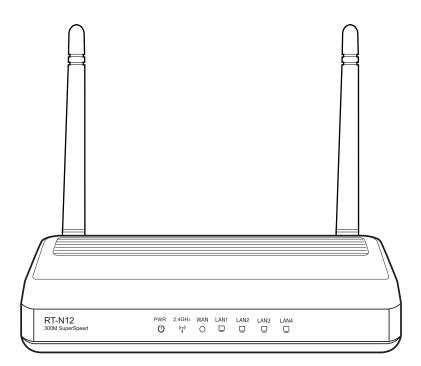


RT-N12 ASUS Wireless SuperSpeed N Router



User Manual

E4809 First Edition V1 July 2009

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About this guide

This user guide contains information that you need to install and configure the ASUS Wireless Router.

How this guide is organized

This guide contains the following parts:

• Chapter 1: Knowing your wireless router

This chapter provides information on the package contents, system requirements, hardware features, and LED indicators of the ASUS Wireless Router.

Chapter 2: Getting started

This chapter provides instructions on setting up the Router, Repeater, and Access Point modes of the ASUS Wireless Router.

Chapter 3: Configuring the network clients

This chapter provides instructions on setting up the clients in your network to work with your ASUS Wireless Router.

Chapter 4: Configuring via the web GUI

This chapter provides instructions on configuring the ASUS Wireless Router using its web graphics user interface (web GUI).

Chapter 5: Installing the utilities

This chapter provides information on the utilities that are available from the support CD.

Chapter 6: Troubleshooting

This chapter provides you with a troubleshooting guide for solving common problems you may encounter when using the ASUS Wireless Router.

• Appendices

This chapter provides you with the regulatory Notices and Safety Statements.

Conventions used in this guide



WARNING: Information to prevent injury to yourself when trying to complete a task.



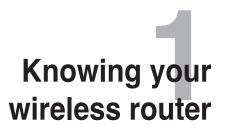
CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you MUST follow to complete a task.



NOTE: Tips and additional information to aid in completing a task.



Package contents

Check the following items in your ASUS Wireless Router package.

- RT-N12 Wireless Router x1
- Power adapter x1
- Support CD (manual, utilities) x1
- RJ45 cable x1
- Detachable antenna x2
- Quick Start Guide x1

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Note: If any of the items is damaged or missing, contact your retailer.

System requirements

Before installing the ASUS Wireless Router, ensure that your system/network meets the following requirements:

- An Ethernet RJ-45 port (10Base-T/100Base-TX)
- At least one IEEE 802.11b/g/n device with wireless capability
- · An installed TCP/IP and Internet browser

Before you proceed

Take note of the following guidelines before installing the ASUS Wireless Router:

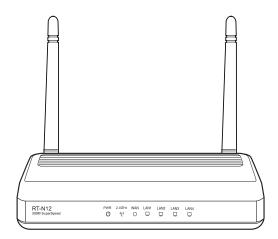
- The length of the Ethernet cable that connects the device to the network (hub, ADSL/cable modem, router, wall patch) must not exceed 100 meters.
- Place the device on a flat and stable surface as far from the ground as possible.
- Keep the device clear from metal obstructions and away from direct sunlight.
- Keep the device away from transformers, heavy-duty motors, fluorescent lights, microwave ovens, refrigerators, and other industrial equipment to prevent signal loss.
- Install the device in a central area to provide ideal coverage for all wireless mobile devices.

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• Install the device at least 20cm from a person to insure that the product is operated in accordance with the RF Guidelines for Human Exposure adopted by the Federal Communications Commission.

Hardware features

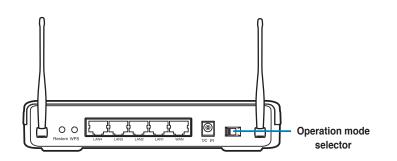
Front panel



Status indicators

LED	Status	Indication
(Power)	Off	No power
	On	System ready
	Flashing-slow	Rescue mode
	Flashing-quick	WPS processing
^{((i,i)} (Wireless)	Off	No power
	On	Wireless system ready
	Flashing	Transmitting or receiving data (wireless)
🗆 LAN 1-4	Off	No power or no physical connection
(Local Area Network)	On	Has physical connection to an Ethernet network
	Flashing	Transmitting or receiving data (through Ethernet cable)
O WAN (Wide	Off	No power or no physical connection
Area Network)	On	Has physical connection to an Ethernet network
	Flashing	Transmitting or receiving data (through Ethernet cable)

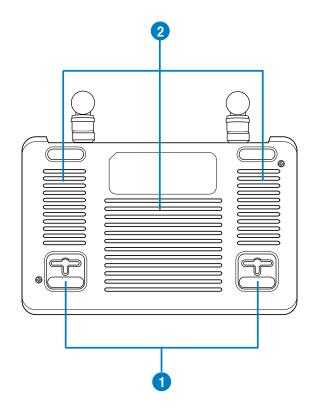
Rear panel



Label	Description
WAN	Connect an RJ-45 Ethernet cable to this port to establish WAN connection.
LAN1-LAN4	Connect RJ-45 Ethernet cables to these ports to establish LAN connection.
DC IN	Insert the AC adapter into this port to connect your router to a power source.
WPS	Press this button to establish wireless connection.
Restore	Press this button for more than five seconds to restore the system to its factory default settings.

Item	Description
Operation mode selector	Use this selector to choose an operation mode: Router (IP Sharing mode): In the Router mode, the wireless router connects to the Internet via PPPoE, Automatic IP, PPTP, L2TP, or Static IP, and provides you with wireless radio signal. The NAT, firewall, and IP sharing services for LAN clients are enabled. Repeater: In this mode, the wireless router extends your wireless network coverage and provides you with higher quality wireless radio signal. The NAT, firewall, and IP sharing services are disabled. Access Point (AP): In this mode, the wireless router receives the WAN IP address from the router connected to the WAN port and provides you with wireless radio signal. The NAT, firewall, and IP sharing services are disabled.

Bottom panel



Item	Description
1	Mounting hooks Use the mounting hooks to mount your router on concrete or wooden surfaces using two round head screws.
2	Air vents These vents provide ventilation to your router.

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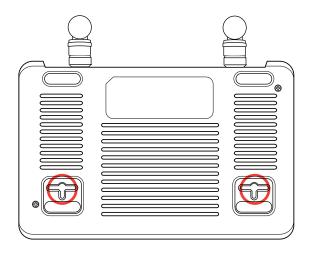
Note: For details on mounting your router on a wall or ceiling, refer to the section **Mounting options** on the next page of this user manual.

Mounting options

Out of the box, the ASUS Wireless Router is designed to sit on a raised flat surface like a file cabinet or book shelf. The unit may also be converted for mounting to a wall or ceiling.

To mount the ASUS Wireless Router:

- 1. Look on the underside for the two mounting hooks.
- 2. Mark two upper holes in a flat surface.
- 3. Tighten two screws until only 1/4" is showing.
- 4. Latch the hooks of the ASUS Wireless Router onto the screws.





Note: Re-adjust the screws if you cannot latch the ASUS Wireless Router onto the screws or if it is too loose.



Setting up the wireless router

The ASUS Wireless Router includes a web graphics user interface (web GUI) that allows you to configure the wireless router using your web browser on your computer.

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Note: For details on configuring your wireless router using the web GUI, refer to Chapter 4: Configuring via the web GUI.

You can set up the wireless router in any of these three operation modes: Router (IP Sharing), Repeater, and Access Point (AP). Set up the wireless router in the Router (IP Sharing) and Repeater modes via the Quick Internet Setup (QIS), and the AP mode via the web GUI.



Note: To set up the wireless router in the AP mode, use Device Discovery included in the support CD to access the web GUI.

Using the Quick Internet Setup (QIS)

The Quick Internet Setup (QIS) function, which is integrated in the wireless router's web GUI, detects the Internet connection type automatically and guides you in setting up your network quickly.

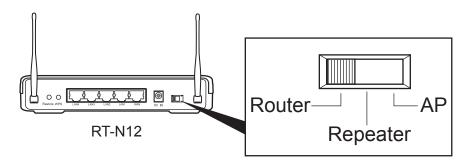
The QIS web page appears automatically after you connected all your devices and launched your web browser. You may also launch the QIS from the Network Map page in the web GUI. To do this, click **Go** in the QIS field under Internet status.

Setting up the wireless router in Router mode

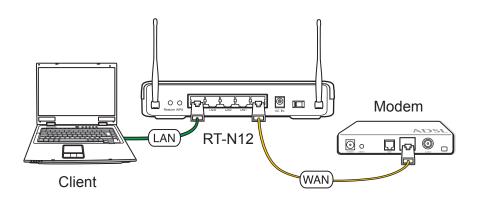
In the Router mode, the wireless router connects to the Internet via PPPoE, Automatic IP, PPTP, L2TP, or Static IP, and provides you with wireless radio signal. The NAT, firewall, and IP sharing services for LAN clients are enabled.

To set up the wireless router in Router mode:

1. Choose the Router mode.



2. Connect your devices.



Note: We recommend that you use an Ethernet cable (wired connection) to connect your computer to the wireless router for initial configuration to avoid possible setup problems due to wireless uncertainty.

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3. Launch your web browser and the QIS starts to detect your Internet connection type.

Redetecting your connection status
Start to detect your connection type Detecting at 9 times, the maximum time of detection is 20 seconds.
Skip to manual setting

Note: If the QIS web page does not appear after you launched your web browser, disable the proxy settings on your web browser.

4. Key in the user name and password. Click **Apply all settings**.

/isus ,	I-N12 Account Setting	_
	User Name: Password:	
	-Previous - Apply all setti	ngs

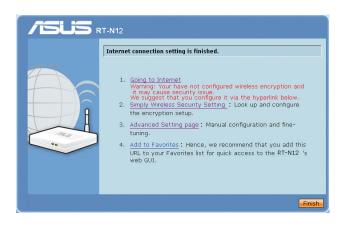
Note:

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- The PPPoE Internet connection type is used in this setup case. The setup screen varies with different Internet connection types.
- Obtain the required information such as the username and password from your Internet Service Provider (ISP).

5. The Internet connection setup is completed.



- Click Going to Internet to surf the Internet.
- Click **Simply Wireless Security Setting** to configure the basic security settings including the SSID, authentication, and encryption methods for the wireless router.

T-N12	
Wireless Setting	
 SSID: ASUS Authentication Method: Open System V WEP Encryption: None V	
Previous	Finish

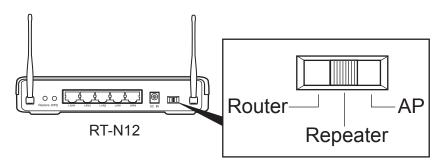
- Click **Advanced Setting page** to manually configure advanced settings for the wireless router.
- Click **Add to Favorites** to add this URL to your Favorites list for quick access to the web GUI.

Setting up the wireless router in Repeater mode

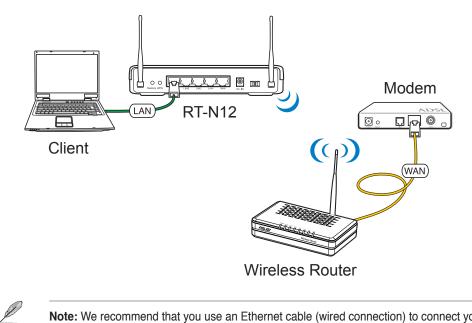
In the Repeater mode, the wireless router extends your wireless network coverage and provides you with higher quality wireless radio signal. The NAT, firewall, and IP sharing services are disabled.

To set up the wireless router in Repeater mode:

1. Choose the Repeater mode.



2. Connect your devices.



Note: We recommend that you use an Ethernet cable (wired connection) to connect your computer to the wireless router for initial configuration to avoid possible setup problems due to wireless uncertainty.

3. Launch your web browser and the QIS web page appears automatically. Select the AP whose wireless signal you want to extend, then click **Connect**.

Select the network	and click [C	onnect].		
Wireless name	¢ Ch	annel\$	Security \$	Radio 🕈
WLAN_intra	bgn	6	WPA2-PSK (TKIP+AES)	-
ASUS	bgn	1	Open System (NONE)	7
ASUSWIMAX6B8794	bgn	2	WPA-PSK (TKIP)	•
500gpv2	bgn	4	WPA-PSK (TKIP)	•1))
Sought		-		•

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Note: If the QIS web page does not appear after you launched your web browser, disable the proxy settings on your web browser.

Setting up the wireless router in AP mode

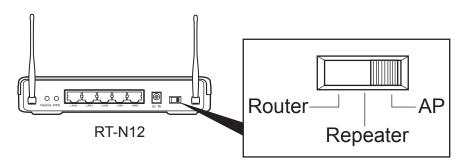
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Note: To set up the wireless router in the AP mode, use Device Discovery included in the support CD to access the web GUI.

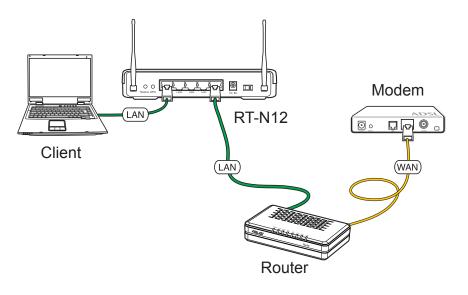
In the AP mode, the wireless router receives the WAN IP address from the router connected to the WAN port and provides you with wireless radio signal. The NAT, firewall, and IP sharing services are disabled.

To set up the wireless router in AP mode:

1. Choose the AP mode.



2. Connect your devices.



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Note: We recommend that you use an Ethernet cable (wired connection) to connect your computer to the wireless router for initial configuration to avoid possible setup problems due to wireless uncertainty.

3. Launch the Device Discovery utility and click **Configure** to access the web GUI.

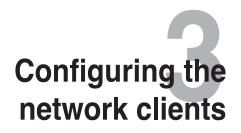
Device	SSID	IP Address	Subnet Mask	Printer	
RT-N12	ASUS	192.168.1.1	255.255.255.0		
٢					

4. On the login page, key in the default user name (**admin**) and password (**admin**).

Connect to 19	2.168.1.1
	GET
RT-N12	
User name:	2
<u>P</u> assword:	
	Remember my password
	OK Cancel

5. From the main page, click the navigation menu or links to configure the various features of the wireless router.





Accessing the wireless router

Setting an IP address for wired or wireless clients

To access the ASUS Wireless Router, you must have the correct TCP/IP settings on your wired or wireless clients. Ensure that the clients' IP addresses are within the same subnet as the ASUS Wireless Router.

By default, the ASUS Wireless Router integrates the DHCP server function, which automatically assigns IP addresses to the clients in your network.

But in some instances, you may want to manually assign static IP addresses on some of the clients or computers in your network rather than automatically getting IP addresses from your wireless router.

Follow the instructions below that correspond to the operating system installed on your client or computer.



Note: In the Router mode, if you want to manually assign an IP address to your client, we recommend that you use the following settings:

- IP address: 192.168.1.xxx (xxx can be any number between 2 and 254. Ensure that the IP address is not used by another device)
- Subnet Mask: 255.255.255.0 (same as the ASUS Wireless Router)
- Gateway: 192.168.1.1 (IP address of the ASUS Wireless Router)
- DNS: 192.168.1.1 (ASUS Wireless Router) or assign a known DNS server in your network

Windows® 9x/ME

- Click Start > Control Panel > Network to display the Network setup window.
- 2. Select **TCP/IP** then click **Properties**.

Network
Configuration Identification Access Control
The following <u>n</u> etwork components are installed:
Microsoft Family Logon Dial-Up Adapter Realtek RTL8139(A/B/C/8130) PCI Fast Ethernet NIC TCP/IP -> Dial-Up Adapter
Y TCP/IP → Realtek RTL8139(A/B/C/8130) PCI Fast Ether </td
Add Remove Properties
Microsoft Family Logon
<u>Fi</u> le and Print Sharing
Description TCP/IP is the protocol you use to connect to the Internet and wide-area networks.
OK Cancel

 If you want your computer to automatically obtain an IP address, click Obtain an IP address automatically then click OK. Otherwise, click Specify an IP address, then key in the IP address and Subnet Mask.

TCP/IP Properties				? ×
Bindings DNS Configuration		vanced WINS Con	1	etBIOS IP Address
An IP address can If your network doe your network admin the space below.	es not autor	matically assig	gn IP addre	esses, ask
💿 🛛 🖸 Dbtain an IP	address au	tomatically		
C Specify an IP	address:			
[P Address:				
S <u>u</u> bnet Mas	k:			
		0	к	Cancel

4. Select the **Gateway** tab, and key in **New gateway** then click **Add**.

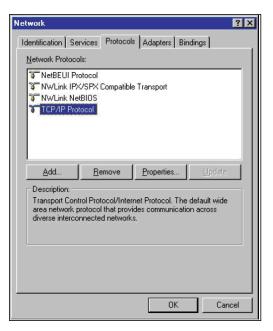
TCP/IP Properties		? ×
Bindings DNS Configuration	Advanced Gateway WINS Cor	NetBIOS nfiguration IP Address
	n the Installed Gateway in the list will be the ord I.	
<u>N</u> ew gateway:	. <u>A</u> d	ld
Installed gateway	us:	ove
	0	IK Cancel

- 5. Select the DNS configuration tab and click Enable DNS. Key in Host, Domain, and DNS Server Search Order, then click Add.
- 6. Click OK.

CP/IP Properties				?>
Bindings DNS Configuration		anced WINS Conf		etBIOS IP Address
• Disable DNS • Enable DNS				
<u>H</u> ost:		D <u>o</u> main:		
DNS Server Sear	ch Order —	_		
	•		<u>A</u> dd	
		B	emove	
Domain Suffix Se	arch Order			
			A <u>d</u> d	
		R	emove	
		Ok		Cancel

Windows® NT4.0

- Go to Control Panel > Network to display the Network setup window then select the Protocols tab.
- 2. Select **TCP/IP Protocol** from the Network Protocols list then click **Properties**.



- 3. From the IP Address tab of the Microsoft TCP/IP Properties window, you can:
 - Select the type of network adapter installed in your system.
 - Set the router to assign IP address automatically.
 - Manually set up the IP address, subnet mask, and default gateway.

Microsoft TCP/IP Properties	?	×
IP Address DNS WINS Address DHCP Relay Routing		1
An IP address can be automatically assigned to this network can by a DHCP server. If your network does not have a DHCP serve ask your network administrator for an address, and then type it in the space below.		
Adagter:	_	
[1] Realtek RTL8139/810x Family Fast Ethernet NIC	•	
Dbtain an IP address from a DHCP server		
C Specify an IP address		
IP Address:		
Gubnet Mask:		
Default <u>G</u> ateway:		
Advanced		
OK Cancel App	ly -	

 Select the DNS tab then click Add under the DNS Service Search Order and key in DNS.

Microsoft TCP/IP Properties			? ×
IP Address DNS WINS A	Idress DHCP	Relay Routing	
Densis News Custom (DMC)			
Domain Name System (DNS) <u>H</u> ost Name:	D <u>o</u> mai	n:	
			- 11
□ □ DNS <u>S</u> ervice Search Order			
			-1
		<u>U</u> p†	
		Do <u>w</u> n.	
Add Edit	I Re	moye	
		no <u>v</u> e	
Domain Suffix Search Orde	r		
		Úpî	1
		Down.	-
Add Edit	Re	move	
0	K _ CA	ancel <u>A</u> p	ply

Windows® 2000

 Click Start > Control Panel > Network and Dial-up Connection. Right-click Local Area Connection then click Properties.

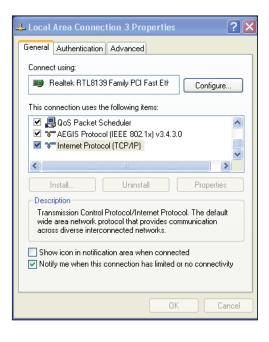
Connect using: BB SiS 900-Based	PCI Fast Ethernet Ada	oter
Componento alcantes	l are used by this conne	Configure
Client for Micr	OSOIL INCOMORIAS	
🗹 🜉 File and Printe		Networks
File and Printe File and Printe Internet Proto	col (TCP/IP)	
File and Printe File and Printe File and Printe Internet Proto Install Description Transmission Contr wide area network	col (TCP/IP)	Properties

- 2. Select Internet Protocol (TCP/IP), then click Properties.
- Select Obtain an IP address automatically if you want the IP settings to be assigned automatically. Otherwise, select Use the following IP address: and key in IP address, Subnet mask, and Default gateway.
- 4. Select Obtain DNS server address automatically if you want the DNS server settings to be assigned automatically. Otherwise, select Use the following DNS server addresses: and key in the Preferred and Alternate DNS server.
- 5. Click **OK** when done.

rnet Protocol (TCP/IP) Pro	perties	¢.		?
eneral You can get IP settings assigned this capability. Otherwise, you ne the appropriate IP settings.				
Obtain an IP address autor	natically			
-C Use the following IP addres	:8:			
[P address:				1
Subnet mask:				1
Default gateway:		1]
Obtain DNS server address	automatically			
O Use the following DNS service	/er addresses:			
Preferred DNS server.			·	1
Alternate DNS server:	<u> </u>]
			Ad <u>v</u> a	anced
		OK		Cancel

Windows® XP

 Click Start > Control Panel > Network Connection. Right-click Local Area Connection then select Properties.



- 2. Select Internet Protocol (TCP/IP), then click Properties.
- Select Obtain an IP address automatically if you want the IP settings to be assigned automatically. Otherwise, select Use the following IP address: and key in IP address, Subnet mask, and Default gateway.
- Select Obtain DNS server address automatically if you want the DNS server settings to be assigned automatically. Otherwise, select Use the following DNS server addresses: and key in the Preferred and Alternate DNS server.
- 5. Click **OK** when done.

Internet Protocol (TCP/IP) Prope	erties 🤶 🏹
General Alternate Configuration	
You can get IP settings assigned auto this capability. Otherwise, you need to the appropriate IP settings.	
Obtain an IP address automatica	lly
OUse the following IP address: —	
IP address:	and the second second
Subnet mask:	
Default gateway:	
⊙ Obtain DNS server address auto	matically
O Use the following DNS server ad	dresses:
Preferred DNS server:	and the second second
Alternate DNS server:	
	Advanced
	OK Cancel

Windows® Vista

1. Go to Start > Control Panel > Network and Internet > Network and Sharing Center. Click View status > Properties > Continue.

Connec	t using:		
<u>e</u>	Realtek RTL8168	BB/8111 <mark>B Family PCI-</mark>	E Gigabit Ethernet
This co	nnection uses th	e following items:	Configure
	Client for Micro	soft Networks	
	QoS Packet So		
	File and Printer	Sharing for Microsoft	Networks
1.1.1.1	Entry Comments of Contractory of Contractory	ol Version 6 (TCP/IPv	COLUMN TO A COLUMNT TO A COLUMNT TO A COLUMNT TO A COLUMNT TO A COLUMN TO A
	Contractor of the Contractor	ol Version 4 (TCP/IPv	
		ology Discovery Map	
	- Unk-Layer Top	ology Discovery Nest	Jonder
		Uninstall	Properties
	nstall		
	iption		
Desc Tran	ription smission Control	Protocol/Internet Prot	

- 2. Select Internet Protocol Version 4 (TCP/IPv4), then click Properties.
- Select Obtain an IP address automatically if you want the IP settings to be assigned automatically. Otherwise, select Use the following IP address: and key in IP address and Subnet mask.
- 4. Select Obtain DNS server address automatically if you want the DNS server settings to be assigned automatically. Otherwise, select Use the following DNS server addresses: and key in the Preferred and Alternate DNS server.
- 5. Click **OK** when done.

You can get IP settings assigned aut this capability. Otherwise, you need for the appropriate IP settings. © Obtain an IP address automatic	to ask you				
Obtain an IP address automatic					
	ally				
— Use the following IP address: —					
IP address:	+		+		
Sybnet mask:			2		
Default gateway:	192 .	168 .	1 .	1	
Obtain DNS server address aut OUse the following DNS server are OUSE the following DNS server are	1000 CONTRACTOR -				
Preferred DNS server:		1.10	4		
<u>A</u> lternate DNS server:					
Preferred DNS server: Alternate DNS server:				Idvance	he



Configuring via the web GUI

The router's web graphics user interface (web GUI) allows you to configure these features: **Network Map** and **EZQoS Bandwidth Management**.

To access the web GUI:

1. Launch a web browser, then key in the router's IP address. The login page of the router's web GUI appears.

Note:

- In the Router mode, the router's IP address is 192.168.1.1.
- In the Repeater and AP modes, use Device Discovery included in the support CD to find the router's IP address.
- 2. On the login page, key in the default user name (**admin**) and password (**admin**).



3. From the main page, click the navigation menu or links to configure the various features of the ASUS Wireless Router.



Using the Network Map

Network Map allows you to view the status and configure the connection settings of the Internet, system, and clients in your network. It enables you to quickly set up your Wide Area Network (WAN) using the Quick Internet Setup (QIS) feature, or to quickly set up your Local Area Network (LAN) using the WPS Wizard.



Note: For more details on the WPS Wizard, refer to the section WPS Wizard in Chapter 5 of this user manual.

To view the status or configure the settings, click any of these icons displayed on the main page:

lcon	Description
	Internet status Click this icon to display information on the Internet connection status, WAN IP address, DNS, connection type, and gateway address. From the Internet status screen, use the Quick Internet Setup (QIS) feature to quickly set up your network.
	System status Click this icon to display information on the SSID, authentication and encryption methods, LAN IP, MAC address, or turn the wireless radio on/off. Enable the WPS mode from the System status screen.
	Client status Click this icon to display information about the clients or computers in the network, and allows you to block/unblock a client.

Creating multiple SSID profiles

The wireless router allows you to create multiple SSID profiles that meet various working scenarios.

To create an SSID profile:

1. Under System status, click Add.



2. Configure the profile settings, then click **Add**.

RT-N12	SSID: ASUS Firmware Version: LADA Describe Mode: Poter Id SSID	_	Logout Reboot
Notwark Nap Operation Mode Ex/us Bandoubh Managarinent Advanced Setting	SSID Profiles Quest VIP © Custom SSID Authentication Method: Open System V WEP Encryption: None V Enable Oves ONO Network Access Both V Hide SSID: Oracle Access Access Control Cancel	s1D star ethod: PA ncryption: PA-P5K key AN JP AC address EZSetup	ASUS RT-NL2 ASUS C WPA-Parsonal C THEF C INITIALISE INITIALISE INITIALISE INITIALISE INITIALISE Construction to evention of the buttan to evention of the buttan to evention Moree Configure. C

Managing bandwidth with EzQoS

EzQoS Bandwidth Management enables you to set the bandwidth priority and manage the network traffic.

To set up the bandwidth priority:

1. Click **EzQoS Bandwidth Management** from the navigation menu at the left side of your screen.



2. Click each of these four applications to set the bandwidth priority:

lcon	Description
F	Gaming Blaster The router handles gaming traffic at first priority.
	Internet Application The router handles the e-mail, web browsing and other Internet applications traffic at first priority.
	FTP The router handles at first priority the traffic of downloading/ uploading data to/from the FTP server.
E.	Voip/Video Streaming The router handles the audio/video traffic at first priority.

3. Click **Save** to save the configuration settings.

Upgrading the firmware



Note: Download the latest firmware from the ASUS website at http://www.asus.com.

To upgrade the firmware:

1. Click **Advanced Setting** from the navigation menu at the left side of your screen.

Netwo	rk Map	Wireless	LAN	WAN	Firewall
🚡 Opera	tion Mode	Configure your wireless connection, security, and other advanced parameters.	Configure LAN, dhcp, and route settings.	Configure the Internet connection, QoS, and Server setting.	Configure the firewall and filter mechanisms to protect your network.
4.51	iement nced Setting	 General WPS Bridge Wireless MAC Filter RADIUS Setting Professional 	LAN IP DHCP Server Route	Internet Connection QoS Port Trigger Virtual Server DMZ DDNS	 General URL Filter MAC Filter LAN to WAN Filter
Wireless		Administration	System Log		
WAN Firewall		Configure the system and upgrade the firmware of RT- N12.	Monitor the status and various system logs.		
Administ System		 System Firmware Upgrade Restore/Save/Upload Setting 	 General Log DHCP leases Wireless Log Port Forwarding Routing Table 		

- 2. Under the Administration menu, click Firmware Upgrade.
- 3. In the **New Firmware File** field, click **Browse** to locate the new firmware on your computer.
- 4. Click **Upload**. The uploading process takes about three minutes.



Note: If the upgrade process fails, use the Firmware Restoration utility to restore the system. For details on this utility, refer to the section **Firmware Restoration** in Chapter 5 of this user manual.

Restoring/Saving/Uploading settings

To restore/save/upload the settings:

- 1. Click **Advanced Setting** from the navigation menu at the left side of your screen.
- 2. Under the Administration menu, click Restore/Save/Upload Setting.

	RT-N12	SSID: ASUS Firmware Version: 1001 Operation Node: Exter	٢
	Network Map	System Firmware Upgrade Restore/Save/Upload Setting Administration - Restore/Save/Upload Setting	2
	EzQoS Management	This function allows you to save current settings of RT-N12 to a file, or load settings from a file.	
\subseteq	Advanced Setting	Pactory default. Restore	
	WAN Firewall Administration		
	System Log		

- 3. Select the tasks that you want to do:
 - To restore to the default factory settings, click **Restore**, and click **OK** in the confirmation message.
 - To save the current system settings, click **Save**, and click **Save** in the file download window to save the system file in your preferred path.
 - To restore previous system settings, click **Browse** to locate the system file that you want to restore, then click **Upload**.



Installing the utilities

The support CD contains the utilities for configuring the ASUS Wireless Router. To install the ASUS WLAN Utilities in Microsoft[®] Windows, insert the support CD in the CD drive. If Autorun is disabled, run **setup.exe** from the root directory of the support CD.

To install the utilities:

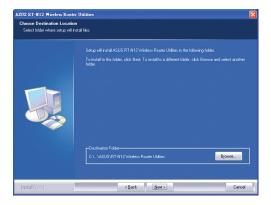
1. Click Install...Utilities.



2. Click Next.



3. Click **Next** to accept the default destination folder or click **Browse** to specify another path.



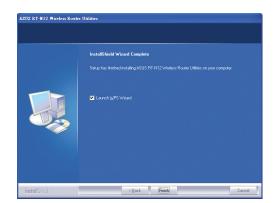
- 4. Click **Next** to accept the default program folder or enter another name.
- Statis KT-K12 Wankes Route Ubities

 School Phogonal Folder

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 School Phogonal Phogonal Folder
- 5. Click **Finish** when setup is completed.



Device Discovery

Device Discovery is an ASUS WLAN utility that detects an ASUS wireless router and enables you to configure the device.

To launch the Device Discovery utility:

From your computer's desktop, click **Start > All Programs > ASUS Utility > RT-N12 Wireless Router > Device Discovery**.

Device Dis	covery				
Device	SSID	IP Address	Subnet Mask	Printer	
RT-N12	ASUS	192.168.1.1	255.255.255.0		
<					
	눌 <u>C</u> onfigu	ire	<u>گے S</u> earch	:	<u>I</u> <u>E</u> xit

- Click **Configure** to access the web GUI and configure the wireless router.
- Click **Search** to search for ASUS wireless routers within range.
- Click **Exit** to exit the application.

Firmware Restoration

Firmware Restoration is used on an ASUS Wireless Router that failed during its firmware upgrading process. It uploads the firmware that you specify. The process takes about three to four minutes.

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Important: Launch the rescue mode before using the Firmware Restoration utility.

To launch the rescue mode and use the Firmware Restoration utility:

- 1. Unplug the wireless router from the power source.
- 2. Hold the Restore button at the rear panel and simultaneously re-plug the wireless router into the power source. Release the Restore button when the Power LED at the front panel flashes slowly, which indicates that the wireless router is in the rescue mode.
- 3. From your computer's desktop, click Start > All Programs > ASUS Utility > RT-N12 Wireless Router > Firmware Restoration.

language Automation	×
Eilename:	<u>B</u> rowse
Once you have specified a file, click the "Upload" button	
Upload Close	
<u>U</u> pload <u>C</u> lose	

4. Specify a firmware file, then click **Upload**.

Note: This is not a firmware upgrade utility and cannot be used on a working ASUS Wireless Router. Normal firmware upgrades must be done through the web interface. Refer to **Chapter 4: Configuring via the web GUI** for more details.

WPS Wizard

WPS (Wi-Fi Protected Setup) allows you to set up a secure and protected wireless network easily.

Using WPS Wizard

Note:

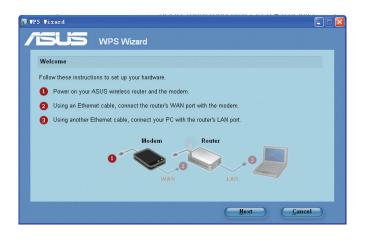
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- Ensure that you use a wireless LAN adapter with WPS function.
- · Windows® operating systems and wireless LAN cards/adapters that support WPS:

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

To use WPS Wizard:

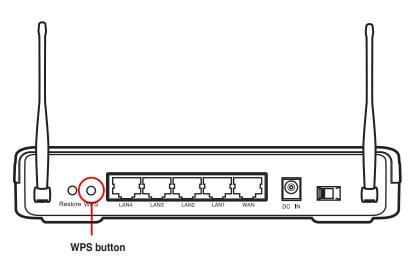
1. Follow the onscreen instructions to set up your hardware. When done, click **Next**.



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Note: Use the WPS Wizard with one wireless client at a time. If the wireless client cannot discover the wireless router, shorten the distance between the client and the router.

2. Push the WPS button at the rear panel of the wireless router for more than five seconds.



3. On the WPS Wizard, click Next to continue.



Notes:

- When running WPS, the Internet connection pauses briefly then reestablishes the connection.
- If the WPS button is pushed without running the WPS Wizard, the PWR indicator flashes and Internet connection pauses briefly and then reestablishes the connection.

4. Assign a name to your network, then click **Next**.

N WPS Wizard	
Assign a name for your network	
Choose a name that people who connect to your network will recognize.	Help ? SSID is a string used to
Network Name (SSID):	identify a wireless LAN. Use the automatically generated string as your SSID or
N-X01WW4X3WPV0U_ASUS	assign the SSID manually.
You can type up to 32 letters or numbers.	
6	Next <u>C</u> ancel

5. Use the auto-generated passphrase as your network's security key or manually assign a passphrase containing between 8 and 63 characters. Click **Next**.

n WPS Wizard	
VPS Wizard	
Make your network more secure with a passphrase	
This wizard will use the passphrase provided below to generate a WPA security key for you. Passphrase: CCGENVUGBIKREOOIYF2F2 The passphrase must be between 8 and 63 characters. ✓ Display characters	Heip (2) A security key can prevent outsider from accessing your wireless network. Use the automatically generated string as your passphrase or assign the passphrase manually.
 <u>Create a different passphrase for me</u> <u>Show advanced network security options</u> 	
Back	Next <u>C</u> ancel

 Installation is completed. Click Save or print settings for future reference or Save settings to a USB flash drive to add other devices to the network. Click Next to connect to the Internet.

his wizard finished s	accessfully
Print or save wirele	ss settings
You will need to provi	de the following information to others to connect to this network.
Network Name:	TEST_ASUS
Passphrase:	O66FNVUGBKREOOIYF2FZ
Security:	TKIP (WPA-Personal)
Save	or print settings or print the wireless settings for future reference. settings to a USB flash drive USB drive to add other devices to the network.

Note: For more details on adding devices to the network using a USB flash drive, refer to the section **Adding network devices using a USB flash drive** on the next page.

7. You have connected to the wireless router. If you want to configure the Internet settings, click **Setup**. Click **Finish** to close the WPS Wizard.



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Adding network devices using a USB flash drive

With the WPS utility, you can add devices to your network using a USB flash drive.

To add network devices using a USB flash drive:

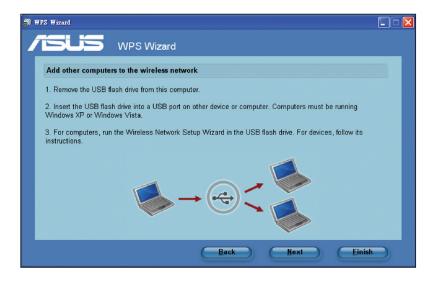
1. In the WPS Wizard, click Save settings to a USB flash drive.



2. Plug a USB flash drive into the USB port on your computer, and then select the drive from the dropdown list. When done, click **Next** to continue.

@ w	PS Wizard	
1	SUS WPS Wizard	
	Insert the USB flash drive into this computer	
	Plug the USB flash drive into a USB port on your computer, and then select the drive from the list below.	
	Save settings to:	
	Back Next Cance	

3. Remove the USB flash drive from this computer, and then plug it to the computer that you want to add to the wireless network.



4. Locate the **SetupWireless.exe** from the USB drive, and double-click to run it. Click **Yes** to add the computer to the wireless network.

Wireless Network Setup Wizard		
2	Do you want to add this computer to the wireless network Default	
	Yes No	

5. Click OK to exit the Wireless Network Setup Wizard.





Troubleshooting

This troubleshooting guide provides solutions to some common problems that you may encounter while installing or using the ASUS Wireless Router. These problems require simple troubleshooting that you can perform by yourself. Contact the ASUS Technical Support if you encounter problems not mentioned in this chapter.

Problem	Action
I cannot access the web GUI for configuring the router.	 Launch a web browser, then click Tools > Internet Options
	 Under Temporary Internet files, click Delete Cookies and Delete Files
	Disable the proxy settings of the web browser.
The client cannot establish a	Out of Range:
wireless connection with the	• Put the router closer to the wireless client.
router.	Try to change the channel settings.
	Authentication:
	 Use wired connection to connect to the router.
	Check the wireless security settings.
	 Press the Restore button at the rear panel for more than five seconds.
	Cannot find the router:
	 Press the Restore button at the rear panel for more than five seconds.
	 Check the setting in the wireless adapter such as SSID and encryption settings.

Problem	Action
Cannot access the Internet via wireless LAN adapter.	 Move the router closer to the wireless client. Check whether the wireless adapter is connected to the correct wireless router. Check whether the wireless channel in use conforms to the channels available in your country/area. Check the encryption settings. Check if the ADSL or Cable connection is correct. Retry using another Ethernet cable.
Internet is not accessible.	 Check the status indicators on the ADSL modem and the wireless router. Check if the WAN LED on the wireless router is ON. If the LED is not ON, change the cable and try again.
When ADSL Modem "Link" light is ON (not blinking), this means Internet Access is possible.	 Restart your computer. Refer to the Quick Start Guide of the wireless router and re-configure the settings. Check if the WAN LED on the wireless router is ON. Check the wireless encryption settings. Check if the computer can get the IP address (via both wired network and wireless network). Ensure that your web browser is configured to use the local LAN, and is not configured to use a proxy server.
If the ADSL "LINK" light blinks continuously or stays off, Internet access is not possible - the Router is unable to establish a connection with the ADSL network.	 Ensure that all your cables are all properly connected. Disconnect the power cord from the ADSL or cable modem, wait a few minutes, then reconnect the cord. If the ADSL light continues to blink or stays OFF, contact your ADSL service provider.
Network name or encryption keys are forgotten.	 Try setting up the wired connection and configuring the wireless encryption again. Press the Restore button at the rear panel of the wireless router for more than five seconds.

Problem	Action	
How to restore the system to its default settings?	 Press the Restore button at the rear panel of the wireless router for more than five seconds. 	
	 Refer to the section Restoring/Saving/ Uploading settings in Chapter 4 of this user manual. 	
	The following are the factory default settings:	
	User Name: admin	
	Password: admin	
	Enable DHCP: Yes (if WAN cable is plugged in)	
	IP address: 192.168.1.1	
	Domain Name: (Blank)	
	Subnet Mask: 255.255.255.0	
	DNS Server 1: 192.168.1.1	
	DNS Server 2: (Blank)	
	SSID: ASUS	
I cannot use 192.168.1.1 to enter the web GUI.	Check the router's operation mode.	
	 In the Router mode, the default IP address is 192.168.1.1. 	
	 In the Repeater / AP mode, use Device Discovery to find the router's IP address. 	

ASUS DDNS Service

RT-N12 supports the ASUS DDNS service. When exchanging devices at the service center, if you have registered the ASUS DDNS service and want to keep the original domain name, data transfer is a must. Visit your local service center for more information.

I Notes:

• If there is no activity in the domain - such as reconfiguring the router or accessing the registered domain name - within 90 days, the system automatically deletes the registered information.

· If you encounter any problem or difficulty in using your device, contact the service center.

Frequently Asked Questions (FAQs)

1. Will the registered information be lost or registered by others?

If you have not updated the registered information in 90 days, the system automatically deletes the registered information and the domain name may be registered by others.

2. I did not register the ASUS DDNS for the router I bought six months ago. Can I still register it?

Yes, you can still register the ASUS DDNS service for your router. The DDNS service is embedded in your router, so you can register the ASUS DDNS service anytime. Before registering, click **Query** to check if the hostname has been registered or not. If not, the system registers the hostname automatically.

3. I have registered a domain name before and it has been working well until my friends told me that they could not access my domain name.

Check the following:

- 1. The internet is working well.
- 2. The DNS server is working well.
- 3. The last time you updated the domain name.

If there are still problems in accessing your domain name, contact the service center.

4. Can I register two domain names to separately access my http and ftp servers?

No, you cannot. You can only register one domain name for one router. Use port mapping to implement security in the network.

5. After restarting the router, why is it that I see different WAN IPs in MS DOS and in the router configuration page?

This is normal. The interval time between the ISP DNS server and ASUS DDNS results in different WAN IPs in MS DOS and in the router configuration page. Different ISPs may have different interval time for IP updating.

6. Is the ASUS DDNS service free, or is it just a trial version?

The ASUS DDNS service is a free and embedded service in some ASUS routers. Check your ASUS router if it supports the ASUS DDNS service.

Appendices

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- · Reorient or relocate the receiving antenna.
- · Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Prohibition of Co-location

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Safety Information

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna.

Declaration of Conformity for R&TTE directive 1999/5/EC

Essential requirements – Article 3

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950-1 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1 and EN 301 489-17 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328- 2 has been conducted. These are considered relevant and sufficient.

CE Mark Warning

This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Operation Channels: Ch1~11 for N. America, Ch1~14 Japan, Ch1~13 Europe (ETSI)

IC Warning

The Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

Cet appareil numerique de la class B respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

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Version 2, June 1991

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REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <u>http://green.asus.com/english/REACH.htm</u>.

Safety Warning

SAFE TEMP: This wireless router should be only used in environments with ambient temperattures between $5^{\circ}C(41^{\circ}F)$ and $40^{\circ}C(104^{\circ}F)$

DO NOT expose to or use near liquids, rain, or moisture. DO NOT use the modem during electrical storms.

Canada Notices

Industry Canada regulatory information

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The user is cautioned that this device should be used only as specified within this manual to meet RF exposure requirements. Use of this device in a manner inconsistent with this manual could lead to excessive RF exposure conditions.

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* Available on this site is an online Technical Inquiry Form that you can fill out to contact technical support.

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