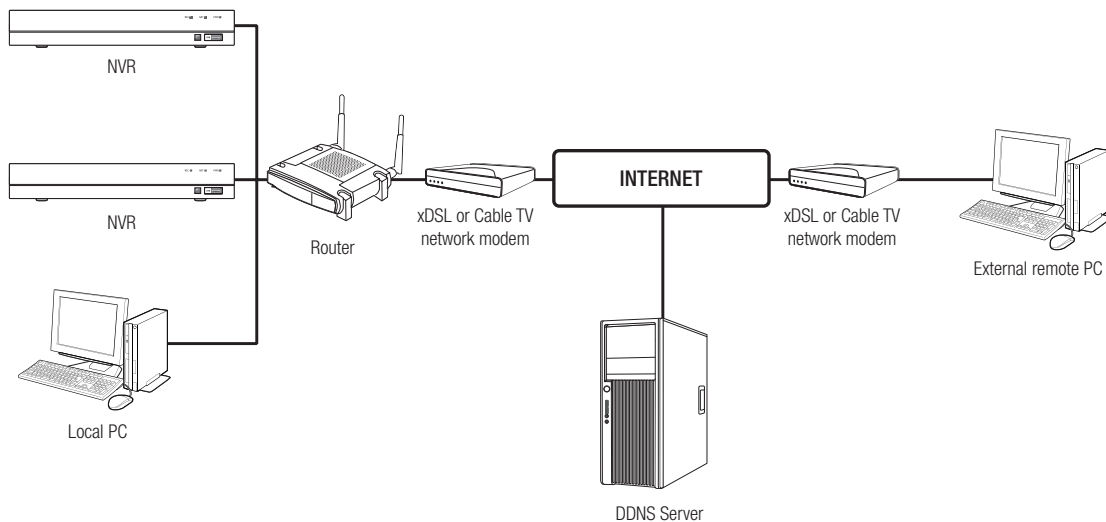# Quick Network Setup Guide

Use Router to Connect to Network

By using a router, you can connect your computer and 1-3 NVRs to the Internet through sharing by using a XDSL or cable TV modem. This guide is intended for the average users other than professional network engineers.

To use the router properly, please closely follow Steps 1-6.

Configure router, PC and NVR device in accordance with the following steps.

Step 1. Connect the cable

Step 2. Connect your local computer to the router

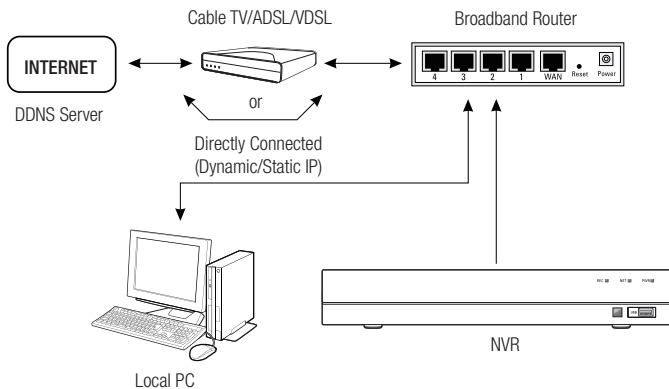**Step 3. Connect the NVR to the router**

Step 4. Connect the router to Internet service line

Step 5. Configure Port Forwarding for Router

Step 6. Use the DDNS to access the NVR in dynamic IP environment

Step 1. Connect the cable

1. Connect the Internet service line (XDSL/cable TV Modem) to the Internet (WAN) port on the router.
2. Connect the computer and NVR to the LAN port (1-4) on the router by using an Ethernet cable.

Cable TV/ADSL/VDSL   Broadband Router

INTERNET

DDNS Server

or

Directly Connected
(Dynamic/Static IP)

Local PC

NVR

Step 2. Connect local computer to the router

Step 2.1 Connection Settings

1. Click [Start] on your computer.
2. Access <Control Panel> - <Network Connection>.
   The Network Connection Window is as shown in the figure.
3. Select <Local Connection>.
4. Right click on the mouse and select <Properties>.

5. The <Local Connection Properties> Window is as shown in the figure.
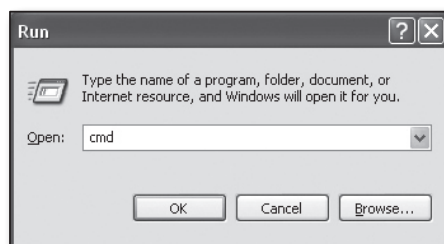6. Select <Internet Protocol (TCP/IP)>, and then click on [Properties].
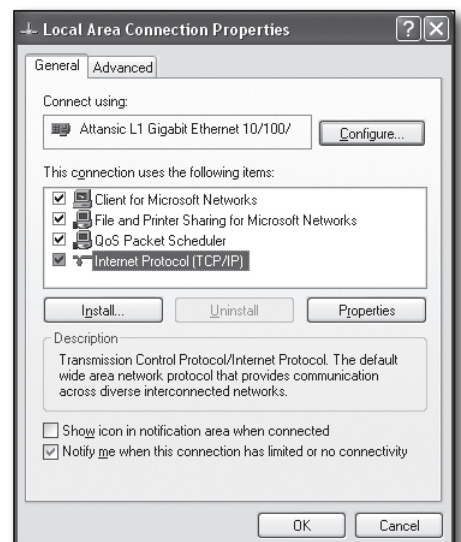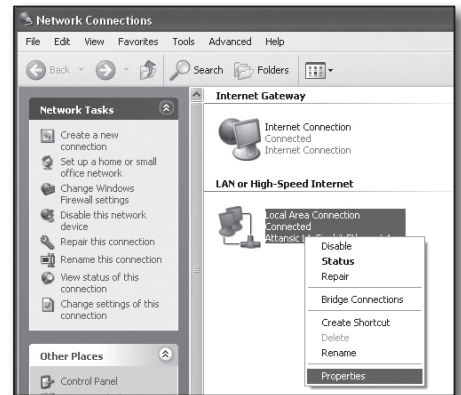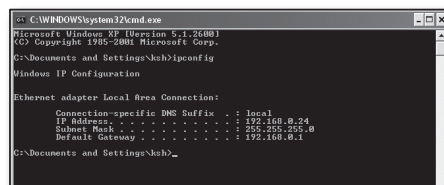
7. Select <Obtain an IP address automatically> and <Obtain DNS server address automatically>, and then click on <OK>.

**8.** Click on <OK> to finish setting.
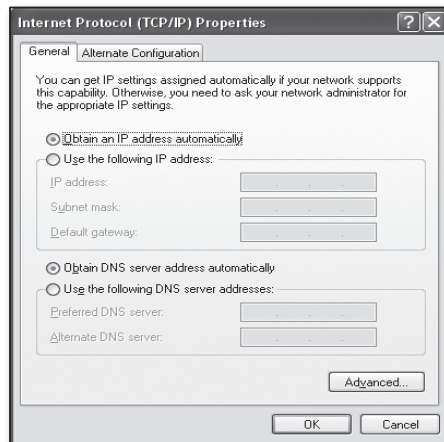
Step 2.2 Verify connection

1. Click [Start] on your computer.

2. Click on [Run].

3. Enter "cmd" in <Open> text box found within the <Run> dialog box, and then click on [OK].

4. Enter "ipconfig" in DOS command line window [cmd.exe] and press [ENTER].

5. Run Internet Explorer and enter the IP address of <Default Gateway> in the address bar found in "cmd.exe" window, and then press [ENTER].

6. If all connections have been set up properly, a router login page will be displayed.
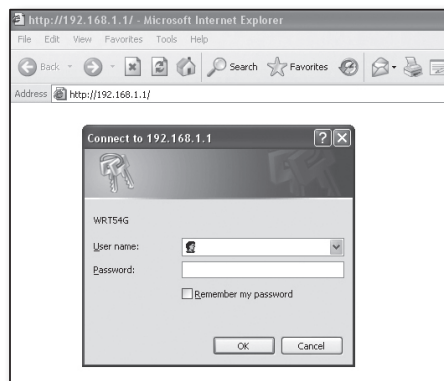
7. If the connection fails, check all cables and return to Step 2.1, and then select
<Repair>.
In "Local Connection Status" window, click on <Support> tab and select
Default Gateway> (if it matches the gateway as found in [cmd.exe] window,
and then check connection again.)
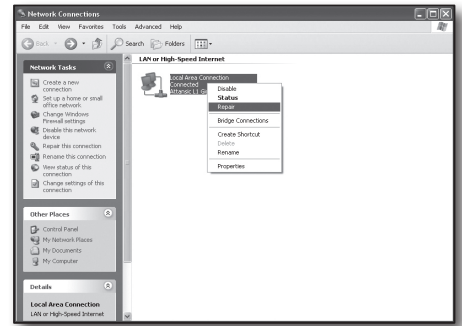
Step 3. Connect NVR to the router

Step 3.1 Configure NVR router settings

1. Select [Main Menu ➜ Parameter].

2. Select <Network> window.

3. Select <Static>. The connection setting window will be displayed.

4. Move the cursor to the desired item.

5. Manually input <IP address> when static connection is selected.
The IP address consists of 4 fields, and the first 3 fields should be same to
those of <Default Gateway> address of your computer which can be found in
Step 2, and the last field should be an unoccupied figure between 2 and 254.
For example, IP: 192.168.1.200.

6. Enter <Gateway> and < Subnet Mast> (the same parameters as found in your
computer in Step 2).

7. Set <Client Port> and <HTTP Port>.
Refer to the next page for setting up the Client port and HTTP port.
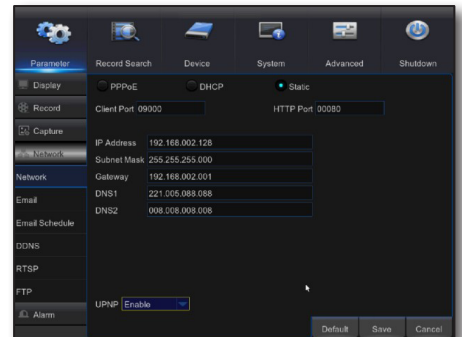
What's a Port?

Port 80 is generally used for <HTTP Port> in the HTTP protocol.

If no port is set, it will be automatically set to 80 in the HTTP protocol.

For example, http://www.yahoo.com and http://www.yahoo.com:80 will be deemed as equal.

Therefore, if < HTTP Port> has been set to any port other than 80, then you have to specify the address in the following form:
http://<IP address>:<HTTP Port>,

For example, http://192.168.1.200:80 to connect to the NVR using internet browser. It is recommended to set <HTTP Port> to a
port number between 1024 and 65535.

If the port is not set to 80, access may be limited (depending on the security strategy or firewall configuration of your ISP).

NVR uses <HTTP Port> and <Client Port> for Web connection.

<HTTP Port> is used for access to NVR through the Web Browser.

<Client Port> is used to receive video sent from NVR through the Web browser.

When several NVRs are configured, the <HTTP Port> and <Client Port> settings should be configured respectively for each NVR.

For example, NVR #1: 4520, HTTP port: 80
　　　　　　　NVR #2: 4529, HTTP port: 2000

Step 3.2 Check NVR Connections on Computer

1. Run Internet Explorer, and enter the <IP Address> and <HTTP Port> of NVR into the address bar, and then press [ENTER].
For example, http://192.168.1.200: 80.

2. If the connection has been set up correctly, the Web Viewer screen will be displayed.

3. If the connection fails, check Step 1, 2 and 3 to verify connection settings.
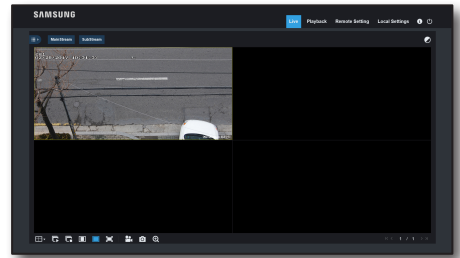
Step 4. Connect the router to Internet service line

Internet connection setup and procedure may vary depending on the specific router. Please check your router setup method.

Connection type depends on your Internet service

Set Internet connection based on the type of Internet service. Check your environment and choose the proper connection type before you proceed.

- DHCP: Dynamic IP environment (allocate IP address automatically).

- Static (fixed) IP: IP environment where public IP address is used.

- PPPoE: commonly used in DSL environment, requiring ADSL access ID and password.
For your user ID and password, consult your ISP.
Name of each type stated above may vary depending on router manufacturer.

Step 4.1 Connection guide (by router)

Step 4.1-Case 1. D-Link DIR-330

1. Run Internet Explorer and enter the IP address of <Default Gateway> found in Step 2 in the address bar, and then press [ENTER].

2. When the router login screen is displayed, enter your User name and Password. For your User name and Password, refer to the user manual for the router.

3. Select Internet connection method from connection setup wizard and manual setup. Selecting the Internet Connection Setup Wizard automatically moves to the next step.

4. Click on <Manual Setting>.
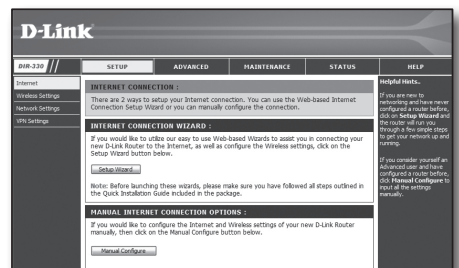
5. Select <Internet Connection Type>.

Dynamic IP Address Environment

6. Select <Dynamic IP (DHCP)>.

7. Click on [Save Settings].

Static IP Address Environment

8. Select <Static IP>.

9. Enter the <IP Address>, <Subnet Mask> and <ISP Gateway Address> allocated by your ISP.

10. Click on [Save Settings].

ADSL Environment

11. Select <PPPoE (Username/Password)>.

12. Enter your User name and Password. For your User name and Password, consult your ISP.

1. Run Internet Explorer and enter the IP address of <Default Gateway> found in Step 2 into the address bar, and then press [ENTER].

2. When the router login window is displayed, enter your User name and Password.
    For your User name and Password, refer to the user manual for the router.

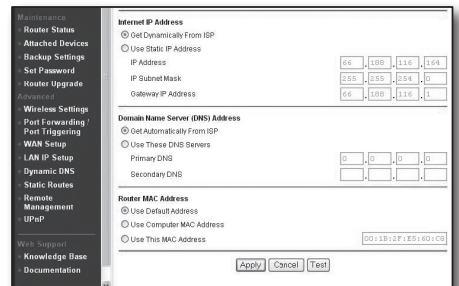3. Click on <Setup> - <Basic Settings> from the menu on the left side.
    Click <Setup Wizard> for automatic setup.
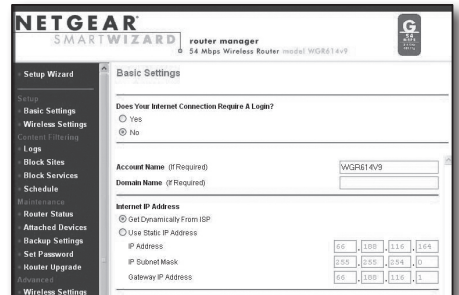
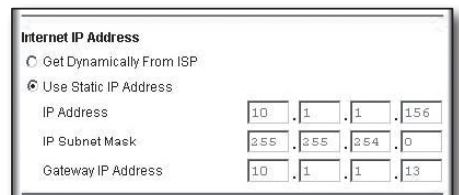### Dynamic IP Address Environment

4. Select <Get Dynamically From ISP>.

5. Click on [Apply].

Static IP Address Environment

6. Select <Use Static IP Address>.

7. Enter <IP Address>, <IP Subnet Mask> and <Gateway IP Address>.
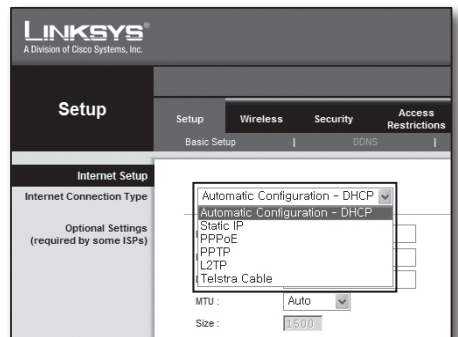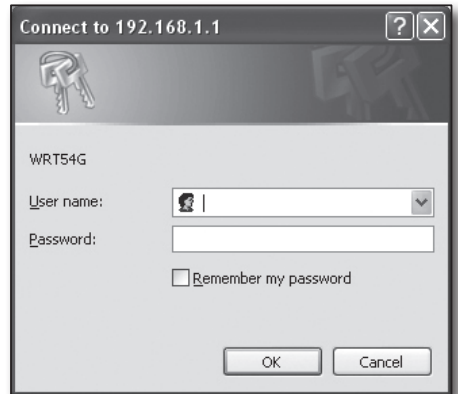
8. Click on [Apply].

9. All changes will now be saved.

Check Connection

Upon connection, the status indicator <DHCP Client> will be displayed at the top of the screen.

Router Status

Account Name	WGR614v6
Firmware Version	V1.0.3_1.0.3

Internet Port

MAC Address	00:D0:59:E1:1B:FE
IP Address	10.1.1.156
DHCP	DHCPClient
IP Subnet Mask	255.255.254.0
Domain Name Server	10.1.1.6
	10.1.1.7

Step 4.1-Case 3. LINKSYS WRT54G

1. Run Internet Explorer and enter the <Default Gateway> found in Step 2 into the address bar, and then press [ENTER].

2. When the router login screen is displayed, enter your User name and Password.
    For your ID and password, refer to the user manual for the router.

Connect to 192.168.1.1

WRT54G

User name:

Password:

☐ Remember my password

OK   Cancel

3. Click on <Internet Setup>.

4. The setup screen to be displayed varies depending on your Internet Connection type.

LINKSYS®
A Division of Cisco Systems, Inc.

Setup

| Setup | Wireless | Security | Access Restrictions |

Basic Setup | DDNS |

Internet Setup

Internet Connection Type

Automatic Configuration – DHCP
Automatic Configuration – DHCP
Static IP
PPPoE
PPTP
L2TP
Telstra Cable

Optional Settings (required by some ISPs)

MTU :   Auto

Size :   1500

Dynamic IP Address Environment

5. Select <Automatic Configuration-DHCP>.

6. Click on [Save Settings] at the bottom.

Static IP Address Environment

7. Select <Static IP>.

8. Enter the <Internet IP Address>, <Subnet Mask> and <Gateway> allocated by your ISP.

9. Click on [Save Settings] at the bottom.

ADSL Environment

10. Select <PPPoE>.

11. Enter your User name and Password.
For your User name and Password, consult your ISP.

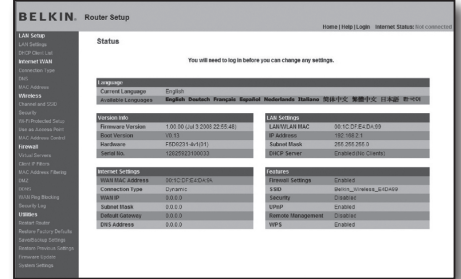**12.** Click on [Save Settings] at the bottom.

13. Upon completion, a completion page will be displayed.

1. Run Internet Explorer and enter the IP address of <Default Gateway> found in Step 2 into the address bar, and then press [ENTER].

2. Click on <WAN> - <Connection Type>. Select your Internet Service type.
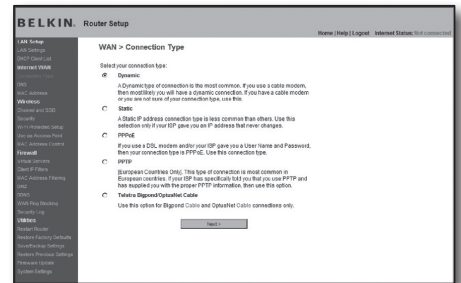
Dynamic IP Address Environment

3. Select <Dynamic> as the connection type and click on [Next].

4. Enter <Host Name>and click on [Apply Changes].
If your ISP provided you with a specific DNS address, please click on <WAN> - <DNS> and enter the DNS address.
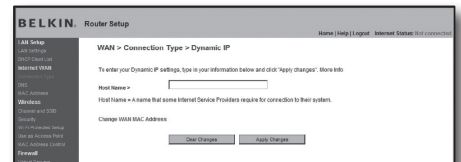
Static IP Address Environment

5. Select <Static> as the connection type and click on [Next].

6. Enter the <IP Address> allocated by your ISP.

7. Enter <Subnet Mask> and <ISP Gateway Address>.

8. Click on [Apply Changes].
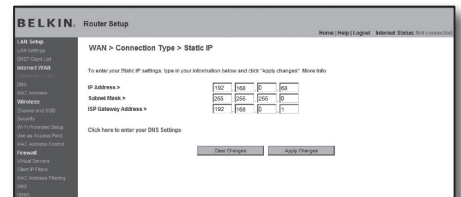
ADSL Environment

9. Select <PPPoE> as the connection type and click on [Next] button.

10. Enter your User name and Password.
For your User name and Password, consult your ISP.

11. Click on [Apply Changes].
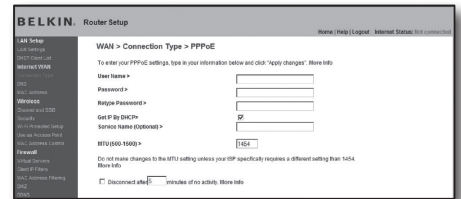
Check Connection

Once connected, the status indicator <Connection> will be displayed at the top of the interface.
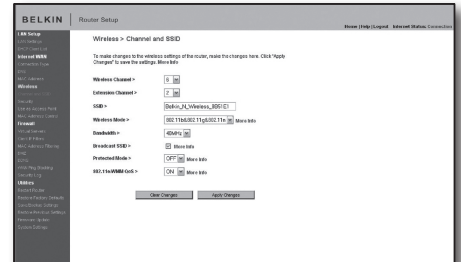
Step 4.1-Case 5. TRENDNET TEW-652BRP

1. Run Internet Explorer and enter the IP address of <Default Gateway> found in Step 2 into the address bar, and then press [ENTER].

2. When the router login window is displayed, enter your User name and Password.
For your ID and password, refer to the user manual for the router.
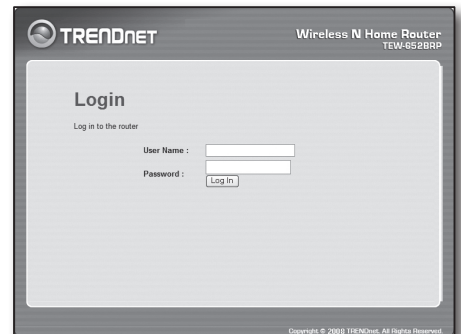
3. Click on <WAN> from the menu at the left side of the setup page.

4. Select <Connection Type>.

Dynamic IP Address Environment

5. Select <DHCP Client or Fixed IP>.

6. Click on <Obtain IP Automatically>.
   If your ISP provided you with a specific DNS address, please click on <WAN>
   - <DNS> and enter the DNS address.

7. Click on [Apply] button at the bottom.
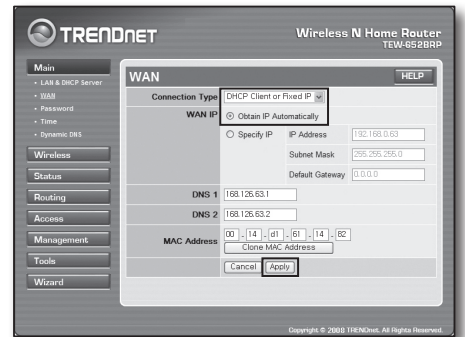
Static IP Address Environment

8. Select <DHCP Client or Fixed IP>.

9. Select <Specify IP>.

10. Enter <IP Address>, <Subnet Mask> and <Default Gateway>.

11. Enter <DNS1> and <DNS2>.
   If your ISP provided you with a specific DNS address, please click on <WAN>
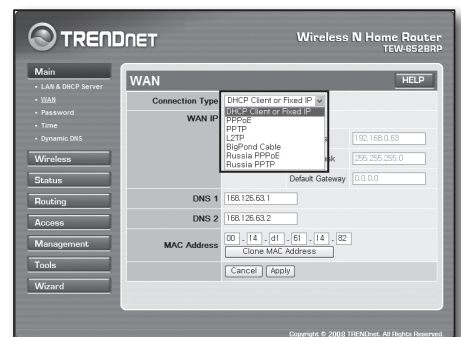   - <DNS> and enter the DNS address.

12. Upon completion, click on [Apply] button at the bottom.
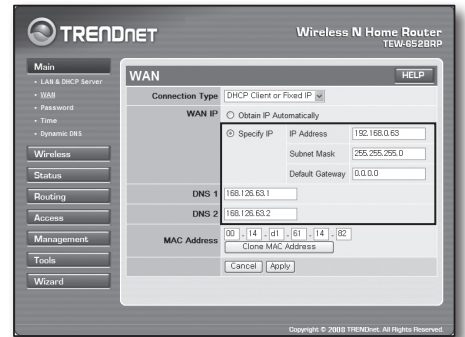
ADSL Environment

13. Select <PPPoE>.

14. Select appropriate method of obtaining <WAN IP> address.

15. Enter <Service Name>, <User Name> and <Password>.
   For your User name and Password, consult your ISP.
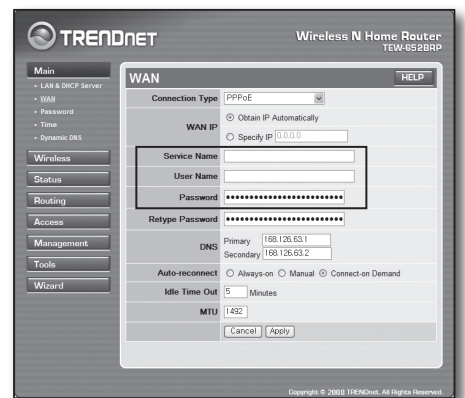
Check Connection

16. Click on <Status> - <Device Information> from the menu on the left side, and check the current status of server at <DHCP Server> under LAN type. When the connection is set up successfully, the <Enabled DHCP Table> will be displayed.
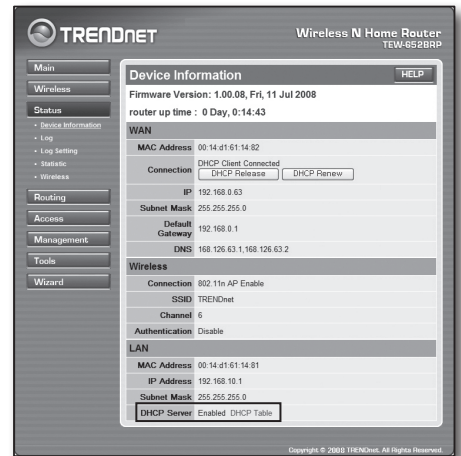
Step 4.2 Check connection to Internet

1. Run Internet Explorer on your computer.

2. Enter the IP address of <Default Gateway> found in Step 2 into the address bar, and then press [ENTER].

3. Click on Status tab on router menu.

4. Check the WAN (Internet) connection status and WAN (Internet) IP address.

5. When the connection is set up successfully, a message <DHCP Client Connected> will be displayed, and an address will be displayed for the WAN (Internet) IP.
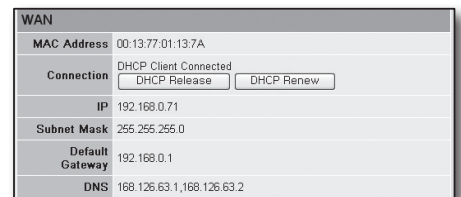
6. Use Internet Explorer to access Yahoo, Google and other Web servers.

7. If the connection has been set up correctly, Internet Explorer will properly display the page on the Web server accessed.

8. If connection fails, please return to Step 4 and check it again.
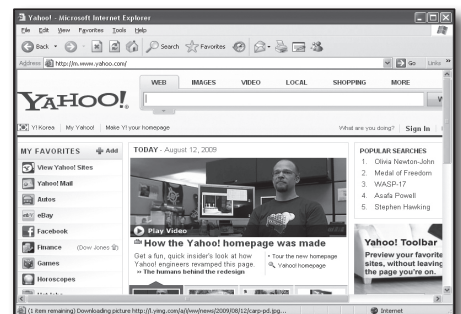
Step 5. Port Forwarding

Port forwarding should be configured for accessing from the outside of the router network to a computer or NVR which is connected to the router.
Configure router port forwarding in accordance with the following instructions.

> ## What's port forwarding?
>
> It is a port mapping from <WAN (Internet) IP: port of Router> to <IP: port of NVR>. It helps start the communication channel between the interior and exterior of private LAN.

As a NVR uses two ports for communication, port forwarding should be set up for two ports.

⚠ ■ If port forwarding is configured only for the <HTTP Port>: the Web Viewer can be accessed through the Web browser, but the video cannot be received, because port forwarding is not configured for <Client Port> which is used for video data communication.
If port forwarding is configured only for <Client Port>: the Web Viewer cannot be accessed through the Web browser, because port forwarding is not configured for <HTTP Port>, which is used for communication.
The Port forwarding method for each type of router is described below. For other routers not guided herein, refer to the user manual for the router.

Step 5.1 Port Forwarding Guide (by router)

Run Internet Explorer and enter the IP address of <Default Gateway> found in Step 2 into the address bar, and then press [ENTER].

Step 5.1-Case 1. D-LINK DIR-330

1. Select <Advanced>.
2. Set port forwarding for <HTTP Port>.
   2⁻¹. Find the <Check box> and check it.
   2⁻². Enter a name for the NVR port in the <Name>field.
      For example, "NVR 1"
   2⁻³. In <Public Port>, enter the <HTTP Port> defined in Step 3.
      For example, 80-80
   2⁻⁴. In <Private Port>, enter the <HTTP Port> defined in Step 3.
      For example, 80-80
   2⁻⁵. In <IP Address>, enter the IP address defined for NVR in Step 3.
      For example, 192.168.1.200
   2⁻⁶. Select <Any> for <Traffic Type>.

3. Set port forwarding for <Client Port>.
   3⁻¹. Find the <Check box> and check it.
   3⁻². Enter a name for the NVR port in the <Name> field.
      For example, "NVR 2"
   3⁻³. In <Public Port>, enter the <Client Port> defined in Step 3.
      For example, 4520~4524
   3⁻⁴. In <Private Port>, enter the <Client Port> defined in Step 3.
      For example, 4520~4524
   3⁻⁵. In <IP Address>, enter the IP address defined for NVR in Step 3.
      For example, 192.168.1.200

4. Upon completion, click on [Save Settings].

Step 5.1-Case 2. NETGEAR 614SS

1. Click on [Port Forwarding / Port Triggering] from the menu on the left side.

2. Select <Port Forwarding>.

3. Set port forwarding for <HTTP Port>.

    3⁻¹. Set port forwarding for <Add Custom Service>.

    3⁻². In <Service Name> field enter a name for NVR.
For example, "NVR 1"

    3⁻³. Enter <Starting Port> and <Ending Port> matching the <HTTP Port> defined in Step 3.
For example, 80

    3⁻⁴. In <Server IP Address>, enter the IP address defined for NVR in Step 3.
For example, 192.168.1.200

    3⁻⁵. Click [Apply] to finish setting.

4. Set port forwarding for <Client Port>.

    4⁻¹. Click on <Add Custom Service> button.

    4⁻². In <Service Name> field, enter a name for <Client Port> of NVR.
For example, "NVR 2"

    4⁻³. Enter <Start Port> and <End Port> matching the <Client Port> defined in Step 3.
For example, 4520, 4524.

    4⁻⁴. In <Server IP Address>, enter the IP address defined for NVR in Step 3.
For example, 192.168.1.200

    4⁻⁵. Click [Apply] to finish setting.

Step 5.1-Case 3. LINKSYS WRT54G

1. Click on <Application & Gaming>.

2. Set port forwarding for <HTTP Port>.

    2⁻¹. In <Application> field, enter a name for NVR port.
For example, "NVR 1"

    2⁻². In <Start> and <End> fields, enter <HTTP Port> defined in Step 3.
For example, 80

    2⁻³. Select [Both] for <Protocol>.

    2⁻⁴. In <IP Address>, enter the IP address defined for NVR in Step 3.
For example, 192.168.1.200

    2⁻⁵. Select the check box in the <Enable> column for the specified port.

3. Set port forwarding for <Client Port>.

   3⁻¹. In <Application> field, enter a name for NVR port.
   For example, "NVR 2"

   3⁻². In <Start> and <End> fields, enter <Client Port> defined in Step 3.
   For example, 192.168.1.200

   3⁻³. Select [Both] for <Protocol>

   3⁻⁴. In <IP Address>, enter the IP address defined for NVR in Step 3.
   For example, 192.168.1.200

   3⁻⁵. Select the check box in <Enable> column for the specified port.

4. Click on [Save Settings] at the bottom.

**5.** Upon completion, the completion screen will be displayed.

Settings are successful.
Continue

Step 5.1-Case 4. BELKIN F5D8236-4
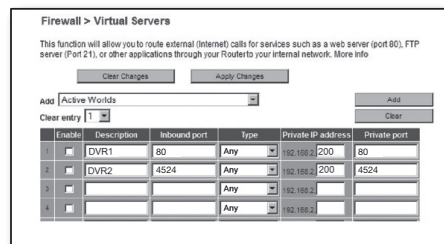
1. Click on <Firewall> - <Virtual Servers> from the menu at the left side.

2. Set port forwarding for <HTTP Port>.

   2⁻¹. Select <Enable> check box to mark the selected port.

   2⁻². In <Description> field, enter a name for NVR port.
   For example, "NVR 1"

   2⁻³. In <Inbound Port>, enter the <HTTP Port> defined in Step 3.
   For example, 80

   2⁻⁴. Select <Any> for <Type>.

   2⁻⁵. In <Private IP Address>, enter the IP address defined for NVR in Step 3.
   For example, 192.168.1.200

   2⁻⁶. In <Private Port>, enter the <HTTP Port> defined in Step 3.
   For example, 80
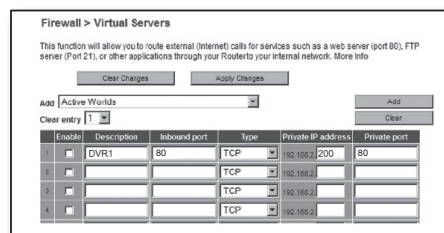
3. Set port forwarding for <Client Port>.

   3⁻¹. Select <Enable> check box to mark the selected port.

   3⁻². In <Description> field, enter a name for NVR port.
   For example, "NVR 2"

   3⁻³. In <Inbound Port>, enter the <Client Port> defined in Step 3.
   For example, 4520, 4521, 4522, 4523, 4524.

   3⁻⁴. Select <Any> for <Type>.

   3⁻⁵. In <Private IP Address>, enter the IP address defined for NVR in Step 3.
   For example, 192.168.1.200

   3⁻⁶. In <Private Port>, enter the <Client Port> defined in Step 3.
   For example, 4520, 4521, 4522, 4523, 4524.

4. Upon completion, click on [Apply Changes].
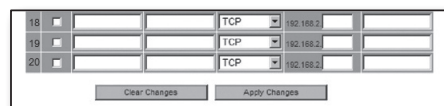
Step 5.1-Case 5. TRENDNET TEW-652BRP

1. Click on <Access> and then <Virtual Servers> from the menu on the left side.
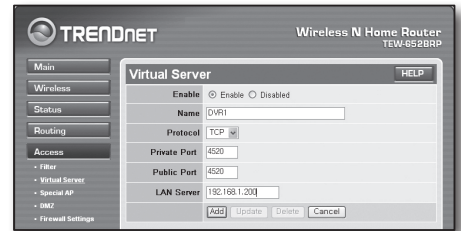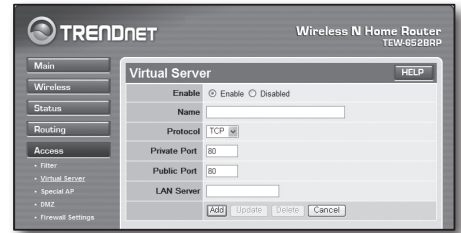
2. Set port forwarding for <HTTP Port>.

    2-1. Select [Enable] for item <Enable>.

    2-2. In <Name> field, enter a name for NVR port.
        For example, "NVR 1"

    2-3. Select [TCP] for item <Protocol>.

    2-4. In <Private Port> and <Public Port> fields, enter <HTTP Port> defined in Step 3.
        For example, 80

    2-5. In <IP Address>, enter the IP address defined for NVR in Step 3.
        For example, 192.168.1.200

    2-6. Click on [ADD].

3. Set port forwarding for <Client Port>.

    3-1. Select [Enable] for item <Enable>.

    3-2. In <Name> field, enter a name for NVR port.
        For example, "NVR 2"

    3-3. Select [TCP] for item <Protocol>.

    3-4. In <Private Port> and <Public Port> fields, enter the <Client Port> defined in Step 3.
        For example, 4520, 4521, 4522, 4523, 4524.

    3-5. In <LAN Server>, enter the IP address defined for NVR in Step 3.
        For example, 192.168.1.200

    3-6. Click on [ADD] button.

4. Finish setting.

Step 5.2 Check Port Forwarding on Computer

1. Re-verify the <WAN (Internet) IP> selected in Step 4.2.

2. Re-verify the <HTTP Port> selected for NVR in Step 3.1.

3. Run Internet Explorer and enter "http://<WAN (Internet) IP>:<HTTP Port> into the address bar and then press [ENTER].

4. If the port forwarding configuration has been set up correctly, the Web Viewer screen for the NVR will be displayed.

5. If you fail to access Web Viewer or, you can access it but the video fails to be displayed, return to Step 5.1 and check it again.

> ■ If port forwarding is configured only for <HTTP Port>: the Web Viewer can be accessed through Web browser, but the video cannot be received, because Port Forwarding is not configured for <Client Port> which is used for video data communication.
> If port forwarding is configured only for <Client Port>: the Web Viewer cannot be accessed through Web browser, because port forwarding is not configured for <HTTP Port> which is used for communication.

Step 6. Access NVR by Using DDNS Service in Dynamic IP Environment

As WAN IP address of router may be different in XDSL/cable TV network connection where dynamic IP allocation is applied, DDNS (Dynamic Domain Name Service) is provided for access to NVR with fixed DDNS address in dynamic IP network environment.

Step 6.1 NVR DDNS Configuration

1. Access <Network> window, select <DDNS>, and the DDSN setting page will appear.

2. DDNS: select Enable.
   Server: HANWHA-SECURITY, DDNS_3322, DYNDNS, NO_IP, CHANGE IP or DNSEX IT may be chosen.
   Enter domain name, user name and password provided by DDNS service provider.
   For example, Domain name: NVR2016.no-ip.org
   User name: NVR2016. Password: 123456

3. Upon completion of DDNS setting, press <OK>.
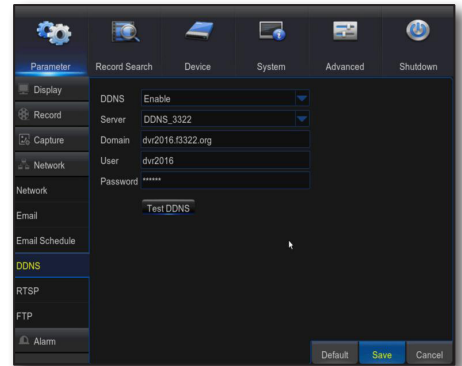
Step 6.2 Access NVR by Using DDNS Address

1. Run Internet Explorer and enter the DDNS address found in Step 6.1 into the address bar, and then press [ENTER].

2. The Live screen for NVR will be displayed.

3. If failed with accessing, return to Step 6.1 and check the setting again.

> ◼ It may take 10 minutes to update IP address of the router recorded in DDNS server. When failed with accessing, retry after 10 minutes.
> NVR will report its IP address to DDNS server once every 10 minutes.

Configuration is finished.

By remembering the DDNS address, ID and password, you can connect to your NVR from any computer that is connected to the internet.
For more information on operation, refer to the user manual for the router.