging in, you can see this welcome message.

Logged In

You are currently logged in as account

9. Select **Services** tab.

DynDNS

Services

DNS Services

Domain Registration
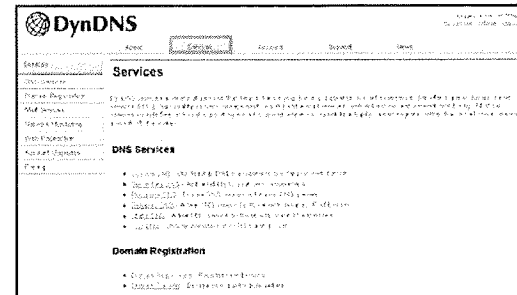
10. Click **Add Dynamic DNS Host** .

Add Host Services

Dynamic DNS (?)
Static DNS (?)
WebHop (?)
MyWebHop (?)
Network Monitoring (?)
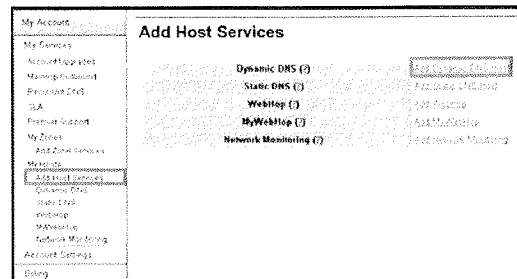
11. Enter the host name then click **Add Host**.

> **New Dynamic DNS^{SM} Host**

12. You can see this message when your hostname is successfully created.

> **Hostname Created**

13. Fill the account information into the DDNS setting fields of your wireless router.

> **DDNS Setting**

14. Click **Finish**.

15. Click **Save & Restart** to restart the wireless router and activate the settings.

> **Save & Restart**

16. Verify whether DDNS is working. Click **Start** menu and select **Run**. Type **cmd** and click **OK** to open the CLI console.
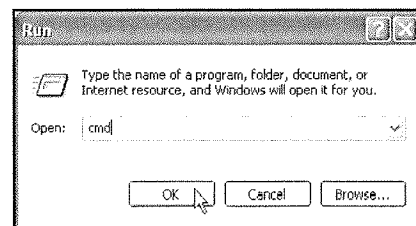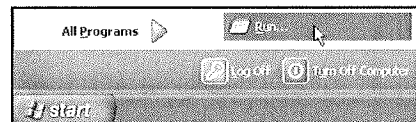
17. Type **ping account.dyndns.org** (your DDNS domain name). If you can see the reply like what is shown in the right picture, DDNS is working correctly.
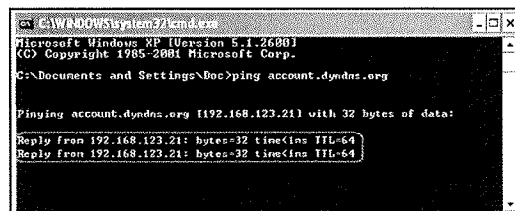
6) Setting up Bandwidth Management

Bandwidth Management provides a mechanism that controls the traffic of you network. To set up bandwidth management:

1. Click **Basic Config** page in Bandwidth Management folder. In this page you can see four buttons including **Gaming Blaster**, **Internet Application**, and **VOIP/Video Streaming**. In this page, you can click each item to set its priority higher. After you click each item, the letters on the button turns yellow (see figures below) and the green bar behind it automatically grows longer, indicating its bandwith status is the first priority. Click **Finish** and **Apply** to complete the configuration. The following figures shows different bandwith priority settings:
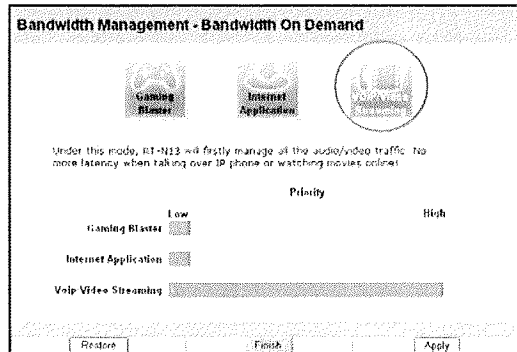
Gaming Blaster

Internet Application
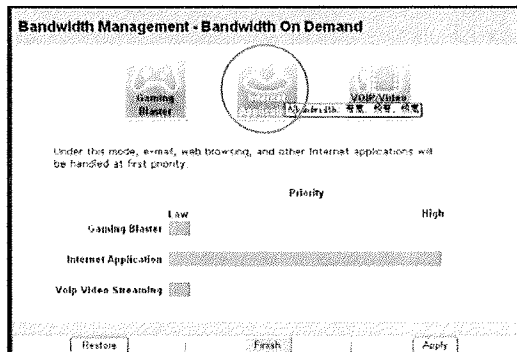
VOIP/Video Streaming

2. You can also configure the bandwith manually by clicking "**User Specify Services**". Input the **IP address**, **destination port** and choose the **priority status from** the drop-down list.
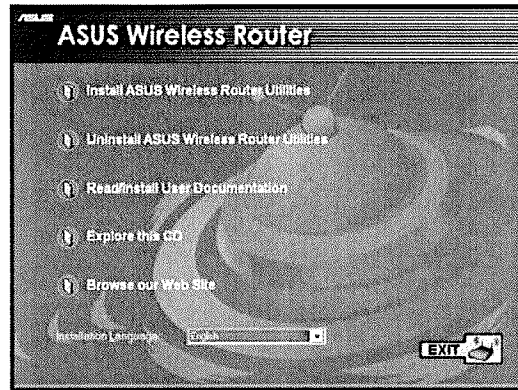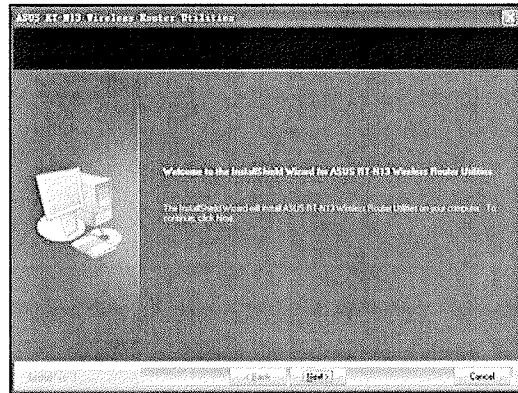
5. Setting up using ASUS utility

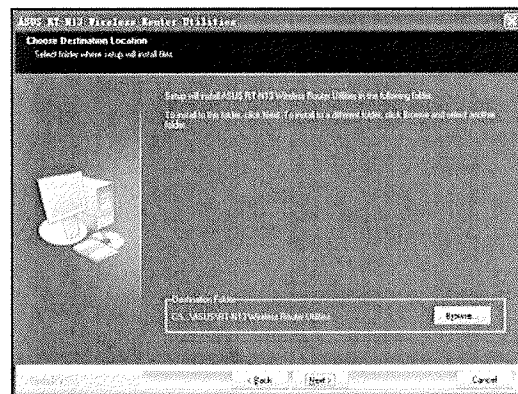## 1) Utility Installation for RT-N13

1. Click **Install ASUS Wireless Router Utilities** to run the setup installation program.
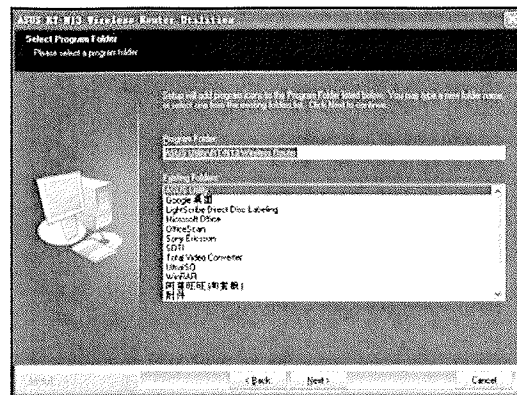

2. Click **Next** to continue.

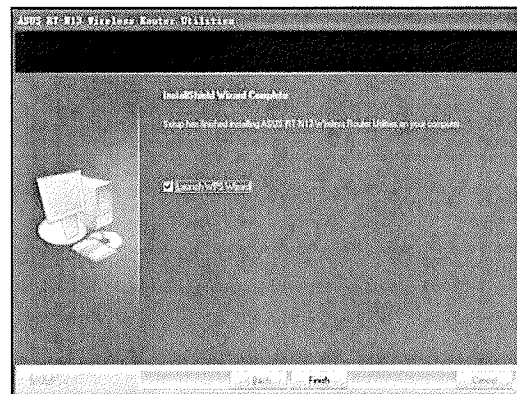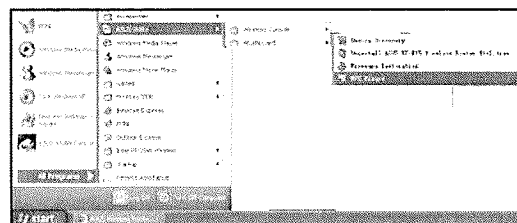3. Click **Next** to install the utility in the designated location.

4. Select a program folder and click **Next**.

5. Press Finish to quit the installation program.

6. Open the **WPS Wizard**.

2) WPS utility

1) To use WPS, your should use a wireless router and a wireless LAN card with WPS function.

2) Operating systems and wireless adapters that support WPS:

OS Support	Wireless Adapter Support
Vista 32/64	Intel wireless LAN card
	ASUS 167gv2 driver v3.0.6.0 or later
	ASUS 160N/130N driver v2.0.0.0 or later
XP SP2	Intel wireless LAN card
	ASUS 167gv2 driver v1.2.2.0 or later
	ASUS 160N/130N driver v1.0.4.0 or later
XP SP1 and 2000	ASUS LAN card with ASUS WLAN Utility
	ASUS 167gv2 driver v1.2.2.0 or later
	ASUS 160N/130N driver v1.0.4.0 or later

1. Follow the instructions to set up your hardware. When done, click **Next**.

   Note: Use WPS Wizard with one wireless client at a time. If the wireless client computer cannot discover the wireless router while in WPS mode, shorten the distance between the client and the router.
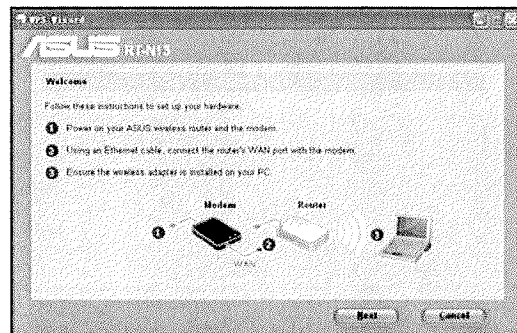
2. Push the **WPS** button on the wireless router until its power LED is blinking fast. When done, click **Next** to continue.

   Notes:
   1) When running WPS, the Internet connection pauses briefly, then reestablishes the connection.
   2) If the WPS button is pushed without running the WPS Wizard, the PWR indicator flashes, and the Internet connection pauses briefly and then reestablishes the connection.