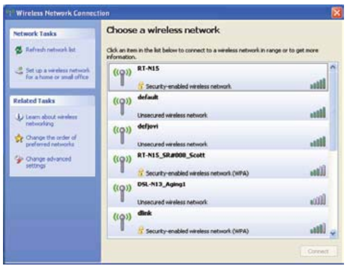
Configuring WLAN card with Windows® WZC service

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**.



Wireless Network Connection

Choose a wireless network

Click an item in the list below to connect to a wireless network in range or to get more information.

RT-N15
Security-enabled wireless network

default
Unsecured wireless network

defjovi
Unsecured wireless network

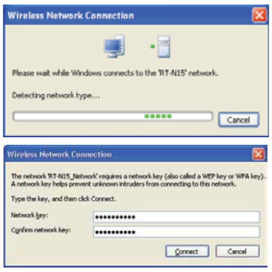
RT-N15_SR#008_Scott
Security-enabled wireless network (WPA)

DSL-N13_Aging1
Unsecured wireless network

dlink
Security-enabled wireless network (WPA)

Network Tasks
Refresh network list
Set up a wireless network for a home or small office
Related Tasks
Learn about wireless networking
Change the order of preferred networks
Change advanced settings
Connect

2) Input the 10-digit keys you have set on the wireless router and click **Connect**. The connection is complete within several seconds.



Wireless Network Connection

Please wait while Windows connects to the 'RT-N15' network.

Detecting network type...

Wireless Network Connection

The network 'RT-N15_Network' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network.

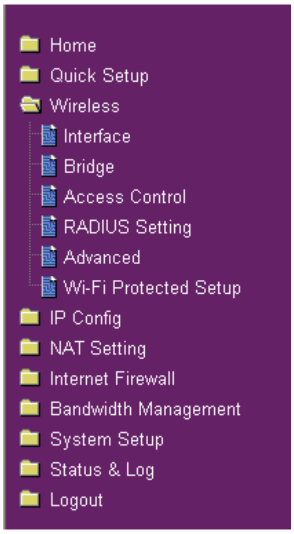
Type the key, and then click Connect.

Network key: ••••••••••

Confirm network key: ••••••••••

7. Configuring advanced features

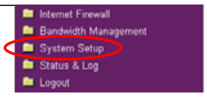
To view and adjust other settings of the wireless router, enter the Web configuration page of RT-N15. Click on items on the menu to open a submenu and follow the instructions to setup the router. Tips show up when you move your cursor over each item.



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



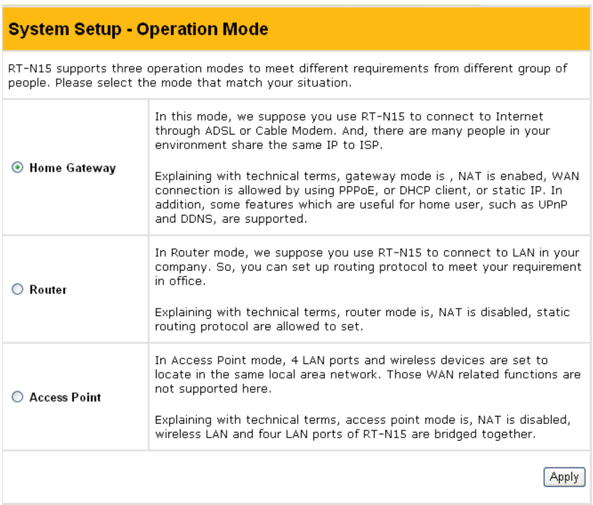
ASUS RT-N15 Wireless Router supports three operation modes: home gateway, router, and access point. Click **System Setup -> Operation mode** to open the configuration page.

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-N15 as a wireless bridge. In this mode, all Ethernet ports on RT-N15 (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-N15.



System Setup - Operation Mode

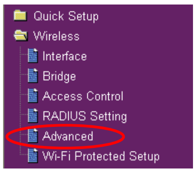
RT-N15 supports three operation modes to meet different requirements from different group of people. Please select the mode that match your situation.

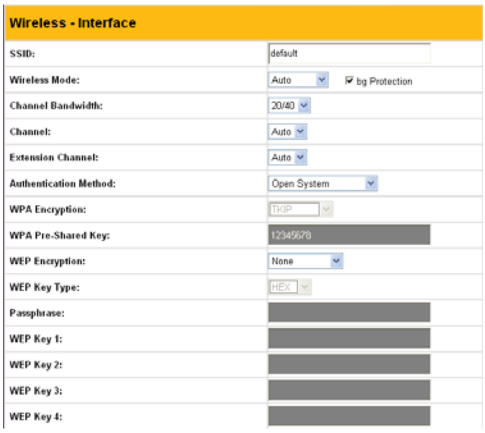
● Home Gateway	In this mode, we suppose you use RT-N15 to connect to Internet through ADSL or Cable Modem. And, there are many people in your environment share the same IP to ISP. Explaining with technical terms, gateway mode is , NAT is enabed, WAN connection is allowed by using PPPoE, or DHCP client, or static IP. In addition, some features which are useful for home user, such as UPnP and DDNS, are supported.
○ Router	In Router mode, we suppose you use RT-N15 to connect to LAN in your company. So, you can set up routing protocol to meet your requirement in office. Explaining with technical terms, router mode is, NAT is disabled, static routing protocol are allowed to set.
○ Access Point	In Access Point mode, 4 LAN ports and wireless devices are set to locate in the same local area network. Those WAN related functions are not supported here. Explaining with technical terms, access point mode is, NAT is disabled, wireless LAN and four LAN ports of RT-N15 are bridged together.

2) Setting up wireless encryption

RT-N15 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-N15, contact your network administrator for advice.

Click **Wireless -> Interface** to open the configuration page.





Wireless - Interface

SSID:	default
Wireless Mode:	Auto ☑ bg Protection
Channel Bandwidth:	20/40
Channel:	Auto
Extension Channel:	Auto
Authentication Method:	Open System
WPA Encryption:	TKIP
WPA Pre-Shared Key:	12345678
WEP Encryption:	None
WEP Key Type:	HEX
Passphrase:	
WEP Key 1:	
WEP Key 2:	
WEP Key 3:	
WEP Key 4:	

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-N15 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-N15 include: Open, shared key, WPA-PSK, WPA, and Radius with 80.211x.

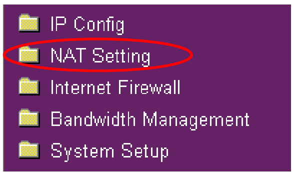
> **Open:** This option disables authentication protection for wireless network. Under Open mode, any IEEE802.11b/g client can connect to your wireless network.
>
> **Shared:** This mode uses the WEP keys currently in use for authentication.
>
> **WPA/WPA2 and WPA-PSK/WPA2-PSK:** WPA stands for WiFi-Protected 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.

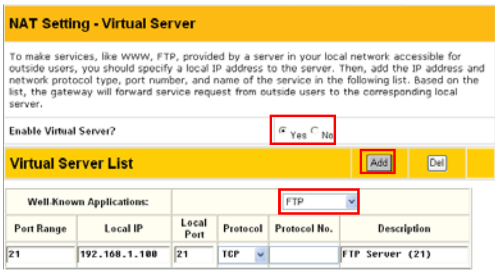
3) Setting up virtual server in your LAN

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**.



NAT Setting - Virtual Server

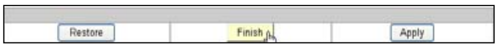
To make services, like WWW, FTP, provided by a server in your local network accessible for outside users, you should specify a local IP address to the server. Then, add the IP address and network protocol type, port number, and name of the service in the following list. Based on the list, the gateway will forward service request from outside users to the corresponding local server.

Enable Virtual Server? ● Yes ○ No

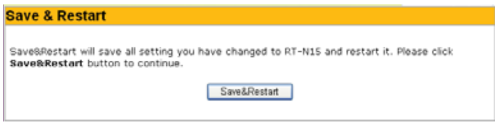
Virtual Server List Add Del

Well-Known Applications: FTP

Port Range	Local IP	Local Port	Protocol	Protocol No.	Description
21	192.168.1.100	21	TCP		FTP Server (21)



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



Save & Restart

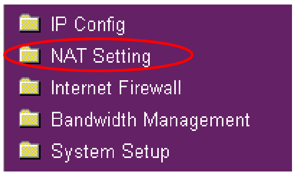
Save&Restart will save all setting you have changed to RT-N15 and restart it. Please click **Save&Restart** button to continue.

Save&Restart

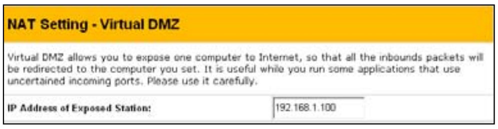
4) Setting up virtual DMZ in your LAN

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**.

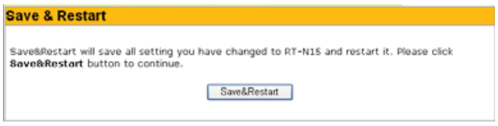


NAT Setting - Virtual DMZ

Virtual DMZ allows you to expose one computer to Internet, so that all the inbounds packets will be redirected to the computer you set. It is useful while you run some applications that use uncertained incoming ports. Please use it carefully.

IP Address of Exposed Station: 192.168.1.100

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



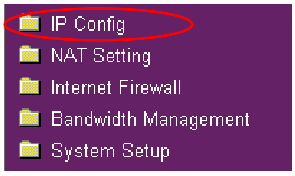
Save & Restart

Save&Restart will save all setting you have changed to RT-N15 and restart it. Please click **Save&Restart** button to continue.

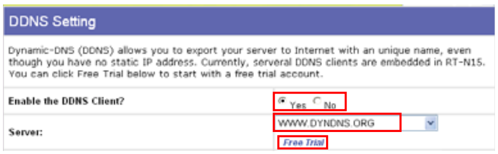
5) Setting up DDNS

DNS enables host who uses static IP address to associate with a domain name; for dynamic IP users, they can also associate with a domain name via dynamic DNS (DDNS). DDNS requires registering and account-creating at DDNS service providers' website. The DDNS server updates your IP address information once you are assigned to a new IP address. Thus, the Internet user can always access your network.

1. Click **DDNS** from IP Config folder.



2. Select **Yes** to enable the DDNS service. If you do not have a DDNS account, click **Free Trial** to register for a trial account.



DDNS Setting

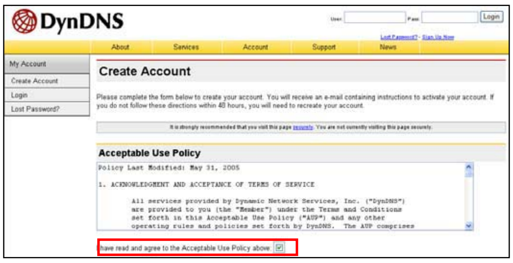
Dynamic-DNS (DDNS) allows you to export your server to Internet with an unique name, even though you have no static IP address. Currently, serveral DDNS clients are embedded in RT-N15. You can click Free Trial below to start with a free trial account.

Enable the DDNS Client? ● Yes ○ No

Server: WWW.DYNDNS.ORG

3. 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...**".



Create Account

Please complete the form below to create your account. You will receive an e-mail containing instructions to activate your account. If you do not follow these directions within 48 hours, you will need to recreate your account.

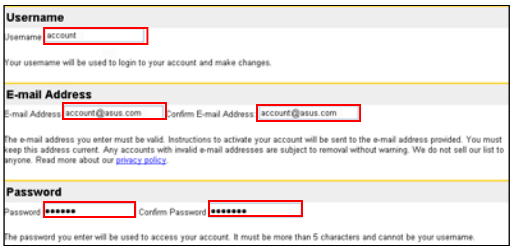
It is strongly recommended that you visit this page securely. You are not currently visiting this page securely.

Acceptable Use Policy

```
Policy Last Modified: May 31, 2005

1. ACKNOWLEDGMENT AND ACCEPTANCE OF TERMS OF SERVICE

      All services provided by Dynamic Network Services, Inc. ("DynDNS")
      are provided to you (the "Member") under the Terms and Conditions
      set forth in this Acceptable Use Policy ("AUP") and any other
      operating rules and policies set forth by DynDNS.  The AUP comprises
```

I have read and agree to the Acceptable Use Policy above: ☑

4. Enter your user name, e-mail address, password, then click **Create Account**.



Username

Username: account

Your username will be used to login to your account and make changes.

E-mail Address

E-mail Address: account@asus.com Confirm E-mail Address: account@asus.com

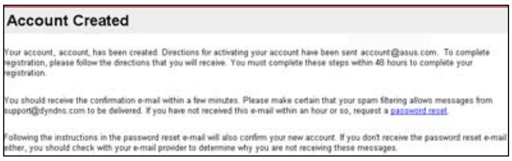
The e-mail address you enter must be valid. Instructions to activate your account will be sent to the e-mail address provided. You must keep this address current. Any accounts with invalid e-mail addresses are subject to removal without warning. We do not sell our list to anyone. Read more about our privacy policy.

Password

Password: •••••• Confirm Password: •••••••

The password you enter will be used to access your account. It must be more than 5 characters and cannot be your username.

5. 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.



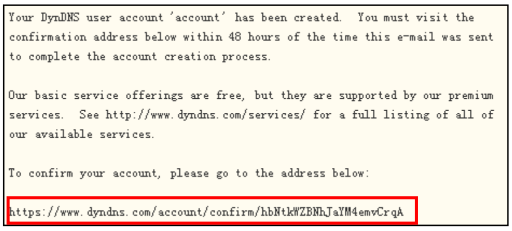
Account Created

Your account, account, has been created. Directions for activating your account have been sent account@asus.com. To complete registration, please follow the directions that you will receive. You must complete these steps within 48 hours to complete your registration.

You should receive the confirmation e-mail within a few minutes. Please make certain that your spam filtering allows messages from support@dyndns.com to be delivered. If you have not received this e-mail within an hour or so, request a password reset.

Following the instructions in the password reset e-mail will also confirm your new account. If you don't receive the password reset e-mail either, you should check with your e-mail provider to determine why you are not receiving these messages.

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



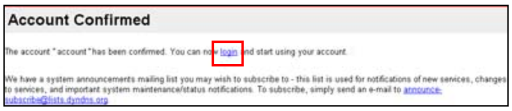
Your DynDNS user account 'account' has been created. You must visit the confirmation address below within 48 hours of the time this e-mail was sent to complete the account creation process.

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/hbNtkWZBNhJaYM4emvCrqA

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

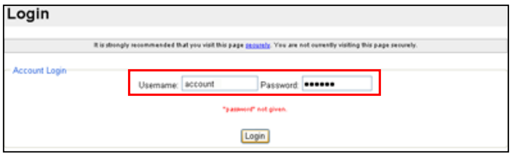


Account Confirmed

The account "account" has been confirmed. You can now login and start using your account.

We have a system announcements mailing list you may wish to subscribe to - this list is used for notifications of new services, changes to services, and important system maintenance/status notifications. To subscribe, simply send an e-mail to announce-subscribe@lists.dyndns.org

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



Login

It is strongly recommended that you visit this page securely. You are not currently visiting this page securely.

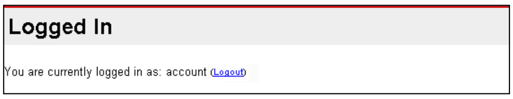
Account Login

Username: account Password: ••••••

"password" not given.

Login

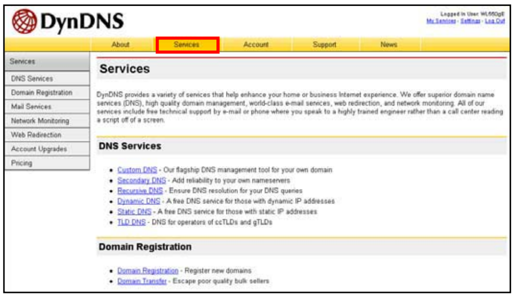
9. After logging in, you can see this welcome message.



Logged In

You are currently logged in as: account (Logout)

10. Select **Services** tab.



Services

DynDNS provides a variety of services that help enhance your home or business Internet experience. We offer superior domain name services (DNS), high quality domain management, world-class e-mail services, web redirection, and network monitoring. All of our services include free technical support by e-mail or phone where you speak to a highly trained engineer rather than a call center reading a script off of a screen.

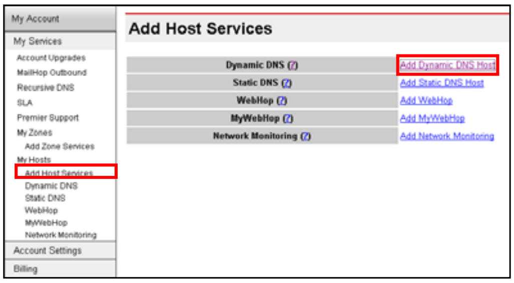
DNS Services

- Custom DNS - Our flagship DNS management tool for your own domain
- Secondary DNS - Add reliability to your own nameservers
- Recursive DNS - Ensure DNS resolution for your DNS queries
- Dynamic DNS - A free DNS service for those with dynamic IP addresses
- Static DNS - A free DNS service for those with static IP addresses
- TLD DNS - DNS for operators of ccTLDs and gTLDs

Domain Registration

- Domain Registration - Register new domains
- Domain Transfer - Escape poor quality bulk sellers

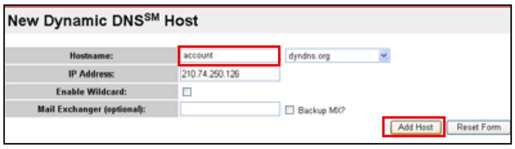
11. Click **Add Dynamic DNS Host** .



Add Host Services

Dynamic DNS (?)	Add Dynamic DNS Host
Static DNS (?)	Add Static DNS Host
WebHop (?)	Add WebHop
MyWebHop (?)	Add MyWebHop
Network Monitoring (?)	Add Network Monitoring

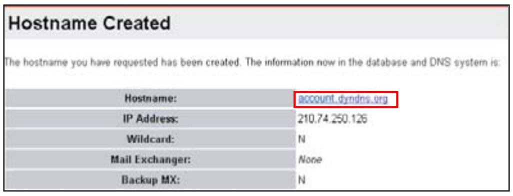
12. Enter the host name then click **Add Host**.



New Dynamic DNS^{SM} Host

Hostname:	account	dyndns.org
IP Address:	210.74.250.126	
Enable Wildcard:	□	
Mail Exchanger (optional):		□ Backup MX?

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

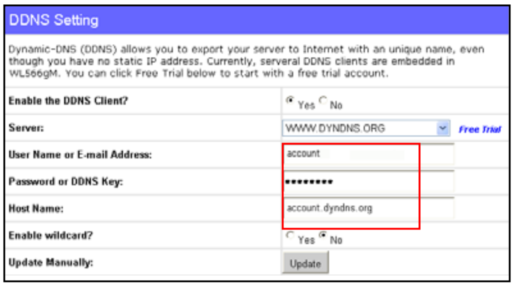


Hostname Created

The hostname you have requested has been created. The information now in the database and DNS system is:

Hostname:	account.dyndns.org
IP Address:	210.74.250.126
Wildcard:	N
Mail Exchanger:	*None*
Backup MX:	N

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

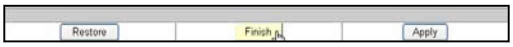


DDNS Setting

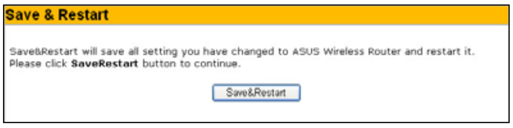
Dynamic-DNS (DDNS) allows you to export your server to Internet with an unique name, even though you have no static IP address. Currently, serveral DDNS clients are embedded in WL566gM. You can click Free Trial below to start with a free trial account.

Enable the DDNS Client?	● Yes ○ No
Server:	WWW.DYNDNS.ORG Free Trial
User Name or E-mail Address:	account
Password or DDNS Key:	●●●●●●●●●
Host Name:	account.dyndns.org
Enable wildcard?	○ Yes ● No
Update Manually:	Update

15. Click **Finish**.



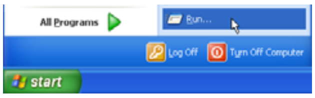
16. Click **Save & Restart** to restart the wireless router and activate the settings.

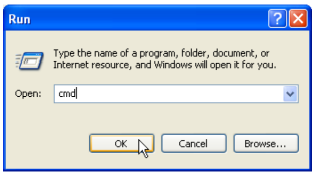


Save & Restart

Save&Restart will save all setting you have changed to ASUS Wireless Router and restart it. Please click **SaveRestart** button to continue.

17. Verify whether DDNS is working. Click **Start** menu and select **Run.** Type **cmd** and click **OK** to open the CLI console.



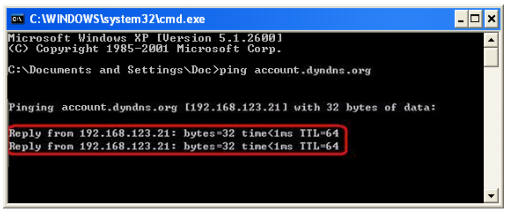


Run

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: cmd

18. 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.



C:\WINDOWS\system32\cmd.exe

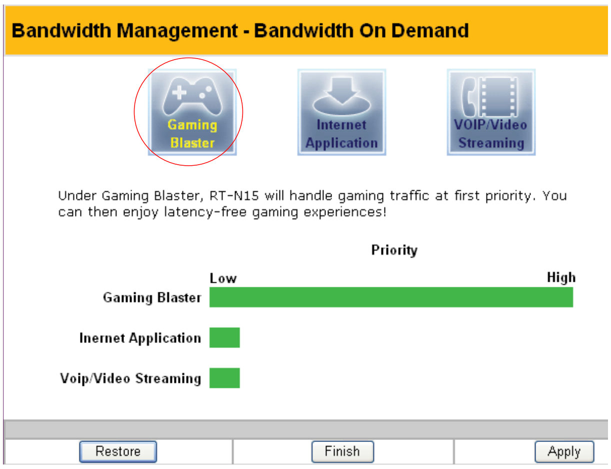
```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Doc>ping account.dyndns.org


Pinging account.dyndns.org [192.168.123.21] with 32 bytes of data:

Reply from 192.168.123.21: bytes=32 time<1ms TTL=64
Reply from 192.168.123.21: bytes=32 time<1ms TTL=64
```

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**, **500W FTP Server**, 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:

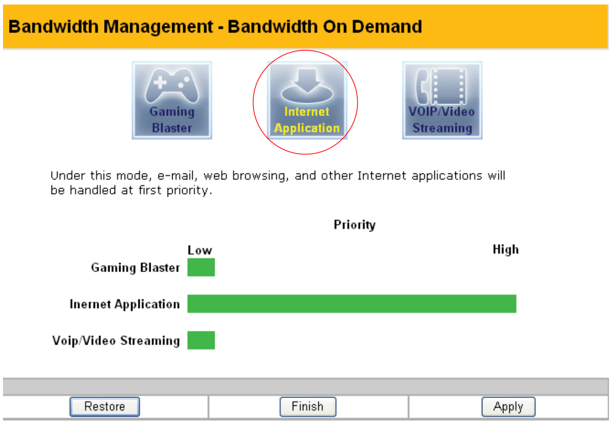
Gaming Blaster



Bandwidth Management - Bandwidth On Demand

Under Gaming Blaster, RT-N15 will handle gaming traffic at first priority. You can then enjoy latency-free gaming experiences!

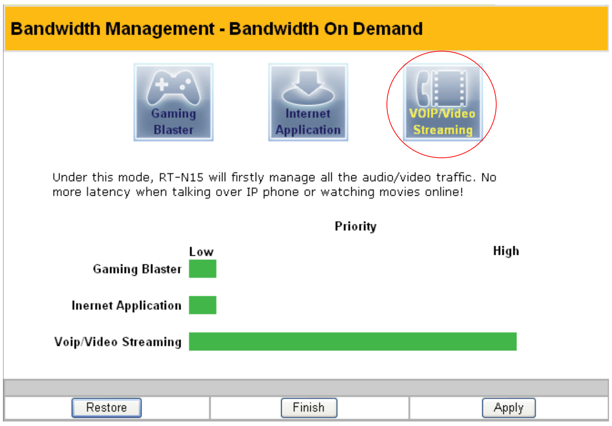
Internet Application



Bandwidth Management - Bandwidth On Demand

Under this mode, e-mail, web browsing, and other Internet applications will be handled at first priority.

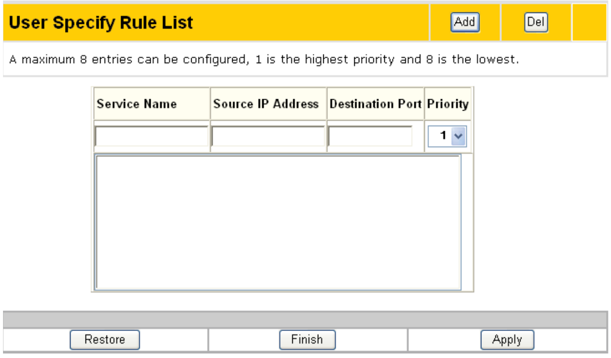
VOIP/Video Streaming



Bandwidth Management - Bandwidth On Demand

Under this mode, RT-N15 will firstly manage all the audio/video traffic. No more latency when talking over IP phone or watching movies online!

2. You can also configure the bandwith manually by clicking "**User Specify Services**". Input the **IP adress**, **destination port** and choose the **priority status from** the drop-down list.



User Specify Rule List

A maximum 8 entries can be configured, 1 is the highest priority and 8 is the lowest.

Service Name	Source IP Address	Destination Port	Priority
			1