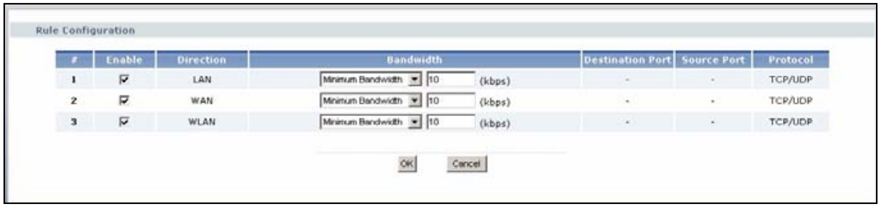
Figure 88 Management > Bandwidth MGMT > Advanced: Rule Configuration



Rule Configuration

#	Enable	Direction	Bandwidth	Destination Port	Source Port	Protocol
1	☑	LAN	Minimum Bandwidth ▾ 10 (kbps)	-	-	TCP/UDP
2	☑	WAN	Minimum Bandwidth ▾ 10 (kbps)	-	-	TCP/UDP
3	☑	WLAN	Minimum Bandwidth ▾ 10 (kbps)	-	-	TCP/UDP

The following table describes the labels in this screen.

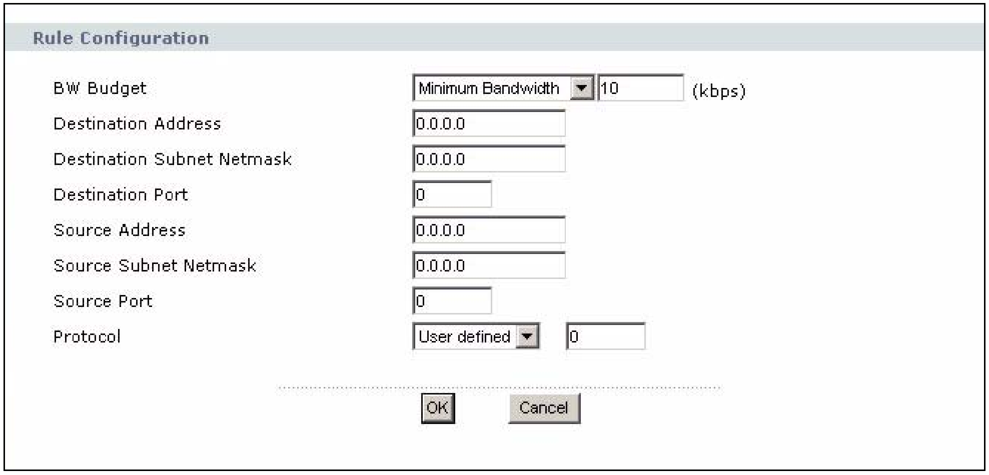
Table 62 Management > Bandwidth MGMT > Advanced: Application Rule Configuration

LABEL	DESCRIPTION
#	This is the number of an individual bandwidth management rule.
Enable	Select an interface's check box to enable bandwidth management on that interface.
Direction	These read-only labels represent the physical interfaces. Bandwidth management applies to all traffic flowing out of the router through the interface, regardless of the traffic's source. Traffic redirect or IP alias may cause LAN-to-LAN traffic to pass through the NBG318S and be managed by bandwidth management.
Bandwidth	Select **Maximum Bandwidth** or **Minimum Bandwidth** and specify the maximum or minimum bandwidth allowed for the rule in kilobits per second.
Destination Port	This is the port number of the destination. See Table 58 on page 156 for some common services and port numbers.
Source Port	This is the port number of the source. See Table 58 on page 156 for some common services and port numbers.
Protocol	This is the protocol (**TCP** or **UDP**) used for the service.
OK	Click **OK** to save your customized settings.
Cancel	Click **Cancel** to exit this screen without saving.

15.9.2 Rule Configuration with the User-defined Service

In addition to the pre-defined services, if you want to edit a bandwidth management rule for other applications and/or subnets, click the **Edit** icon in the **User-defined Service** table of the **Advanced** screen. The following screen displays.

Figure 89 Management > Bandwidth MGMT > Advanced: User-defined Service Rule Configuration



Rule Configuration

BW Budget	Minimum Bandwidth ▼ 10 (kbps)
Destination Address	0.0.0.0
Destination Subnet Netmask	0.0.0.0
Destination Port	0
Source Address	0.0.0.0
Source Subnet Netmask	0.0.0.0
Source Port	0
Protocol	User defined ▼ 0

The following table describes the labels in this screen

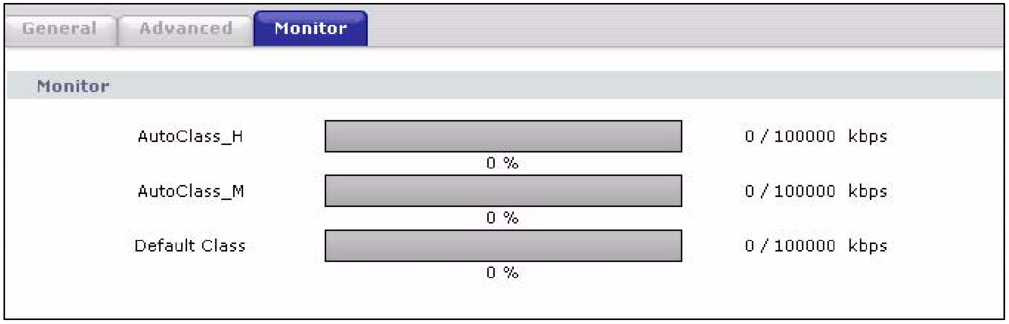
Table 63 Management > Bandwidth MGMT > Advanced: User-defined Service Rule Configuration

LABEL	DESCRIPTION
BW Budget	Select **Maximum Bandwidth** or **Minimum Bandwidth** and specify the maximum or minimum bandwidth allowed for the rule in kilobits per second.
Destination Address	Enter the destination IP address in dotted decimal notation.
Destination Subnet Netmask	Enter the destination subnet mask. This field is N/A if you do not specify a **Destination Address**. Refer to the appendices for more information on IP subnetting.
Destination Port	Enter the port number of the destination. See *Table 58 on page 156* for some common services and port numbers.
Source Address	Enter the source IP address in dotted decimal notation.
Source Subnet Netmask	Enter the destination subnet mask. This field is N/A if you do not specify a **Source Address**. Refer to the appendices for more information on IP subnetting.
Source Port	Enter the port number of the source. See Table 58 on page 156 for some common services and port numbers.
Protocol	Select the protocol (**TCP** or **UDP**) or select **User defined** and enter the protocol (service type) number.
OK	Click **OK** to save your customized settings.
Cancel	Click **Cancel** to exit this screen without saving.

15.10 Bandwidth Management Monitor

Click **Management** > **Bandwidth MGMT** > **Monitor** to open the bandwidth management **Monitor** screen. View the bandwidth usage of the WAN configured bandwidth rules. This is also shown as bandwidth usage over the bandwidth budget for each rule. The gray section of the bar represents the percentage of unused bandwidth and the blue color represents the percentage of bandwidth in use.

Figure 90 Management > Bandwidth MGMT > Monitor



Monitor

AutoClass_H	0 %	0 / 100000 kbps
AutoClass_M	0 %	0 / 100000 kbps
Default Class	0 %	0 / 100000 kbps

16

Remote Management

This chapter provides information on the Remote Management screens.

16.1 Remote Management Overview

Remote management allows you to determine which services/protocols can access which NBG318S interface (if any) from which computers.

When you configure remote management to allow management from the WAN, you still need to configure a firewall rule to allow access. See the firewall chapters for details on configuring firewall rules.

You may manage your NBG318S from a remote location via:

- Internet (WAN only)
- LAN only
- ALL (LAN and WAN)
- Neither (Disable).

When you choose **WAN** or **LAN & WAN**, you still need to configure a firewall rule to allow access.

To disable remote management of a service, select **Disable** in the corresponding **Server Access** field.

You may only have one remote management session running at a time. The NBG318S automatically disconnects a remote management session of lower priority when another remote management session of higher priority starts. The priorities for the different types of remote management sessions are as follows.

1 Telnet

2 HTTP

16.1.1 Remote Management Limitations

Remote management over LAN or WAN will not work when:

1 You have disabled that service in one of the remote management screens.

2 The IP address in the **Secured Client IP Address** field does not match the client IP address. If it does not match, the NBG318S will disconnect the session immediately.

3 There is already another remote management session with an equal or higher priority running. You may only have one remote management session running at one time.

4 There is a firewall rule that blocks it.

16.1.2 Remote Management and NAT

When NAT is enabled:

- Use the NBG318S's WAN IP address when configuring from the WAN.
- Use the NBG318S's LAN IP address when configuring from the LAN.

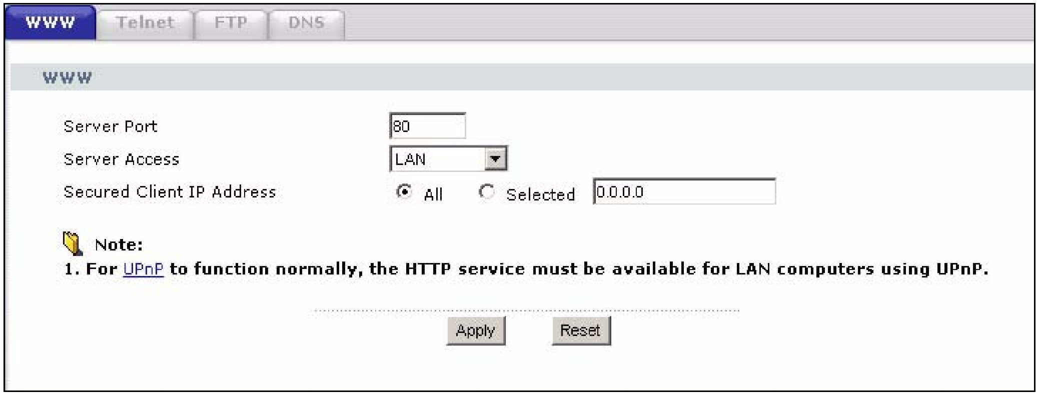
16.1.3 System Timeout

There is a default system management idle timeout of five minutes (three hundred seconds). The NBG318S automatically logs you out if the management session remains idle for longer than this timeout period. The management session does not time out when a statistics screen is polling. You can change the timeout period in the **System** screen

16.2 WWW Screen

To change your NBG318S's World Wide Web settings, click **Management** > **Remote MGMT** to display the **WWW** screen.

Figure 91 Management > Remote MGMT > WWW



WWW

Server Port: 80

Server Access: LAN

Secured Client IP Address: ● All ○ Selected 0.0.0.0

Note:
1. For UPnP to function normally, the HTTP service must be available for LAN computers using UPnP.

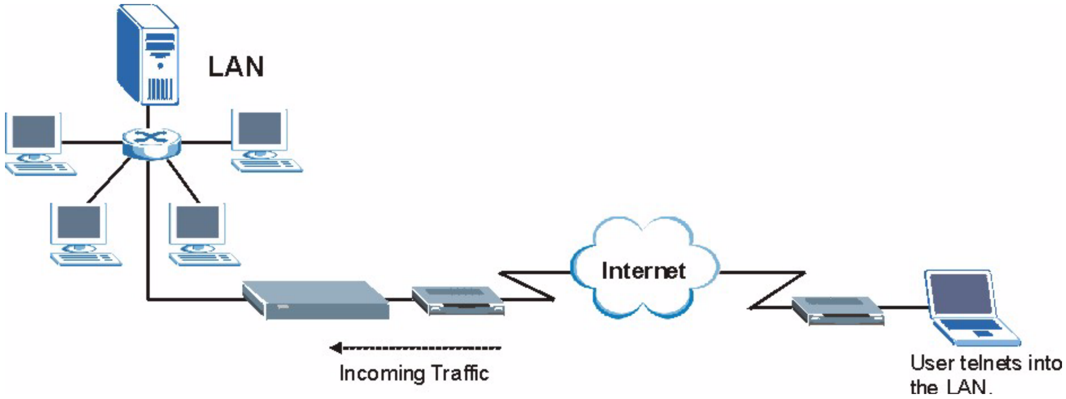
The following table describes the labels in this screen

Table 64 Management > Remote MGMT > WWW

16.3 Telnet

You can configure your NBG318S for remote Telnet access as shown next. The administrator uses Telnet from a computer on a remote network to access the NBG318S.

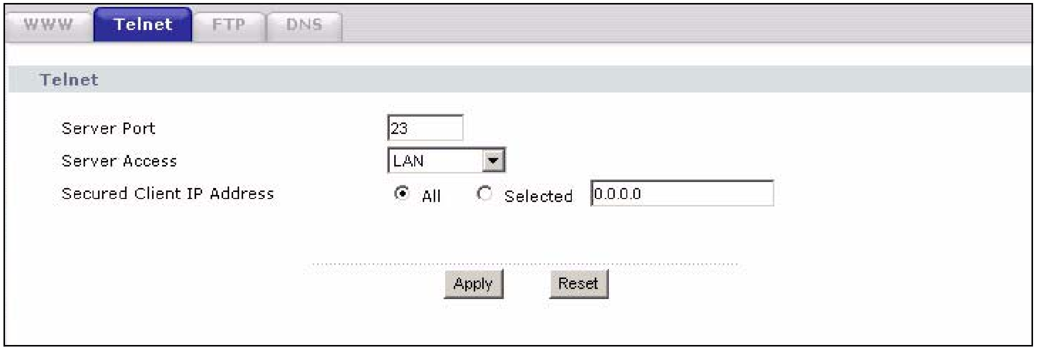
Figure 92 Telnet Configuration on a TCP/IP Network



16.4 Telnet Screen

To change your NBG318S's Telnet settings, click **Management** > **Remote MGMT** > **Telnet**. The following screen displays.

Figure 93 Management > Remote MGMT > Telnet



Telnet

Server Port	23
Server Access	LAN
Secured Client IP Address	● All ○ Selected 0.0.0.0

The following table describes the labels in this screen.

Table 65 Management > Remote MGMT > Telnet

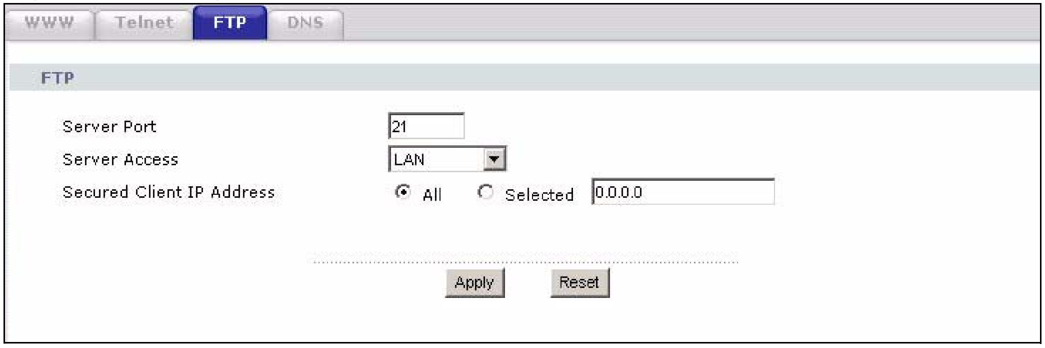
LABEL	DESCRIPTION
Server Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Server Access	Select the interface(s) through which a computer may access the NBG318S using this service.
Secured Client IP Address	A secured client is a "trusted" computer that is allowed to communicate with the NBG318S using this service. Select **All** to allow any computer to access the NBG318S using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the NBG318S using this service.
Apply	Click **Apply** to save your customized settings and exit this screen.
Reset	Click **Reset** to begin configuring this screen afresh.

16.5 FTP Screen

You can upload and download the NBG318S's firmware and configuration files using FTP, please see the chapter on firmware and configuration file maintenance for details. To use this feature, your computer must have an FTP client.

To change your NBG318S's FTP settings, click **Management** > **Remote MGMT** > **FTP**. The screen appears as shown.

Figure 94 Management > Remote MGMT > FTP



Server Port: 21
Server Access: LAN
Secured Client IP Address: ● All ○ Selected 0.0.0.0

The following table describes the labels in this screen.

Table 66 Management > Remote MGMT > FTP

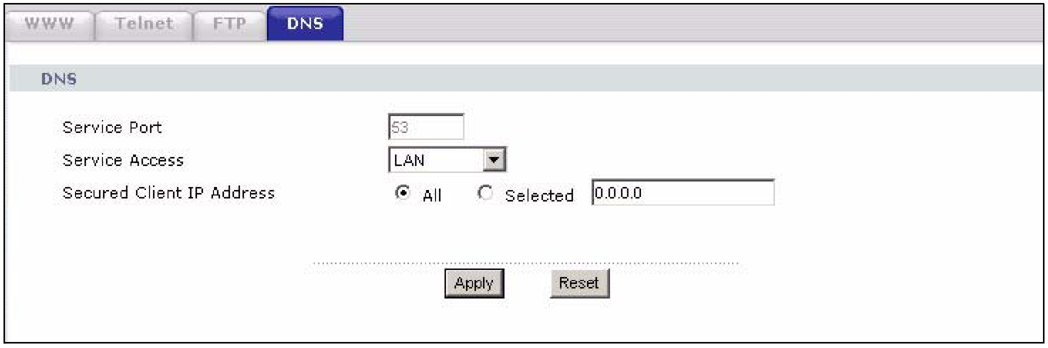
LABEL	DESCRIPTION
Server Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Server Access	Select the interface(s) through which a computer may access the NBG318S using this service.
Secured Client IP Address	A secured client is a "trusted" computer that is allowed to communicate with the NBG318S using this service. Select **All** to allow any computer to access the NBG318S using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the NBG318S using this service.
Apply	Click **Apply** to save your customized settings and exit this screen.
Reset	Click **Reset** to begin configuring this screen afresh.

16.6 DNS Screen

Use DNS (Domain Name System) to map a domain name to its corresponding IP address and vice versa. Refer to the chapter on Wizard Setup for background information.

To change your NBG318S's DNS settings, click **Management** > **Remote MGMT** > **DNS**. The screen appears as shown.

Figure 95 Management > Remote MGMT > DNS



DNS

Service Port 53

Service Access LAN

Secured Client IP Address ● All ○ Selected 0.0.0.0

The following table describes the labels in this screen.

Table 67 Management > Remote MGMT > DNS

LABEL	DESCRIPTION
Server Port	The DNS service port number is 53 and cannot be changed here.
Server Access	Select the interface(s) through which a computer may send DNS queries to the NBG318S.
Secured Client IP Address	A secured client is a “trusted” computer that is allowed to send DNS queries to the NBG318S. Select **All** to allow any computer to send DNS queries to the NBG318S. Choose **Selected** to just allow the computer with the IP address that you specify to send DNS queries to the NBG318S.
Apply	Click **Apply** to save your customized settings and exit this screen.
Reset	Click **Reset** to begin configuring this screen afresh.

17

Universal Plug-and-Play (UPnP)

This chapter introduces the UPnP feature in the web configurator.

17.1 Introducing Universal Plug and Play

Universal Plug and Play (UPnP) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices. A UPnP device can dynamically join a network, obtain an IP address, convey its capabilities and learn about other devices on the network. In turn, a device can leave a network smoothly and automatically when it is no longer in use.

See Section 17.3 on page 172 for configuration instructions.

17.1.1 How do I know if I'm using UPnP?

UPnP hardware is identified as an icon in the Network Connections folder (Windows XP). Each UPnP compatible device installed on your network will appear as a separate icon. Selecting the icon of a UPnP device will allow you to access the information and properties of that device.

17.1.2 NAT Traversal

UPnP NAT traversal automates the process of allowing an application to operate through NAT. UPnP network devices can automatically configure network addressing, announce their presence in the network to other UPnP devices and enable exchange of simple product and service descriptions. NAT traversal allows the following:

- Dynamic port mapping
- Learning public IP addresses
- Assigning lease times to mappings

Windows Messenger is an example of an application that supports NAT traversal and UPnP.

See the NAT chapter for more information on NAT.

17.1.3 Cautions with UPnP

The automated nature of NAT traversal applications in establishing their own services and opening firewall ports may present network security issues. Network information and configuration may also be obtained and modified by users in some network environments.

When a UPnP device joins a network, it announces its presence with a multicast message. For security reasons, the NBG318S allows multicast messages on the LAN only.

All UPnP-enabled devices may communicate freely with each other without additional configuration. Disable UPnP if this is not your intention.

17.2 UPnP and ZyXEL

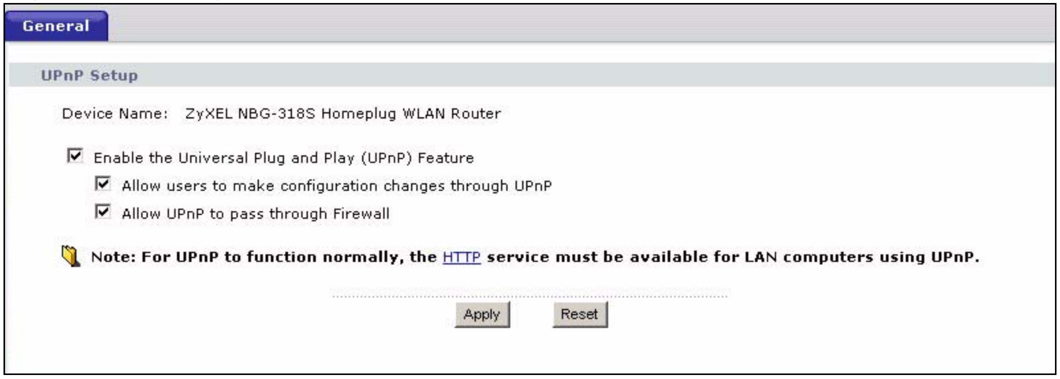
ZyXEL has achieved UPnP certification from the Universal Plug and Play Forum UPnP™ Implementers Corp. (UIC). ZyXEL's UPnP implementation supports Internet Gateway Device (IGD) 1.0.

See the following sections for examples of installing and using UPnP.

17.3 UPnP Screen

Click the **Management** > **UPnP** to display the UPnP screen.

Figure 96 Management > UPnP > General



Device Name: ZyXEL NBG-318S Homeplug WLAN Router

☑ Enable the Universal Plug and Play (UPnP) Feature

☑ Allow users to make configuration changes through UPnP

☑ Allow UPnP to pass through Firewall

Note: For UPnP to function normally, the HTTP service must be available for LAN computers using UPnP.

The following table describes the labels in this screen.

Table 68 Management > UPnP > General

LABEL	DESCRIPTION
Enable the Universal Plug and Play (UPnP) Feature	Select this check box to activate UPnP. Be aware that anyone could use a UPnP application to open the web configurator's login screen without entering the NBG318S's IP address (although you must still enter the password to access the web configurator).
Allow users to make configuration changes through UPnP	Select this check box to allow UPnP-enabled applications to automatically configure the NBG318S so that they can communicate through the NBG318S, for example by using NAT traversal, UPnP applications automatically reserve a NAT forwarding port in order to communicate with another UPnP enabled device; this eliminates the need to manually configure port forwarding for the UPnP enabled application.
Allow UPnP to pass through Firewall	Select this check box to allow traffic from UPnP-enabled applications to bypass the firewall. Clear this check box to have the firewall block all UPnP application packets (for example, MSN packets).

Table 68 Management > UPnP > General

LABEL	DESCRIPTION
Apply	Click **Apply** to save the setting to the NBG318S.
Cancel	Click **Cancel** to return to the previously saved settings.

17.4 Installing UPnP in Windows Example

This section shows how to install UPnP in Windows Me and Windows XP.

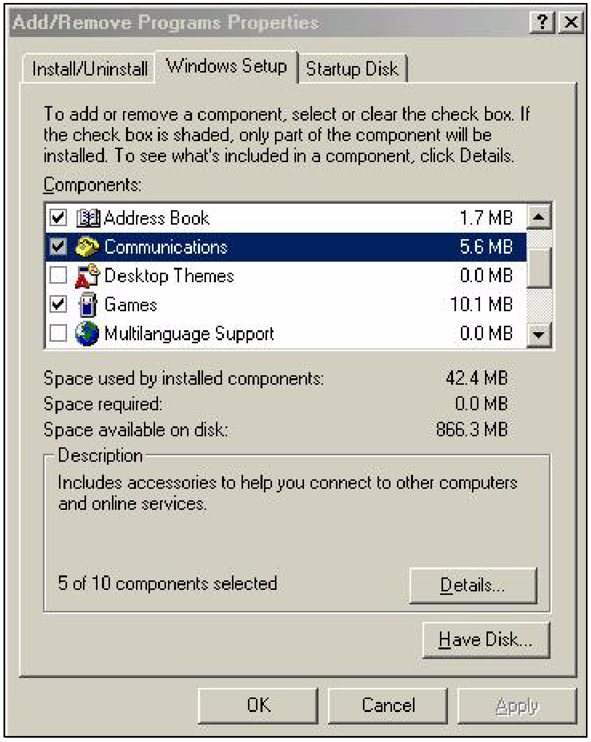
17.4.0.1 Installing UPnP in Windows Me

Follow the steps below to install the UPnP in Windows Me.

1 Click **Start** and **Control Panel**. Double-click **Add/Remove Programs**.

2 Click on the **Windows Setup** tab and select **Communication** in the **Components** selection box. Click **Details**.

Figure 97 Add/Remove Programs: Windows Setup: Communication



Add/Remove Programs Properties

Install/Uninstall | Windows Setup | Startup Disk

To add or remove a component, select or clear the check box. If the check box is shaded, only part of the component will be installed. To see what's included in a component, click Details.

Components:

☑	Address Book	1.7 MB
☑	Communications	5.6 MB
□	Desktop Themes	0.0 MB
☑	Games	10.1 MB
□	Multilanguage Support	0.0 MB

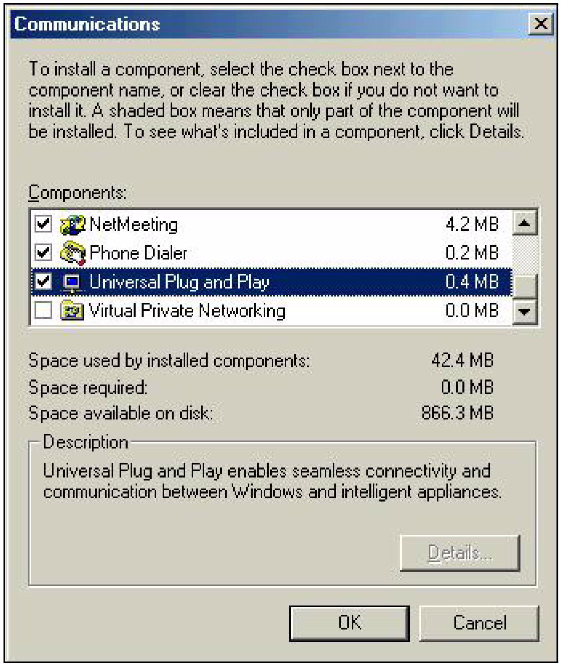
Space used by installed components: 42.4 MB
Space required: 0.0 MB
Space available on disk: 866.3 MB

Description
Includes accessories to help you connect to other computers and online services.

5 of 10 components selected

3 In the **Communications** window, select the **Universal Plug and Play** check box in the **Components** selection box.

Figure 98 Add/Remove Programs: Windows Setup: Communication: Components



To install a component, select the check box next to the component name, or clear the check box if you do not want to install it. A shaded box means that only part of the component will be installed. To see what's included in a component, click Details.

Components:

☑	NetMeeting	4.2 MB
☑	Phone Dialer	0.2 MB
☑	Universal Plug and Play	0.4 MB
□	Virtual Private Networking	0.0 MB

Space used by installed components:	42.4 MB
Space required:	0.0 MB
Space available on disk:	866.3 MB

Description

Universal Plug and Play enables seamless connectivity and communication between Windows and intelligent appliances.

4 Click **OK** to go back to the **Add/Remove Programs Properties** window and click **Next**.

5 Restart the computer when prompted.

Installing UPnP in Windows XP

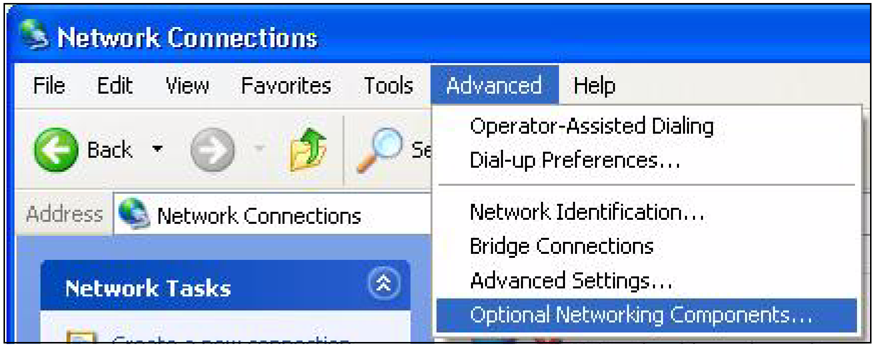
Follow the steps below to install the UPnP in Windows XP.

1 Click **Start** and **Control Panel**.

2 Double-click **Network Connections**.

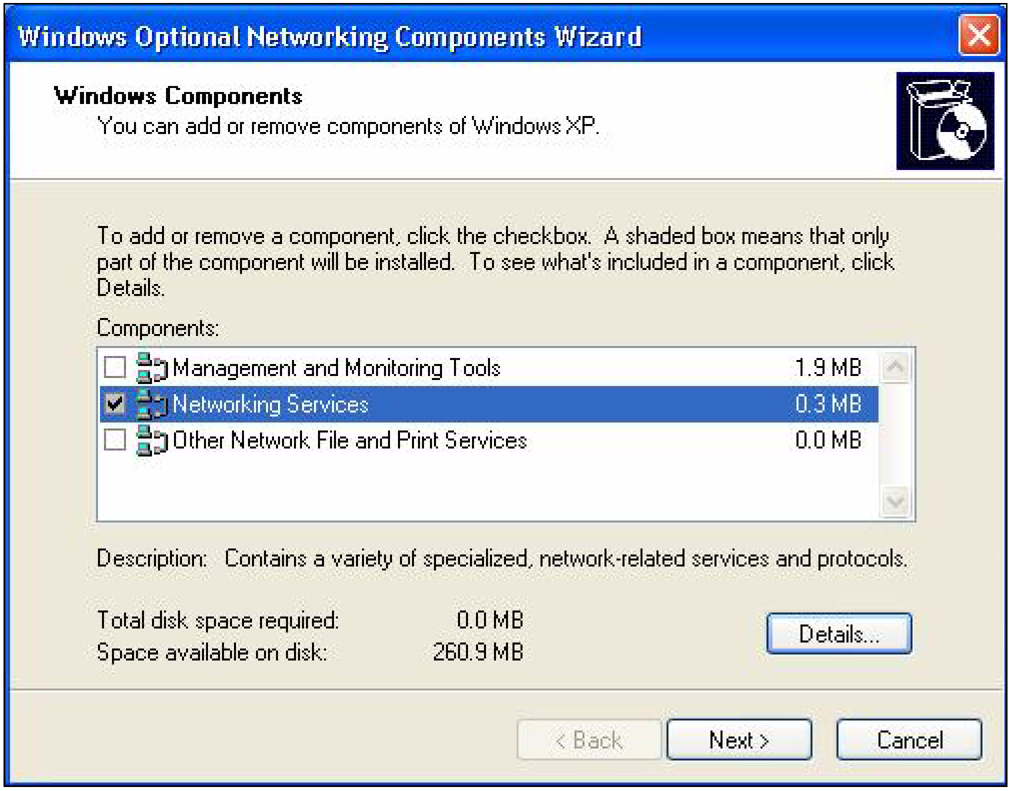
3 In the **Network Connections** window, click **Advanced** in the main menu and select **Optional Networking Components ….**

Figure 99 Network Connections



4 The **Windows Optional Networking Components Wizard** window displays. Select **Networking Service** in the **Components** selection box and click **Details**.

Figure 100 Windows Optional Networking Components Wizard



Windows Optional Networking Components Wizard

Windows Components

You can add or remove components of Windows XP.

To add or remove a component, click the checkbox. A shaded box means that only part of the component will be installed. To see what's included in a component, click Details.

Components:

□	Management and Monitoring Tools	1.9 MB
☑	Networking Services	0.3 MB
□	Other Network File and Print Services	0.0 MB

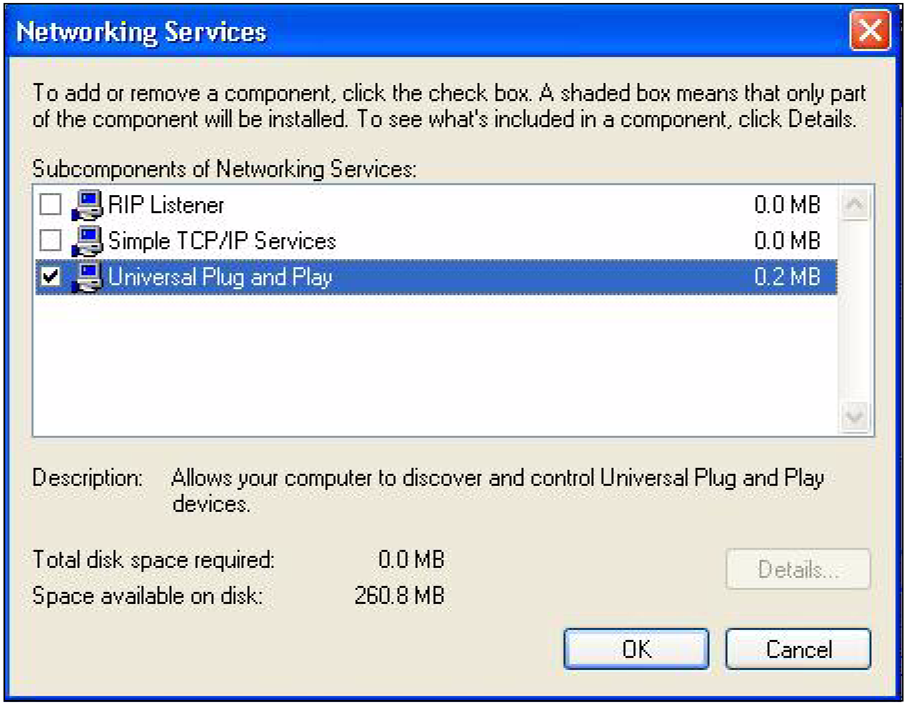
Description: Contains a variety of specialized, network-related services and protocols.

Total disk space required: 0.0 MB

Space available on disk: 260.9 MB

5 In the **Networking Services** window, select the **Universal Plug and Play** check box.

Figure 101 Networking Services



Networking Services

To add or remove a component, click the check box. A shaded box means that only part of the component will be installed. To see what's included in a component, click Details.

Subcomponents of Networking Services:

□	RIP Listener	0.0 MB
□	Simple TCP/IP Services	0.0 MB
☑	Universal Plug and Play	0.2 MB

Description: Allows your computer to discover and control Universal Plug and Play devices.

Total disk space required: 0.0 MB

Space available on disk: 260.8 MB

6 Click **OK** to go back to the **Windows Optional Networking Component Wizard** window and click **Next**.

17.4.0.2 Using UPnP in Windows XP Example

This section shows you how to use the UPnP feature in Windows XP. You must already have UPnP installed in Windows XP and UPnP activated on the NBG318S.

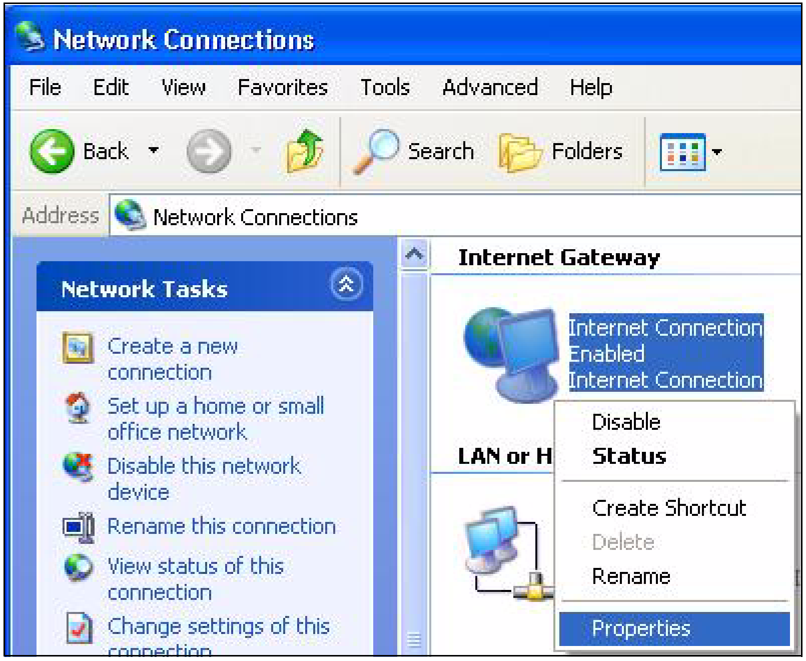
Make sure the computer is connected to a LAN port of the NBG318S. Turn on your computer and the NBG318S.

Auto-discover Your UPnP-enabled Network Device

1 Click **Start** and **Control Panel**. Double-click **Network Connections**. An icon displays under Internet Gateway.

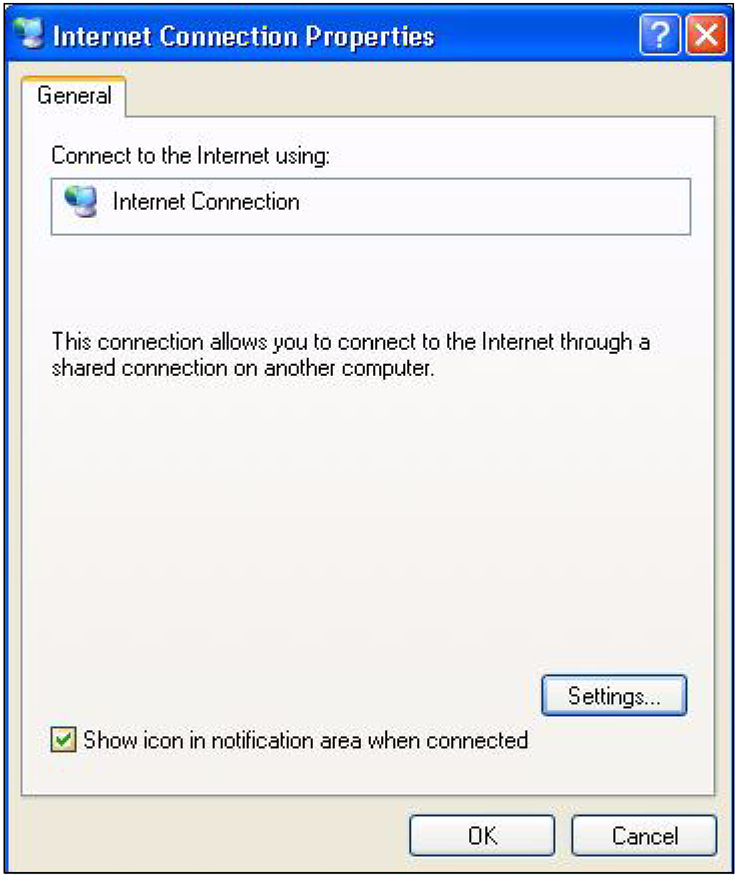
2 Right-click the icon and select **Properties**.

Figure 102 Network Connections



3 In the **Internet Connection Properties** window, click **Settings** to see the port mappings there were automatically created.

Figure 103 Internet Connection Properties



Internet Connection Properties

Connect to the Internet using:

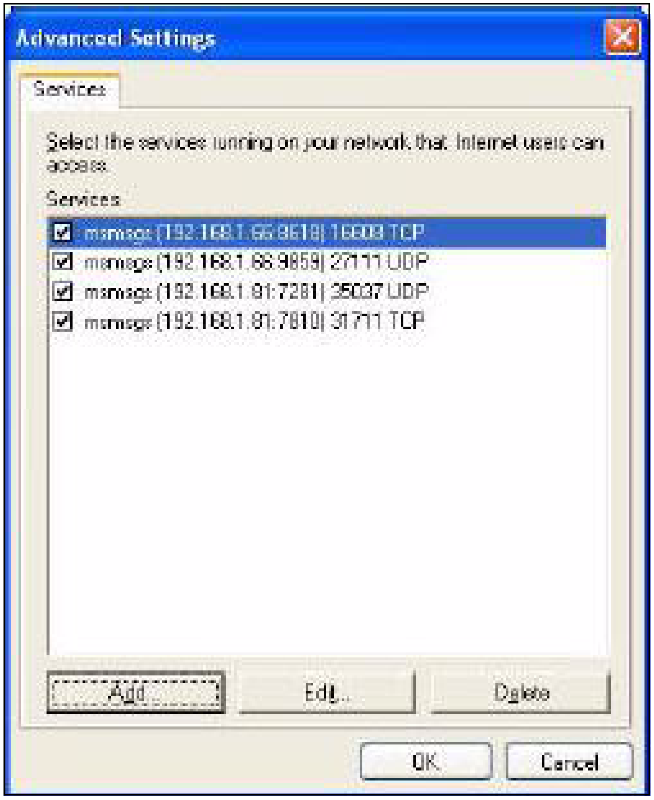
Internet Connection

This connection allows you to connect to the Internet through a shared connection on another computer.

☑ Show icon in notification area when connected

4 You may edit or delete the port mappings or click **Add** to manually add port mappings.

Figure 104 Internet Connection Properties: Advanced Settings



Advanced Settings

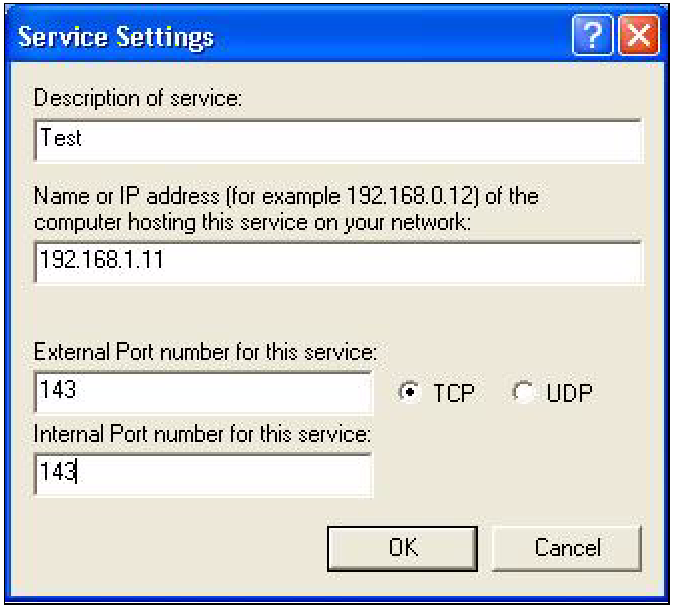
Services

Select the services running on your network that Internet users can access.

Services

☑ msmsgs (192.168.1.66:8618) 16608 TCP
☑ msmsgs (192.168.1.66:9859) 27111 UDP
☑ msmsgs (192.168.1.81:7281) 35037 UDP
☑ msmsgs (192.168.1.81:7810) 31711 TCP

Figure 105 Internet Connection Properties: Advanced Settings: Add



Service Settings

Description of service:
Test

Name or IP address (for example 192.168.0.12) of the computer hosting this service on your network:
192.168.1.11

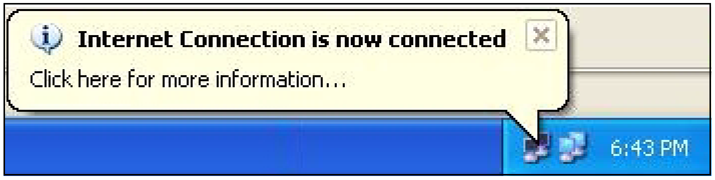
External Port number for this service:
143 ● TCP ○ UDP

Internal Port number for this service:
143

5 When the UPnP-enabled device is disconnected from your computer, all port mappings will be deleted automatically.

6 Select **Show icon in notification area when connected** option and click **OK**. An icon displays in the system tray.

Figure 106 System Tray Icon

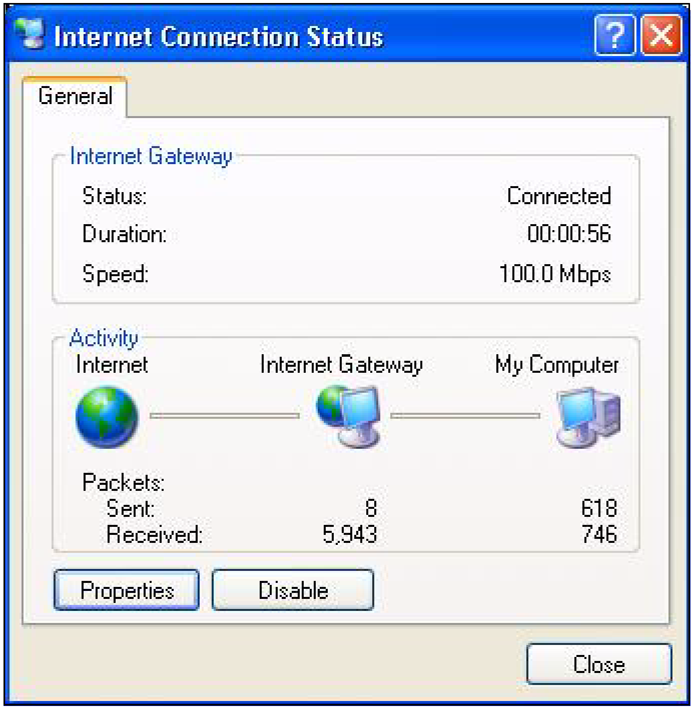


Internet Connection is now connected

Click here for more information...

7 Double-click on the icon to display your current Internet connection status.

Figure 107 Internet Connection Status



Internet Connection Status

Internet Gateway

Status: Connected

Duration: 00:00:56

Speed: 100.0 Mbps

Activity

	Internet	Internet Gateway	My Computer
Packets:			
Sent:		8	618
Received:		5,943	746

Web Configurator Easy Access

With UPnP, you can access the web-based configurator on the NBG318S without finding out the IP address of the NBG318S first. This comes helpful if you do not know the IP address of the NBG318S.

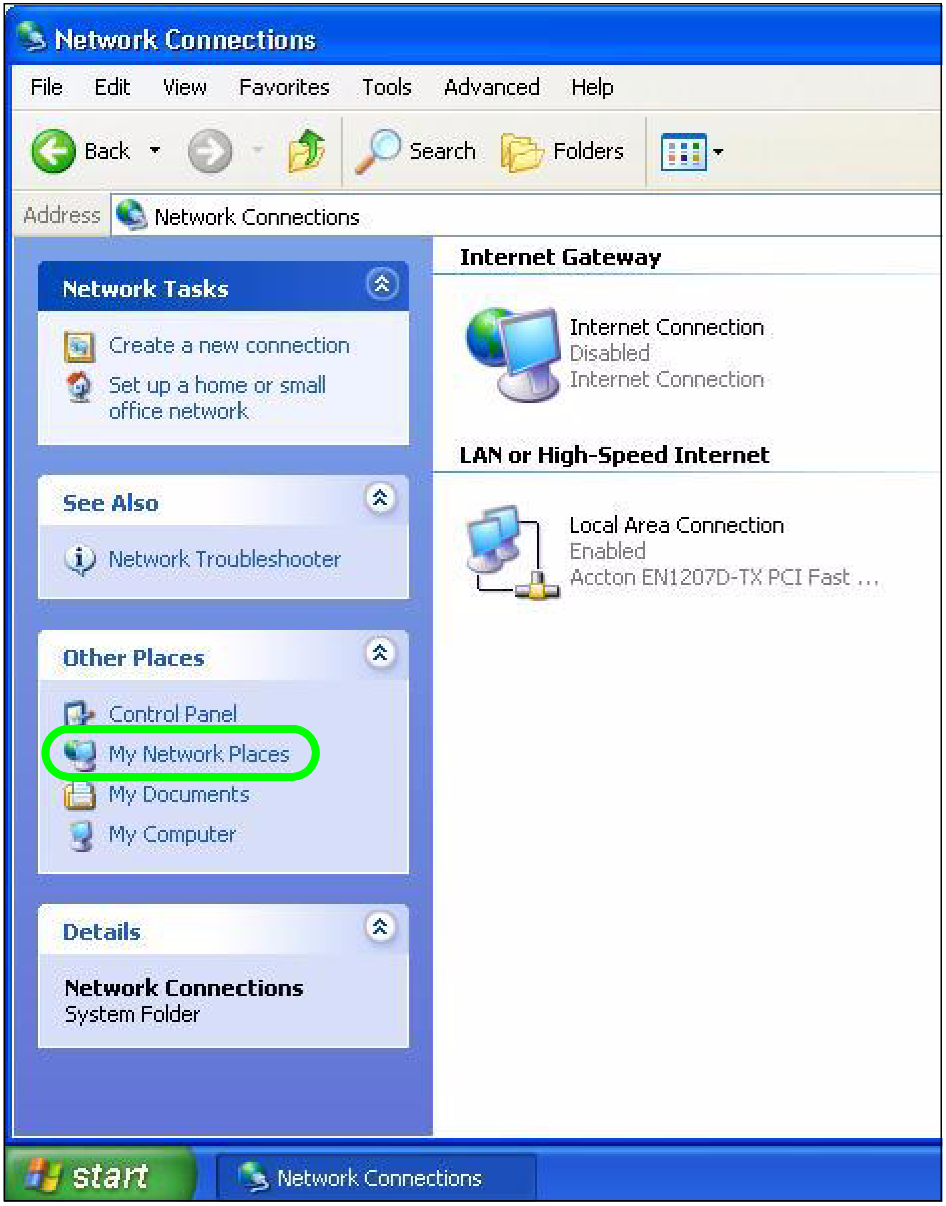
Follow the steps below to access the web configurator.

1 Click **Start** and then **Control Panel**.

2 Double-click **Network Connections**.

3 Select **My Network Places** under **Other Places**.

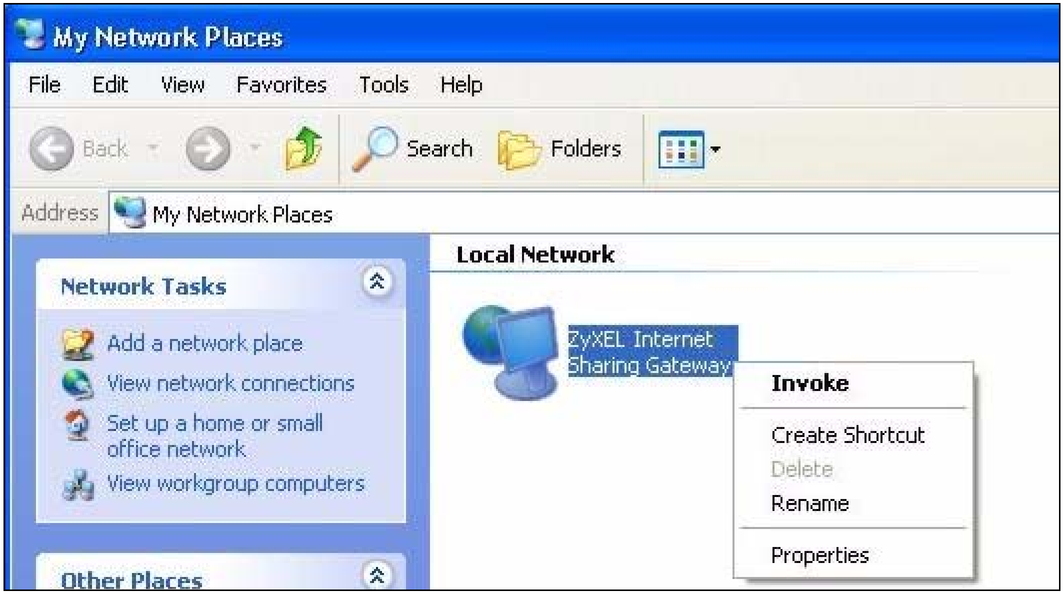
Figure 108 Network Connections



4 An icon with the description for each UPnP-enabled device displays under **Local Network**.

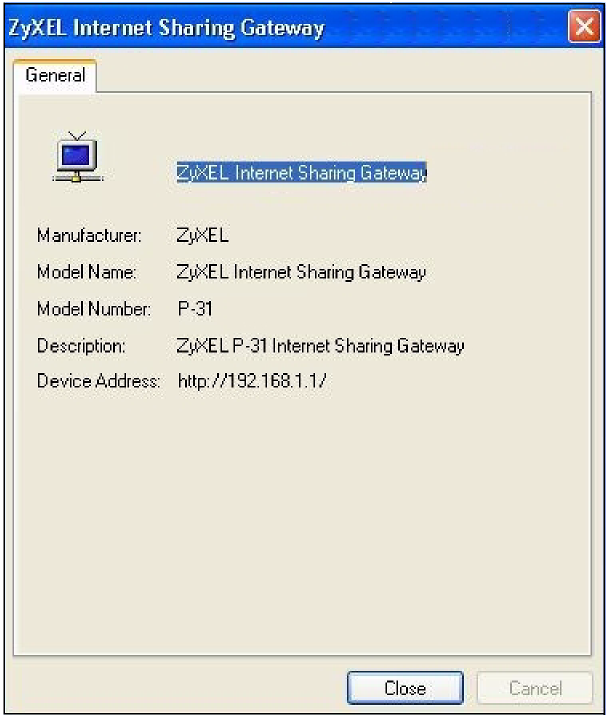
5 Right-click on the icon for your NBG318S and select **Invoke**. The web configurator login screen displays.

Figure 109 Network Connections: My Network Places



6 Right-click on the icon for your NBG318S and select **Properties**. A properties window displays with basic information about the NBG318S.

Figure 110 Network Connections: My Network Places: Properties: Example



ZyXEL Internet Sharing Gateway

Manufacturer: ZyXEL

Model Name: ZyXEL Internet Sharing Gateway

Model Number: P-31

Description: ZyXEL P-31 Internet Sharing Gateway

Device Address: http://192.168.1.1/

PART V
Maintenance and Troubleshooting

18

System

This chapter provides information on the **System** screens.

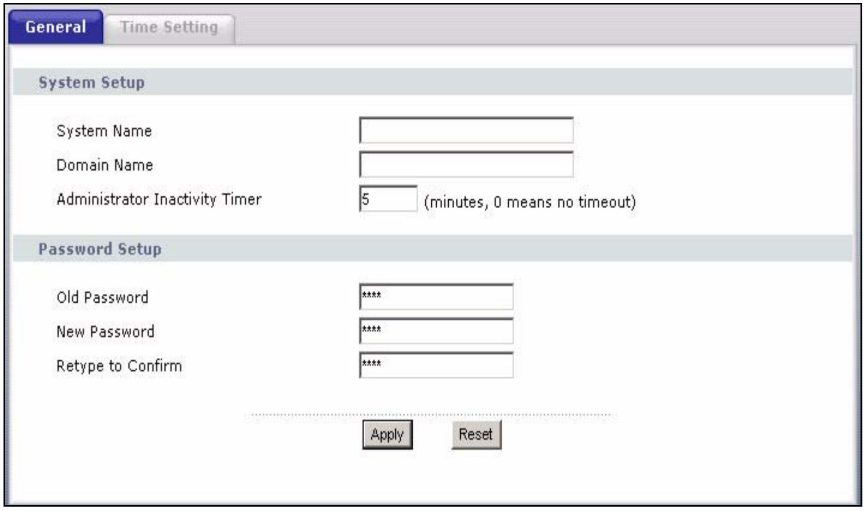
18.1 System Overview

See the chapter about wizard setup for more information on the next few screens.

18.2 System General Screen

Click **Maintenance** > **System**. The following screen displays.

Figure 111 Maintenance > System > General



System Setup

System Name	
Domain Name	
Administrator Inactivity Timer	5 (minutes, 0 means no timeout)

Password Setup

Old Password	****
New Password	****
Retype to Confirm	****

The following table describes the labels in this screen.

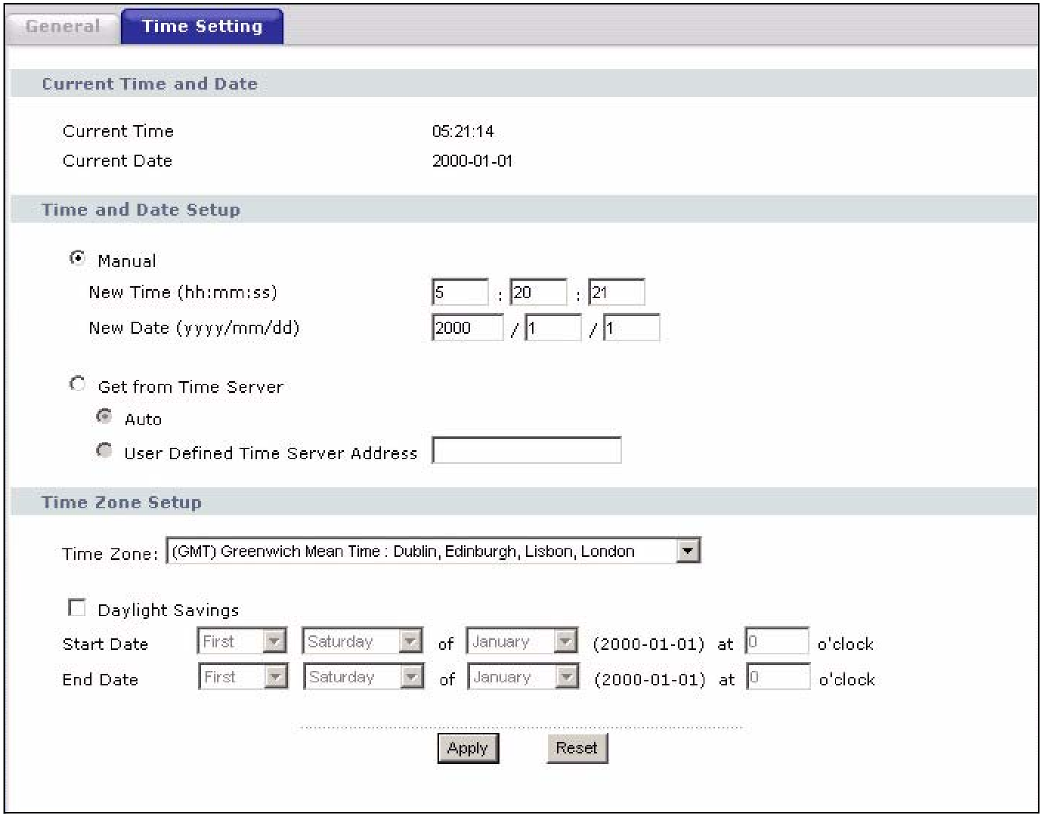
Table 69 Maintenance > System > General

LABEL	DESCRIPTION
System Name	System Name is a unique name to identify the NBG318S in an Ethernet network. It is recommended you enter your computer's "Computer name" in this field (see the chapter about wizard setup for how to find your computer's name). This name can be up to 30 alphanumeric characters long. Spaces are not allowed, but dashes "-" and underscores "_" are accepted.
Domain Name	Enter the domain name (if you know it) here. If you leave this field blank, the ISP may assign a domain name via DHCP. The domain name entered by you is given priority over the ISP assigned domain name.
Administrator Inactivity Timer	Type how many minutes a management session can be left idle before the session times out. The default is 5 minutes. After it times out you have to log in with your password again. Very long idle timeouts may have security risks. A value of "0" means a management session never times out, no matter how long it has been left idle (not recommended).
Password Setup	Change your NBG318S's password (recommended) using the fields as shown.
Old Password	Type the default password or the existing password you use to access the system in this field.
New Password	Type your new system password (up to 30 characters). Note that as you type a password, the screen displays an asterisk (*) for each character you type.
Retype to Confirm	Type the new password again in this field.
Apply	Click **Apply** to save your changes back to the NBG318S.
Reset	Click **Reset** to begin configuring this screen afresh.

18.3 Time Setting Screen

To change your NBG318S's time and date, click **Maintenance** > **System** > **Time Setting**. The screen appears as shown. Use this screen to configure the NBG318S's time based on your local time zone.

Figure 112 Maintenance > System > Time Setting



Current Time and Date

Current Time 05:21:14

Current Date 2000-01-01

Time and Date Setup

● Manual

New Time (hh:mm:ss) 5 : 20 : 21

New Date (yyyy/mm/dd) 2000 / 1 / 1

○ Get from Time Server

● Auto

○ User Defined Time Server Address

Time Zone Setup

Time Zone: (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London

□ Daylight Savings

Start Date First Saturday of January (2000-01-01) at 0 o'clock

End Date First Saturday of January (2000-01-01) at 0 o'clock

The following table describes the labels in this screen.

Table 70 Maintenance > System > Time Setting

LABEL	DESCRIPTION
Current Time and Date	
Current Time	This field displays the time of your NBG318S. Each time you reload this page, the NBG318S synchronizes the time with the time server.
Current Date	This field displays the date of your NBG318S. Each time you reload this page, the NBG318S synchronizes the date with the time server.
Time and Date Setup	
Manual	Select this radio button to enter the time and date manually. If you configure a new time and date, Time Zone and Daylight Saving at the same time, the new time and date you entered has priority and the Time Zone and Daylight Saving settings do not affect it.
New Time (hh:mm:ss)	This field displays the last updated time from the time server or the last time configured manually. When you set **Time and Date Setup** to **Manual**, enter the new time in this field and then click **Apply**.
New Date (yyyy/mm/dd)	This field displays the last updated date from the time server or the last date configured manually. When you set **Time and Date Setup** to **Manual**, enter the new date in this field and then click **Apply**.

Table 70 Maintenance > System > Time Setting

LABEL	DESCRIPTION
Get from Time Server	Select this radio button to have the NBG318S get the time and date from the time server you specified below.
Auto	Select **Auto** to have the NBG318S automatically search for an available time server and synchronize the date and time with the time server after you click **Apply**.
User Defined Time Server Address	Select **User Defined Time Server Address** and enter the IP address or URL (up to 20 extended ASCII characters in length) of your time server. Check with your ISP/network administrator if you are unsure of this information.
Time Zone Setup	
Time Zone	Choose the time zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).
Daylight Savings	Daylight saving is a period from late spring to early fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening. Select this option if you use Daylight Saving Time.
Start Date	Configure the day and time when Daylight Saving Time starts if you selected **Daylight Savings**. The **o'clock** field uses the 24 hour format. Here are a couple of examples: Daylight Saving Time starts in most parts of the United States on the first Sunday of April. Each time zone in the United States starts using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **First**, **Sunday**, **April** and type 2 in the **o'clock** field. Daylight Saving Time starts in the European Union on the last Sunday of March. All of the time zones in the European Union start using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **Last**, **Sunday**, **March**. The time you type in the **o'clock** field depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).
End Date	Configure the day and time when Daylight Saving Time ends if you selected **Daylight Savings**. The **o'clock** field uses the 24 hour format. Here are a couple of examples: Daylight Saving Time ends in the United States on the last Sunday of October. Each time zone in the United States stops using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **Last**, **Sunday**, **October** and type 2 in the **o'clock** field. Daylight Saving Time ends in the European Union on the last Sunday of October. All of the time zones in the European Union stop using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **Last**, **Sunday**, **October**. The time you type in the **o'clock** field depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).
Apply	Click **Apply** to save your changes back to the NBG318S.
Reset	Click **Reset** to begin configuring this screen afresh.

19

Logs

This chapter contains information about configuring general log settings and viewing the NBG318S's logs. Refer to the appendices for example log message explanations.

19.1 View Log

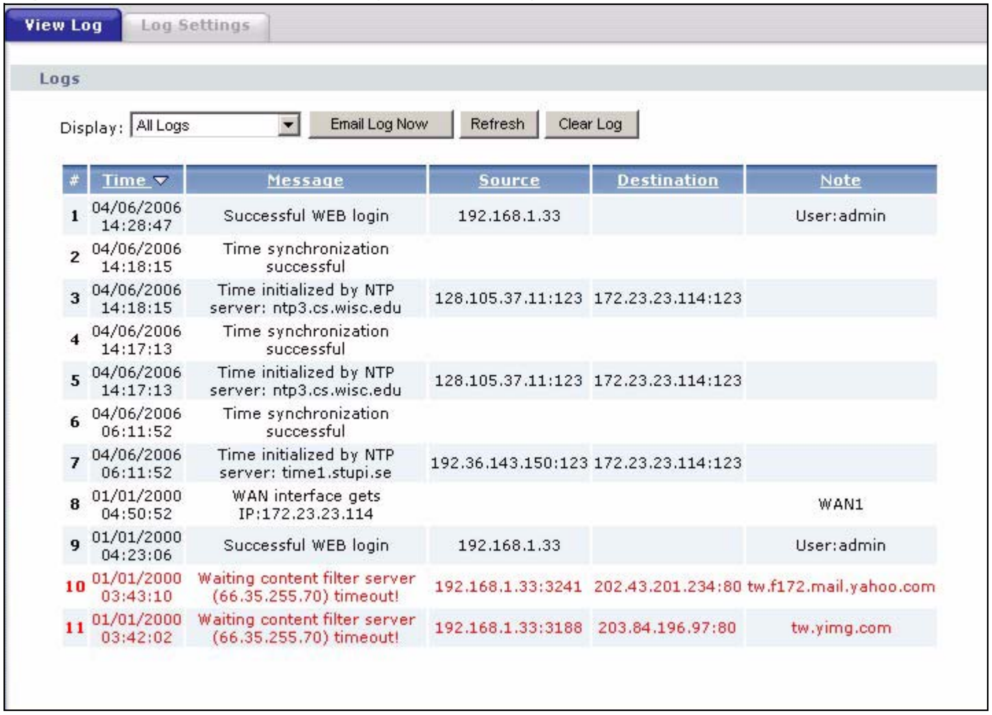
The web configurator allows you to look at all of the NBG318S's logs in one location.

Click **Maintenance** > **Logs** to open the **View Log** screen.

Use the **View Log** screen to see the logs for the categories that you selected in the **Log Settings** screen (see Section 19.2 on page 190). Options include logs about system maintenance, system errors, access control, allowed or blocked web sites, blocked web features (such as ActiveX controls, Java and cookies), attacks (such as DoS) and IPSec.

Log entries in red indicate system error logs. The log wraps around and deletes the old entries after it fills. Click a column heading to sort the entries. A triangle indicates ascending or descending sort order.

Figure 113 Maintenance > Logs > View Log



Display: All Logs

#	Time ▽	Message	Source	Destination	Note
1	04/06/2006 14:28:47	Successful WEB login	192.168.1.33		User:admin
2	04/06/2006 14:18:15	Time synchronization successful			
3	04/06/2006 14:18:15	Time initialized by NTP server: ntp3.cs.wisc.edu	128.105.37.11:123	172.23.23.114:123	
4	04/06/2006 14:17:13	Time synchronization successful			
5	04/06/2006 14:17:13	Time initialized by NTP server: ntp3.cs.wisc.edu	128.105.37.11:123	172.23.23.114:123	
6	04/06/2006 06:11:52	Time synchronization successful			
7	04/06/2006 06:11:52	Time initialized by NTP server: time1.stupi.se	192.36.143.150:123	172.23.23.114:123	
8	01/01/2000 04:50:52	WAN interface gets IP:172.23.23.114			WAN1
9	01/01/2000 04:23:06	Successful WEB login	192.168.1.33		User:admin
10	01/01/2000 03:43:10	Waiting content filter server (66.35.255.70) timeout!	192.168.1.33:3241	202.43.201.234:80	tw.f172.mail.yahoo.com
11	01/01/2000 03:42:02	Waiting content filter server (66.35.255.70) timeout!	192.168.1.33:3188	203.84.196.97:80	tw.yimg.com

The following table describes the labels in this screen.

Table 71 Maintenance > Logs > View Log

LABEL	DESCRIPTION
Display	The categories that you select in the **Log Settings** page (see Section 19.2 on page 190) display in the drop-down list box. Select a category of logs to view; select **All Logs** to view logs from all of the log categories that you selected in the **Log Settings** page.
Email Log Now	Click **Email Log Now** to send the log screen to the e-mail address specified in the **Log Settings** page (make sure that you have first filled in the **Address Info** fields in **Log Settings**).
Refresh	Click **Refresh** to renew the log screen.
Clear Log	Click **Clear Log** to delete all the logs.
Time	This field displays the time the log was recorded. See the chapter on system maintenance and information to configure the NBG318S's time and date.
Message	This field states the reason for the log.
Source	This field lists the source IP address and the port number of the incoming packet.
Destination	This field lists the destination IP address and the port number of the incoming packet.
Note	This field displays additional information about the log entry.

19.2 Log Settings

You can configure the NBG318S's general log settings in one location.

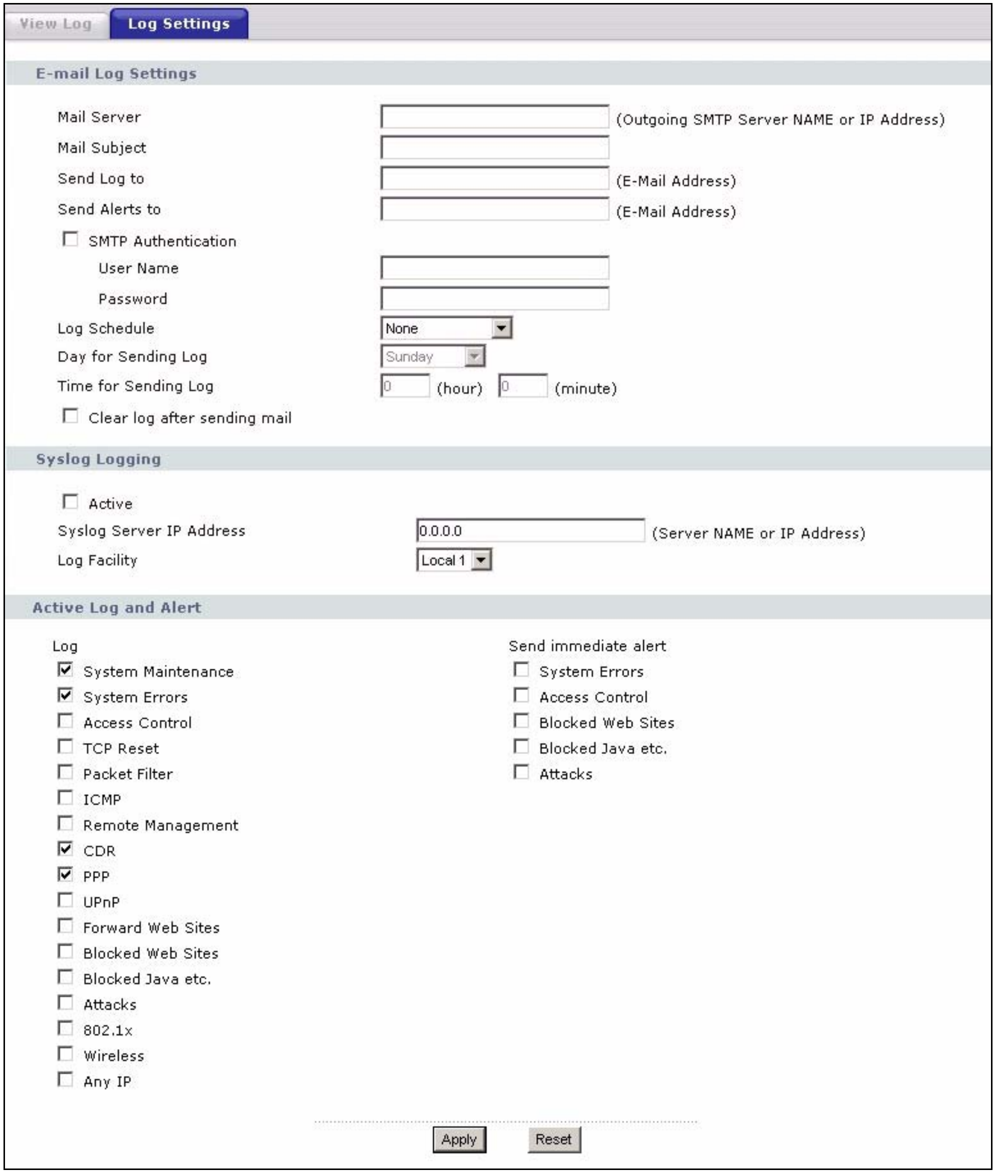
Click **Maintenance** > **Logs** > **Log Settings** to open the **Log Settings** screen.

Use the **Log Settings** screen to configure to where the NBG318S is to send logs; the schedule for when the NBG318S is to send the logs and which logs and/or immediate alerts the NBG318S to send.

An alert is a type of log that warrants more serious attention. They include system errors, attacks (access control) and attempted access to blocked web sites or web sites with restricted web features such as cookies, active X and so on. Some categories such as **System Errors** consist of both logs and alerts. You may differentiate them by their color in the **View Log** screen. Alerts display in red and logs display in black.

Alerts are e-mailed as soon as they happen. Logs may be e-mailed as soon as the log is full (see **Log Schedule**). Selecting many alert and/or log categories (especially **Access Control**) may result in many e-mails being sent.

Figure 114 Maintenance > Logs > Log Settings



E-mail Log Settings

Mail Server (Outgoing SMTP Server NAME or IP Address)

Mail Subject

Send Log to (E-Mail Address)

Send Alerts to (E-Mail Address)

□ SMTP Authentication

User Name

Password

Log Schedule: None

Day for Sending Log: Sunday

Time for Sending Log: 0 (hour) 0 (minute)

□ Clear log after sending mail

Syslog Logging

□ Active

Syslog Server IP Address: 0.0.0.0 (Server NAME or IP Address)

Log Facility: Local 1

Active Log and Alert

Log
- ☑ System Maintenance
- ☑ System Errors
- □ Access Control
- □ TCP Reset
- □ Packet Filter
- □ ICMP
- □ Remote Management
- ☑ CDR
- ☑ PPP
- □ UPnP
- □ Forward Web Sites
- □ Blocked Web Sites
- □ Blocked Java etc.
- □ Attacks
- □ 802.1x
- □ Wireless
- □ Any IP

Send immediate alert
- □ System Errors
- □ Access Control
- □ Blocked Web Sites
- □ Blocked Java etc.
- □ Attacks

The following table describes the labels in this screen.

Table 72 Maintenance > Logs > Log Settings

LABEL	DESCRIPTION
E-mail Log Settings	
Mail Server	Enter the server name or the IP address of the mail server for the e-mail addresses specified below. If this field is left blank, logs and alert messages will not be sent via E-mail.
Mail Subject	Type a title that you want to be in the subject line of the log e-mail message that the NBG318S sends. Not all NBG318S models have this field.
Send Log To	The NBG318S sends logs to the e-mail address specified in this field. If this field is left blank, the NBG318S does not send logs via e-mail.

Table 72 Maintenance > Logs > Log Settings

LABEL	DESCRIPTION
Send Alerts To	Alerts are real-time notifications that are sent as soon as an event, such as a DoS attack, system error, or forbidden web access attempt occurs. Enter the E-mail address where the alert messages will be sent. Alerts include system errors, attacks and attempted access to blocked web sites. If this field is left blank, alert messages will not be sent via E-mail.
SMTP Authentication	SMTP (Simple Mail Transfer Protocol) is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another. Select the check box to activate SMTP authentication. If mail server authentication is needed but this feature is disabled, you will not receive the e-mail logs.
User Name	Enter the user name (up to 31 characters) (usually the user name of a mail account).
Password	Enter the password associated with the user name above.
Log Schedule	This drop-down menu is used to configure the frequency of log messages being sent as E-mail: • Daily • Weekly • Hourly • When Log is Full • None. If you select **Weekly** or **Daily**, specify a time of day when the E-mail should be sent. If you select **Weekly**, then also specify which day of the week the E-mail should be sent. If you select **When Log is Full**, an alert is sent when the log fills up. If you select **None**, no log messages are sent.
Day for Sending Log	Use the drop down list box to select which day of the week to send the logs.
Time for Sending Log	Enter the time of the day in 24-hour format (for example 23:00 equals 11:00 pm) to send the logs.
Clear log after sending mail	Select the checkbox to delete all the logs after the NBG318S sends an E-mail of the logs.
Syslog Logging	The NBG318S sends a log to an external syslog server.
Active	Click **Active** to enable syslog logging.
Syslog Server IP Address	Enter the server name or IP address of the syslog server that will log the selected categories of logs.
Log Facility	Select a location from the drop down list box. The log facility allows you to log the messages to different files in the syslog server. Refer to the syslog server manual for more information.
Active Log and Alert	
Log	Select the categories of logs that you want to record.
Send Immediate Alert	Select log categories for which you want the NBG318S to send E-mail alerts immediately.
Apply	Click **Apply** to save your changes.
Reset	Click **Reset** to begin configuring this screen afresh.

19.3 Log Descriptions

This section provides descriptions of example log messages.

Table 73 System Maintenance Logs

LOG MESSAGE	DESCRIPTION
`Time calibration is successful`	The router has adjusted its time based on information from the time server.
`Time calibration failed`	The router failed to get information from the time server.
`WAN interface gets IP:%s`	A WAN interface got a new IP address from the DHCP, PPPoE, PPTP or dial-up server.
`DHCP client IP expired`	A DHCP client's IP address has expired.
`DHCP server assigns%s`	The DHCP server assigned an IP address to a client.
`Successful WEB login`	Someone has logged on to the router's web configurator interface.
`WEB login failed`	Someone has failed to log on to the router's web configurator interface.
`Successful TELNET login`	Someone has logged on to the router via telnet.
`TELNET login failed`	Someone has failed to log on to the router via telnet.
`Successful FTP login`	Someone has logged on to the router via ftp.
`FTP login failed`	Someone has failed to log on to the router via ftp.
`NAT Session Table is Full!`	The maximum number of NAT session table entries has been exceeded and the table is full.
`Starting Connectivity Monitor`	Starting Connectivity Monitor.
`Time initialized by Daytime Server`	The router got the time and date from the Daytime server.
`Time initialized by Time server`	The router got the time and date from the time server.
`Time initialized by NTP server`	The router got the time and date from the NTP server.
`Connect to Daytime server fail`	The router was not able to connect to the Daytime server.
`Connect to Time server fail`	The router was not able to connect to the Time server.
`Connect to NTP server fail`	The router was not able to connect to the NTP server.
`Too large ICMP packet has been dropped`	The router dropped an ICMP packet that was too large.
`Configuration Change: PC = 0x%x, Task ID = 0x%x`	The router is saving configuration changes.
`Successful SSH login`	Someone has logged on to the router’s SSH server.
`SSH login failed`	Someone has failed to log on to the router’s SSH server.
`Successful HTTPS login`	Someone has logged on to the router's web configurator interface using HTTPS protocol.
`HTTPS login failed`	Someone has failed to log on to the router's web configurator interface using HTTPS protocol.

Table 74 System Error Logs

LOG MESSAGE	DESCRIPTION
`%s exceeds the max. number of session per host!`	This attempt to create a NAT session exceeds the maximum number of NAT session table entries allowed to be created per host.
`setNetBIOSFilter: calloc error`	The router failed to allocate memory for the NetBIOS filter settings.
`readNetBIOSFilter: calloc error`	The router failed to allocate memory for the NetBIOS filter settings.
`WAN connection is down.`	A WAN connection is down. You cannot access the network through this interface.

Table 75 Access Control Logs

LOG MESSAGE	DESCRIPTION
`Firewall default policy: [TCP | UDP | IGMP | ESP | GRE | OSPF] <Packet Direction>`	Attempted TCP/UDP/IGMP/ESP/GRE/OSPF access matched the default policy and was blocked or forwarded according to the default policy’s setting.
`Firewall rule [NOT] match:[TCP | UDP | IGMP | ESP | GRE | OSPF] <Packet Direction>, <rule:%d>`	Attempted TCP/UDP/IGMP/ESP/GRE/OSPF access matched (or did not match) a configured firewall rule (denoted by its number) and was blocked or forwarded according to the rule.
`Triangle route packet forwarded: [TCP | UDP | IGMP | ESP | GRE | OSPF]`	The firewall allowed a triangle route session to pass through.
`Packet without a NAT table entry blocked: [TCP | UDP | IGMP | ESP | GRE | OSPF]`	The router blocked a packet that didn't have a corresponding NAT table entry.
`Router sent blocked web site message: TCP`	The router sent a message to notify a user that the router blocked access to a web site that the user requested.

Table 76 TCP Reset Logs

LOG MESSAGE	DESCRIPTION
`Under SYN flood attack, sent TCP RST`	The router sent a TCP reset packet when a host was under a SYN flood attack (the TCP incomplete count is per destination host.)
`Exceed TCP MAX incomplete, sent TCP RST`	The router sent a TCP reset packet when the number of TCP incomplete connections exceeded the user configured threshold. (the TCP incomplete count is per destination host.) Note: Refer to **TCP Maximum Incomplete** in the **Firewall Attack Alerts** screen.
`Peer TCP state out of order, sent TCP RST`	The router sent a TCP reset packet when a TCP connection state was out of order.Note: The firewall refers to RFC793 Figure 6 to check the TCP state.

Table 76 TCP Reset Logs (continued)

LOG MESSAGE	DESCRIPTION
`Firewall session time out, sent TCP RST`	The router sent a TCP reset packet when a dynamic firewall session timed out. The default timeout values are as follows: ICMP idle timeout: 3 minutes UDP idle timeout: 3 minutes TCP connection (three way handshaking) timeout: 270 seconds TCP FIN-wait timeout: 2 MSL (Maximum Segment Lifetime set in the TCP header). TCP idle (established) timeout (s): 150 minutes TCP reset timeout: 10 seconds
`Exceed MAX incomplete, sent TCP RST`	The router sent a TCP reset packet when the number of incomplete connections (TCP and UDP) exceeded the user-configured threshold. (Incomplete count is for all TCP and UDP connections through the firewall.)Note: When the number of incomplete connections (TCP + UDP) > “Maximum Incomplete High”, the router sends TCP RST packets for TCP connections and destroys TOS (firewall dynamic sessions) until incomplete connections < “Maximum Incomplete Low”.
`Access block, sent TCP RST`	The router sends a TCP RST packet and generates this log if you turn on the firewall TCP reset mechanism (via CI command: "sys firewall tcprst").

Table 77 Packet Filter Logs

LOG MESSAGE	DESCRIPTION
`[TCP | UDP | ICMP | IGMP | Generic] packet filter matched (set:%d, rule:%d)`	Attempted access matched a configured filter rule (denoted by its set and rule number) and was blocked or forwarded according to the rule.

Table 78 ICMP Logs

LOG MESSAGE	DESCRIPTION
`Firewall default policy: ICMP <Packet Direction>, <type:%d>, <code:%d>`	ICMP access matched the default policy and was blocked or forwarded according to the user's setting. For type and code details, see Table 87 on page 200.
`Firewall rule [NOT] match: ICMP <Packet Direction>, <rule:%d>, <type:%d>, <code:%d>`	ICMP access matched (or didn’t match) a firewall rule (denoted by its number) and was blocked or forwarded according to the rule. For type and code details, see Table 87 on page 200.
`Triangle route packet forwarded: ICMP`	The firewall allowed a triangle route session to pass through.
`Packet without a NAT table entry blocked: ICMP`	The router blocked a packet that didn’t have a corresponding NAT table entry.
`Unsupported/out-of-order ICMP: ICMP`	The firewall does not support this kind of ICMP packets or the ICMP packets are out of order.
`Router reply ICMP packet: ICMP`	The router sent an ICMP reply packet to the sender.

Table 79 CDR Logs

LOG MESSAGE	DESCRIPTION
`board%d line%d channel%d, call%d,%s C01 Outgoing Call dev=%x ch=%x%s`	The router received the setup requirements for a call. “call” is the reference (count) number of the call. “dev” is the device type (3 is for dial-up, 6 is for PPPoE, 10 is for PPTP). "channel" or “ch” is the call channel ID.For example,"board 0 line 0 channel 0, call 3, C01 Outgoing Call dev=6 ch=0 "Means the router has dialed to the PPPoE server 3 times.
`board%d line%d channel%d, call%d,%s C02 OutCall Connected%d%s`	The PPPoE, PPTP or dial-up call is connected.
`board%d line%d channel%d, call%d,%s C02 Call Terminated`	The PPPoE, PPTP or dial-up call was disconnected.

Table 80 PPP Logs

LOG MESSAGE	DESCRIPTION
`ppp:LCP Starting`	The PPP connection’s Link Control Protocol stage has started.
`ppp:LCP Opening`	The PPP connection’s Link Control Protocol stage is opening.
`ppp:CHAP Opening`	The PPP connection’s Challenge Handshake Authentication Protocol stage is opening.
`ppp:IPCP Starting`	The PPP connection’s Internet Protocol Control Protocol stage is starting.
`ppp:IPCP Opening`	The PPP connection’s Internet Protocol Control Protocol stage is opening.
`ppp:LCP Closing`	The PPP connection’s Link Control Protocol stage is closing.
`ppp:IPCP Closing`	The PPP connection’s Internet Protocol Control Protocol stage is closing.

Table 81 UPnP Logs

LOG MESSAGE	DESCRIPTION
`UPnP pass through Firewall`	UPnP packets can pass through the firewall.

Table 82 Content Filtering Logs

LOG MESSAGE	DESCRIPTION
`%s: Keyword blocking`	The content of a requested web page matched a user defined keyword.
`%s: Not in trusted web list`	The web site is not in a trusted domain, and the router blocks all traffic except trusted domain sites.
`%s: Forbidden Web site`	The web site is in the forbidden web site list.
`%s: Contains ActiveX`	The web site contains ActiveX.
`%s: Contains Java applet`	The web site contains a Java applet.
`%s: Contains cookie`	The web site contains a cookie.

Table 82 Content Filtering Logs (continued)

LOG MESSAGE	DESCRIPTION
`%s: Proxy mode detected`	The router detected proxy mode in the packet.
`%s`	The content filter server responded that the web site is in the blocked category list, but it did not return the category type.
`%s:%s`	The content filter server responded that the web site is in the blocked category list, and returned the category type.
`%s(cache hit)`	The system detected that the web site is in the blocked list from the local cache, but does not know the category type.
`%s:%s(cache hit)`	The system detected that the web site is in blocked list from the local cache, and knows the category type.
`%s: Trusted Web site`	The web site is in a trusted domain.
`%s`	When the content filter is not on according to the time schedule or you didn't select the "Block Matched Web Site" check box, the system forwards the web content.
`Waiting content filter server timeout`	The external content filtering server did not respond within the timeout period.
`DNS resolving failed`	The NBG318S cannot get the IP address of the external content filtering via DNS query.
`Creating socket failed`	The NBG318S cannot issue a query because TCP/IP socket creation failed, port:port number.
`Connecting to content filter server fail`	The connection to the external content filtering server failed.
`License key is invalid`	The external content filtering license key is invalid.

Table 83 Attack Logs

LOG MESSAGE	DESCRIPTION
`attack [TCP | UDP | IGMP | ESP | GRE | OSPF]`	The firewall detected a TCP/UDP/IGMP/ESP/GRE/OSPF attack.
`attack ICMP (type:%d, code:%d)`	The firewall detected an ICMP attack. For type and code details, see Table 87 on page 200.
`land [TCP | UDP | IGMP | ESP | GRE | OSPF]`	The firewall detected a TCP/UDP/IGMP/ESP/GRE/OSPF land attack.
`land ICMP (type:%d, code:%d)`	The firewall detected an ICMP land attack. For type and code details, see Table 87 on page 200.
`ip spoofing - WAN [TCP | UDP | IGMP | ESP | GRE | OSPF]`	The firewall detected an IP spoofing attack on the WAN port.
`ip spoofing - WAN ICMP (type:%d, code:%d)`	The firewall detected an ICMP IP spoofing attack on the WAN port. For type and code details, see Table 87 on page 200.
`icmp echo: ICMP (type:%d, code:%d)`	The firewall detected an ICMP echo attack. For type and code details, see Table 87 on page 200.
`syn flood TCP`	The firewall detected a TCP syn flood attack.
`ports scan TCP`	The firewall detected a TCP port scan attack.
`teardrop TCP`	The firewall detected a TCP teardrop attack.

Table 83 Attack Logs (continued)

LOG MESSAGE	DESCRIPTION
`teardrop UDP`	The firewall detected an UDP teardrop attack.
`teardrop ICMP (type:%d, code:%d)`	The firewall detected an ICMP teardrop attack. For type and code details, see Table 87 on page 200.
`illegal command TCP`	The firewall detected a TCP illegal command attack.
`NetBIOS TCP`	The firewall detected a TCP NetBIOS attack.
`ip spoofing - no routing entry [TCP | UDP | IGMP | ESP | GRE | OSPF]`	The firewall classified a packet with no source routing entry as an IP spoofing attack.
`ip spoofing - no routing entry ICMP (type:%d, code:%d)`	The firewall classified an ICMP packet with no source routing entry as an IP spoofing attack.
`vulnerability ICMP (type:%d, code:%d)`	The firewall detected an ICMP vulnerability attack. For type and code details, see Table 87 on page 200.
`traceroute ICMP (type:%d, code:%d)`	The firewall detected an ICMP traceroute attack. For type and code details, see Table 87 on page 200.

Table 84 PKI Logs

LOG MESSAGE	DESCRIPTION
`Enrollment successful`	The SCEP online certificate enrollment was successful. The Destination field records the certification authority server IP address and port.
`Enrollment failed`	The SCEP online certificate enrollment failed. The Destination field records the certification authority server's IP address and port.
`Failed to resolve <SCEP CA server url>`	The SCEP online certificate enrollment failed because the certification authority server's address cannot be resolved.
`Enrollment successful`	The CMP online certificate enrollment was successful. The Destination field records the certification authority server's IP address and port.
`Enrollment failed`	The CMP online certificate enrollment failed. The Destination field records the certification authority server's IP address and port.
`Failed to resolve <CMP CA server url>`	The CMP online certificate enrollment failed because the certification authority server's IP address cannot be resolved.
`Rcvd ca cert: <subject name>`	The router received a certification authority certificate, with subject name as recorded, from the LDAP server whose IP address and port are recorded in the Source field.
`Rcvd user cert: <subject name>`	The router received a user certificate, with subject name as recorded, from the LDAP server whose IP address and port are recorded in the Source field.
`Rcvd CRL <size>: <issuer name>`	The router received a CRL (Certificate Revocation List), with size and issuer name as recorded, from the LDAP server whose IP address and port are recorded in the Source field.
`Rcvd ARL <size>: <issuer name>`	The router received an ARL (Authority Revocation List), with size and issuer name as recorded, from the LDAP server whose address and port are recorded in the Source field.

Table 84 PKI Logs (continued)

LOG MESSAGE	DESCRIPTION
`Failed to decode the received ca cert`	The router received a corrupted certification authority certificate from the LDAP server whose address and port are recorded in the Source field.
`Failed to decode the received user cert`	The router received a corrupted user certificate from the LDAP server whose address and port are recorded in the Source field.
`Failed to decode the received CRL`	The router received a corrupted CRL (Certificate Revocation List) from the LDAP server whose address and port are recorded in the Source field.
`Failed to decode the received ARL`	The router received a corrupted ARL (Authority Revocation List) from the LDAP server whose address and port are recorded in the Source field.
`Rcvd data <size> too large! Max size allowed: <max size>`	The router received directory data that was too large (the size is listed) from the LDAP server whose address and port are recorded in the Source field. The maximum size of directory data that the router allows is also recorded.
`Cert trusted: <subject name>`	The router has verified the path of the certificate with the listed subject name.
`Due to <reason codes>, cert not trusted: <subject name>`	Due to the reasons listed, the certificate with the listed subject name has not passed the path verification. The recorded reason codes are only approximate reasons for not trusting the certificate. Please see Table 87 on page 200 for the corresponding descriptions of the codes.

Table 85 802.1X Logs

LOG MESSAGE	DESCRIPTION
`Local User Database accepts user.`	A user was authenticated by the local user database.
`Local User Database reports user credential error.`	A user was not authenticated by the local user database because of an incorrect user password.
``Local User Database does not find user`s credential.``	A user was not authenticated by the local user database because the user is not listed in the local user database.
`RADIUS accepts user.`	A user was authenticated by the RADIUS Server.
`RADIUS rejects user. Pls check RADIUS Server.`	A user was not authenticated by the RADIUS Server. Please check the RADIUS Server.
`Local User Database does not support authentication method.`	The local user database only supports the EAP-MD5 method. A user tried to use another authentication method and was not authenticated.
`User logout because of session timeout expired.`	The router logged out a user whose session expired.
`User logout because of user deassociation.`	The router logged out a user who ended the session.
`User logout because of no authentication response from user.`	The router logged out a user from which there was no authentication response.
`User logout because of idle timeout expired.`	The router logged out a user whose idle timeout period expired.
`User logout because of user request.`	A user logged out.

Table 85 802.1X Logs (continued)

LOG MESSAGE	DESCRIPTION
`Local User Database does not support authentication method.`	A user tried to use an authentication method that the local user database does not support (it only supports EAP-MD5).
`No response from RADIUS. Pls check RADIUS Server.`	There is no response message from the RADIUS server, please check the RADIUS server.
`Use Local User Database to authenticate user.`	The local user database is operating as the authentication server.
`Use RADIUS to authenticate user.`	The RADIUS server is operating as the authentication server.
`No Server to authenticate user.`	There is no authentication server to authenticate a user.
`Local User Database does not find user`s credential.`	A user was not authenticated by the local user database because the user is not listed in the local user database.

Table 86 ACL Setting Notes

PACKET DIRECTION	DIRECTION	DESCRIPTION
(L to W)	LAN to WAN	ACL set for packets traveling from the LAN to the WAN.
(W to L)	WAN to LAN	ACL set for packets traveling from the WAN to the LAN.
(L to L/P)	LAN to LAN/ NBG318S	ACL set for packets traveling from the LAN to the LAN or the NBG318S.
(W to W/P)	WAN to WAN/ NBG318S	ACL set for packets traveling from the WAN to the WAN or the NBG318S.

Table 87 ICMP Notes

TYPE	CODE	DESCRIPTION
0		Echo Reply
	0	Echo reply message
3		Destination Unreachable
	0	Net unreachable
	1	Host unreachable
	2	Protocol unreachable
	3	Port unreachable
	4	A packet that needed fragmentation was dropped because it was set to Don't Fragment (DF)
	5	Source route failed
4		Source Quench
	0	A gateway may discard internet datagrams if it does not have the buffer space needed to queue the datagrams for output to the next network on the route to the destination network.
5		Redirect
	0	Redirect datagrams for the Network
	1	Redirect datagrams for the Host

Table 87 ICMP Notes (continued)

TYPE	CODE	DESCRIPTION
	2	Redirect datagrams for the Type of Service and Network
	3	Redirect datagrams for the Type of Service and Host
8		Echo
	0	Echo message
11		Time Exceeded
	0	Time to live exceeded in transit
	1	Fragment reassembly time exceeded
12		Parameter Problem
	0	Pointer indicates the error
13		Timestamp
	0	Timestamp request message
14		Timestamp Reply
	0	Timestamp reply message
15		Information Request
	0	Information request message
16		Information Reply
	0	Information reply message

Table 88 Syslog Logs

LOG MESSAGE	DESCRIPTION
`<Facility*8 + Severity>Mon dd hr:mm:ss hostname src="<srcIP:srcPort>" dst="<dstIP:dstPort>" msg="<msg>" note="<note>" devID="<mac address last three numbers>" cat="<category>`	"This message is sent by the system ("RAS" displays as the system name if you haven't configured one) when the router generates a syslog. The facility is defined in the web MAIN MENU->LOGS->Log Settings page. The severity is the log's syslog class. The definition of messages and notes are defined in the various log charts throughout this appendix. The "devID" is the last three characters of the MAC address of the router's LAN port. The "cat" is the same as the category in the router's logs.

The following table shows RFC-2408 ISAKMP payload types that the log displays. Please refer to the RFC for detailed information on each type.

Table 89 RFC-2408 ISAKMP Payload Types

LOG DISPLAY	PAYLOAD TYPE
SA	Security Association
PROP	Proposal
TRANS	Transform
KE	Key Exchange
ID	Identification
CER	Certificate
CER_REQ	Certificate Request
HASH	Hash

Table 89 RFC-2408 ISAKMP Payload Types (continued)

LOG DISPLAY	PAYLOAD TYPE
`SIG`	Signature
`NONCE`	Nonce
`NOTFY`	Notification
`DEL`	Delete
`VID`	Vendor ID

20

Tools

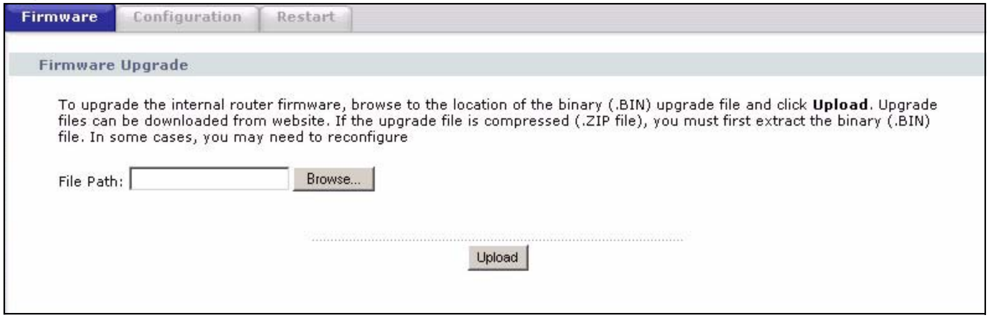
This chapter shows you how to upload a new firmware, upload or save backup configuration files and restart the NBG318S.

20.1 Firmware Upload Screen

Find firmware at www.zyxel.com in a file that (usually) uses the system model name with a "*.bin" extension, e.g., “NBG318S.bin". The upload process uses HTTP (Hypertext Transfer Protocol) and may take up to two minutes. After a successful upload, the system will reboot. See the Firmware and Configuration File Maintenance chapter for upgrading firmware using FTP/TFTP commands.

Click **Maintenance** > **Tools**. Follow the instructions in this screen to upload firmware to your NBG318S.

Figure 115 Maintenance > Tools > Firmware



Firmware Upgrade

To upgrade the internal router firmware, browse to the location of the binary (.BIN) upgrade file and click **Upload**. Upgrade files can be downloaded from website. If the upgrade file is compressed (.ZIP file), you must first extract the binary (.BIN) file. In some cases, you may need to reconfigure

File Path:

The following table describes the labels in this screen.

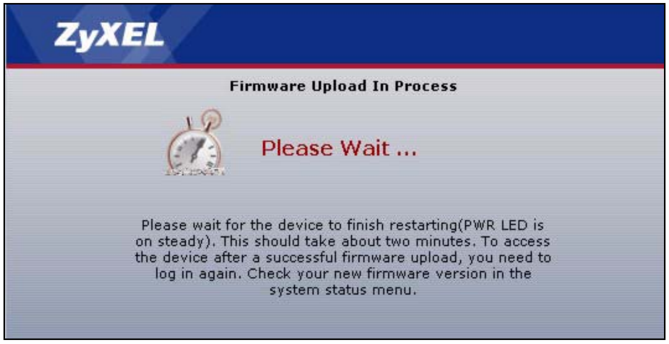
Table 90 Maintenance > Tools > Firmware

LABEL	DESCRIPTION
File Path	Type in the location of the file you want to upload in this field or click **Browse...** to find it.
Browse...	Click **Browse...** to find the .bin file you want to upload. Remember that you must decompress compressed (.zip) files before you can upload them.
Upload	Click **Upload** to begin the upload process. This process may take up to two minutes.

Do not turn off the NBG318S while firmware upload is in progress!

After you see the **Firmware Upload In Process** screen, wait two minutes before logging into the NBG318S again.

Figure 116 Upload Warning



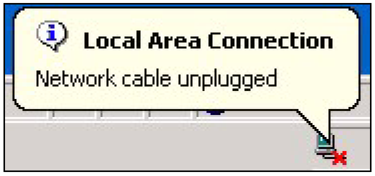
Firmware Upload In Process

Please Wait ...

Please wait for the device to finish restarting(PWR LED is on steady). This should take about two minutes. To access the device after a successful firmware upload, you need to log in again. Check your new firmware version in the system status menu.

The NBG318S automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

Figure 117 Network Temporarily Disconnected



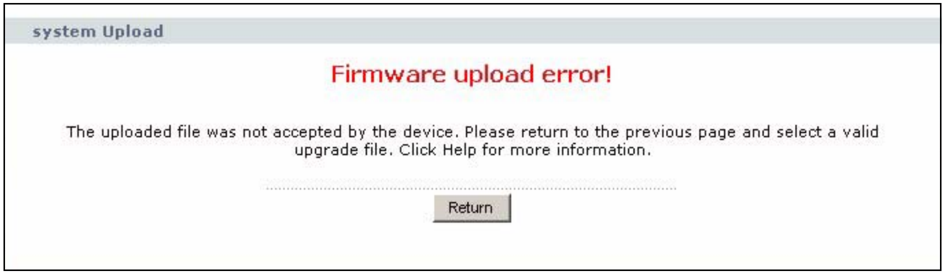
Local Area Connection

Network cable unplugged

After two minutes, log in again and check your new firmware version in the **Status** screen.

If the upload was not successful, the following screen will appear. Click **Return** to go back to the **Firmware** screen.

Figure 118 Upload Error Message



system Upload

Firmware upload error!

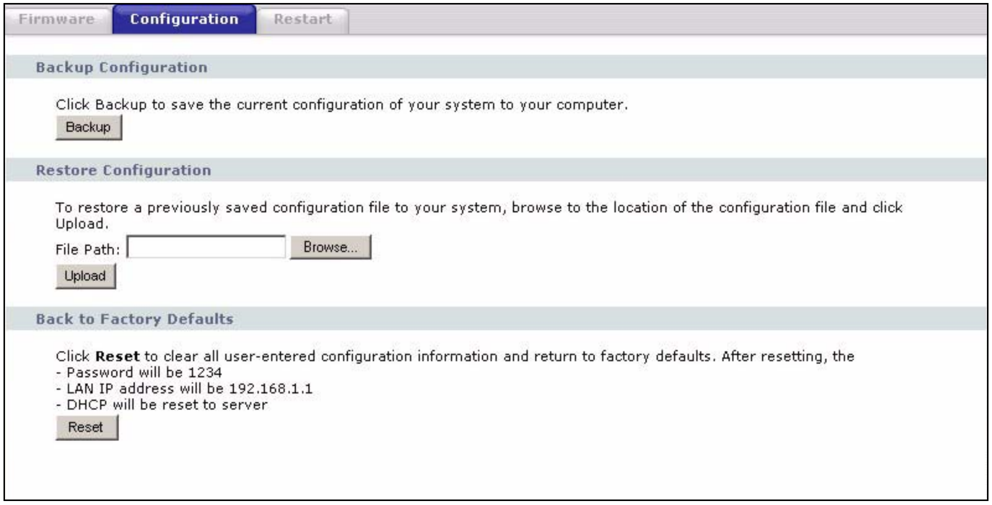
The uploaded file was not accepted by the device. Please return to the previous page and select a valid upgrade file. Click Help for more information.

20.2 Configuration Screen

See the Firmware and Configuration File Maintenance chapter for transferring configuration files using FTP/TFTP commands.

Click **Maintenance > Tools** > **Configuration**. Information related to factory defaults, backup configuration, and restoring configuration appears as shown next.

Figure 119 Maintenance > Tools > Configuration



Backup Configuration

Click Backup to save the current configuration of your system to your computer.

Restore Configuration

To restore a previously saved configuration file to your system, browse to the location of the configuration file and click Upload.

File Path:

Back to Factory Defaults

Click **Reset** to clear all user-entered configuration information and return to factory defaults. After resetting, the
- Password will be 1234
- LAN IP address will be 192.168.1.1
- DHCP will be reset to server

20.2.1 Backup Configuration

Backup configuration allows you to back up (save) the NBG318S's current configuration to a file on your computer. Once your NBG318S is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings.

Click **Backup** to save the NBG318S's current configuration to your computer.

20.2.2 Restore Configuration

Restore configuration allows you to upload a new or previously saved configuration file from your computer to your NBG318S.

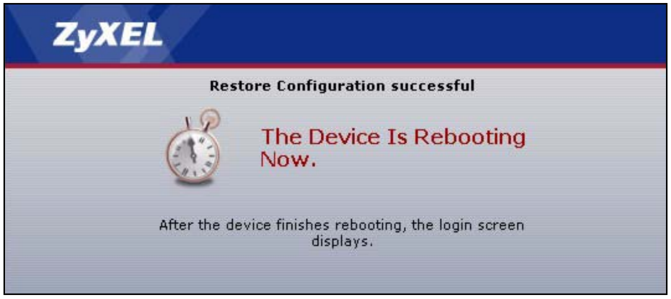
Table 91 Maintenance Restore Configuration

LABEL	DESCRIPTION
File Path	Type in the location of the file you want to upload in this field or click **Browse...** to find it.
Browse...	Click **Browse...** to find the file you want to upload. Remember that you must decompress compressed (.ZIP) files before you can upload them.
Upload	Click **Upload** to begin the upload process.

Do not turn off the NBG318S while configuration file upload is in progress

After you see a "configuration upload successful" screen, you must then wait one minute before logging into the NBG318S again.

Figure 120 Configuration Restore Successful



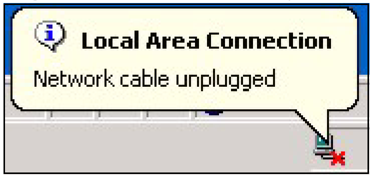
Restore Configuration successful

The Device Is Rebooting Now.

After the device finishes rebooting, the login screen displays.

The NBG318S automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

Figure 121 Temporarily Disconnected



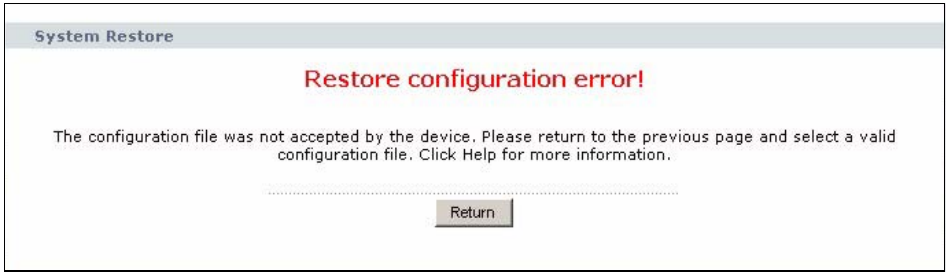
Local Area Connection

Network cable unplugged

If you uploaded the default configuration file you may need to change the IP address of your computer to be in the same subnet as that of the default NBG318S IP address (192.168.1.1). See your Quick Start Guide for details on how to set up your computer's IP address.

If the upload was not successful, the following screen will appear. Click **Return** to go back to the **Configuration** screen.

Figure 122 Configuration Restore Error



System Restore

Restore configuration error!

The configuration file was not accepted by the device. Please return to the previous page and select a valid configuration file. Click Help for more information.

20.2.3 Back to Factory Defaults

Pressing the **Reset** button in this section clears all user-entered configuration information and returns the NBG318S to its factory defaults.

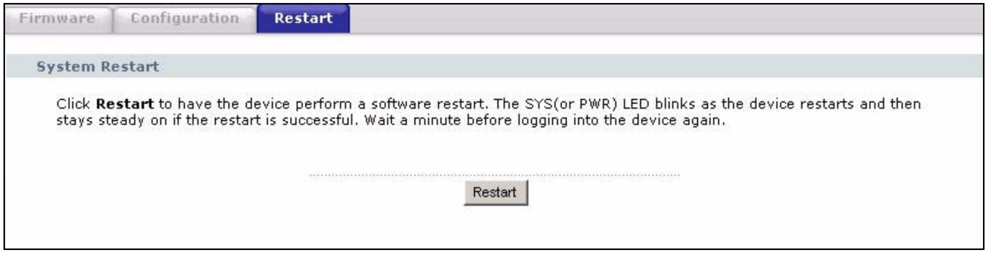
You can also press the **RESET** button on the rear panel to reset the factory defaults of your NBG318S. Refer to the chapter about introducing the web configurator for more information on the **RESET** button.

20.3 Restart Screen

System restart allows you to reboot the NBG318S without turning the power off.

Click **Maintenance > Tools** > **Restart**. Click **Restart** to have the NBG318S reboot. This does not affect the NBG318S's configuration.

Figure 123   Maintenance > Tools > Restart



System Restart

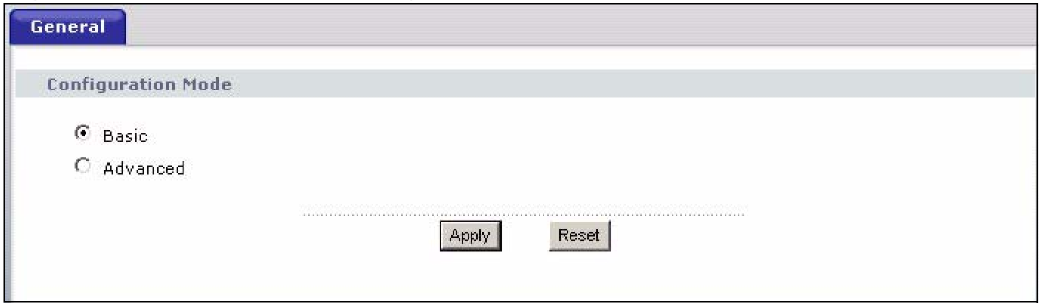
Click **Restart** to have the device perform a software restart. The SYS(or PWR) LED blinks as the device restarts and then stays steady on if the restart is successful. Wait a minute before logging into the device again.

21

Configuration Mode

Click **Maintenance** > **Config Mode** to open the following screen. This screen allows you to hide or display the advanced screens of some features or the advanced features, such as MAC filter or static route. **Basic** is selected by default and you cannot see the advanced screens or features. If you want to view and configure all screens including the advanced ones, select **Advanced** and click **Apply**.

Figure 124 Maintenance > Config Mode > General



Configuration Mode

● Basic

○ Advanced

The following table describes the labels in the screen.

Table 92 Maintenance > Config Mode > General

LABEL	DESCRIPTION
Configuration Mode	
Basic	Select **Basic** mode to enable or disable features and to monitor the status of your device.
Advanced	Select **Advanced** mode to set advanced settings.
Apply	Click on this to set the mode.
Reset	Click on this to reset your selection to the default (**Advanced**).

The following table includes the screens that you can view and configure only when you select **Advanced**.

Table 93 Advanced Configuration Options

CATEGORY	LINK	TAB
Network	Wireless LAN	MAC Filter
		Advanced
		QoS
	WAN	Advanced
	LAN	IP Alias
		Advanced
	DHCP Server	Advanced
	NAT	Advanced
Security	Firewall	Services
	Content Filter	Schedule
Management	Static Route	IP Static Route
	Bandwidth MGMT	Advanced
		Monitor
	Remote MGMT	Telnet
		FTP
		DNS
Maintenance	Logs	Log Settings

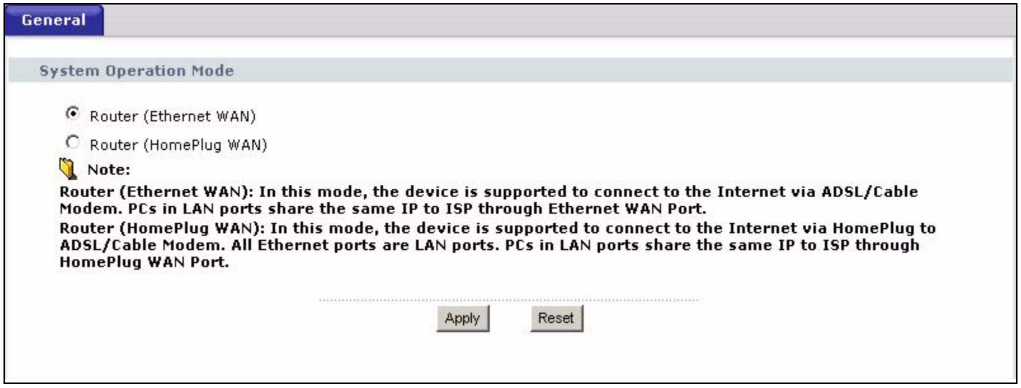
22

Sys Op Mode

22.1 Selecting System Operation Mode

Use this screen to select how you connect to the Internet.

Figure 125 Maintenance > Sys OP Mode > General



System Operation Mode

● Router (Ethernet WAN)

○ Router (HomePlug WAN)

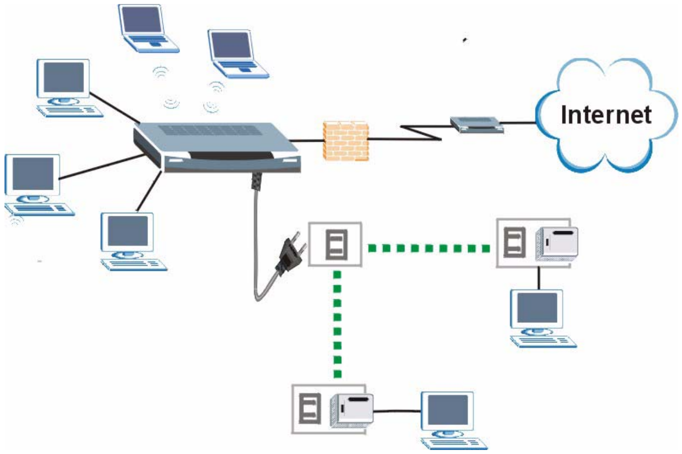
Note:

Router (Ethernet WAN): In this mode, the device is supported to connect to the Internet via ADSL/Cable Modem. PCs in LAN ports share the same IP to ISP through Ethernet WAN Port.

Router (HomePlug WAN): In this mode, the device is supported to connect to the Internet via HomePlug to ADSL/Cable Modem. All Ethernet ports are LAN ports. PCs in LAN ports share the same IP to ISP through HomePlug WAN Port.

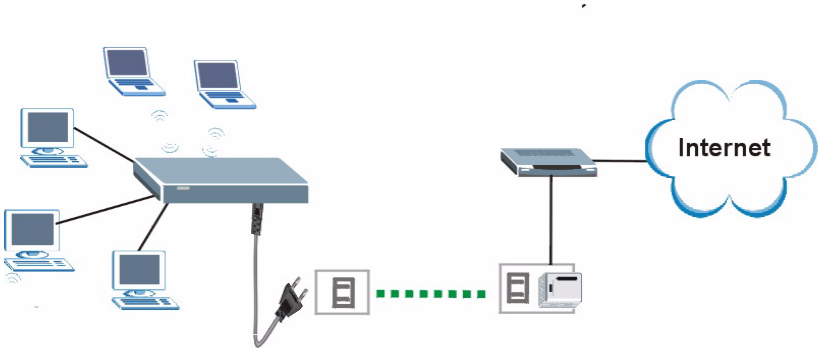
The figure below shows devices connecting to the Internet through a DSL connection. Select **Router(Ethernet WAN)** in the screen if you connect to the Internet as shown in diagram.

Figure 126 System Operation Mode: Ethernet WAN



The figure below shows a network connecting to the Internet through a HomePlug connection. Select **Router(HomePlug WAN)** in the screen if you connect to the Internet as shown in the diagram.

Figure 127 System Operation Mode: HomePlug WAN



The following table describes the labels in the screen.

Table 94 Maintenance > Sys OP Mode > General

LABEL	DESCRIPTION
System Operation Mode	
Router (Ethernet WAN)	Select this option if you connect to the Internet through a DSL or cable connection. In this mode three of the four ports are LAN ports, the other is a WAN port.
Router (HomePlug WAN)	Select this option if you connect to the Internet through a DSL or cable modem connected to your HomePlug AV network. In this mode all four of your ports operate as LAN ports.
Apply	Click this button to apply your settings.
Reset	Click this button to reset your settings to the default (**Ethernet WAN**)

If you select the incorrect System Operation Mode you cannot connect to the Internet.

23

Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- Power, Hardware Connections, and LEDs
- NBG318S Access and Login
- Internet Access
- Resetting the NBG318S to Its Factory Defaults
- Wireless Router/AP Troubleshooting
- HomePlug AV Troubleshooting
- Advanced Features

23.1 Power, Hardware Connections, and LEDs

? The NBG318S does not turn on. None of the LEDs turn on.

1 Make sure you are using the power adaptor or cord included with the NBG318S.
2 Make sure the power adaptor or cord is connected to the NBG318S and plugged in to an appropriate power source. Make sure the power source is turned on.
3 Disconnect and re-connect the power adaptor or cord to the NBG318S.
4 If the problem continues, contact the vendor.

? One of the LEDs does not behave as expected.

1 Make sure you understand the normal behavior of the LED. See Section 1.4 on page 33.
2 Check the hardware connections. See the Quick Start Guide.
3 Inspect your cables for damage. Contact the vendor to replace any damaged cables.
4 Disconnect and re-connect the power adaptor to the NBG318S.
5 If the problem continues, contact the vendor.

23.2 NBG318S Access and Login

I forgot the IP address for the NBG318S.

1 The default IP address is **192.168.1.1**.

2 If you changed the IP address and have forgotten it, you might get the IP address of the NBG318S by looking up the IP address of the default gateway for your computer. To do this in most Windows computers, click **Start** > **Run**, enter **cmd**, and then enter **ipconfig**. The IP address of the **Default Gateway** might be the IP address of the NBG318S (it depends on the network), so enter this IP address in your Internet browser.

3 If this does not work, you have to reset the device to its factory defaults. See Section 23.4 on page 217.

I forgot the password.

1 The default password is **1234**.

2 If this does not work, you have to reset the device to its factory defaults. See Section 23.4 on page 217.

I cannot see or access the **Login** screen in the web configurator.

1 Make sure you are using the correct IP address.

- The default IP address is 192.168.1.1.
- If you changed the IP address (Section 7.3 on page 106), use the new IP address.
- If you changed the IP address and have forgotten it, see the troubleshooting suggestions for I forgot the IP address for the NBG318S.

2 Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide.

3 Make sure your Internet browser does not block pop-up windows and has JavaScripts and Java enabled. See Appendix B on page 229.

4 Make sure your computer is in the same subnet as the NBG318S. (If you know that there are routers between your computer and the NBG318S, skip this step.)

- If there is a DHCP server on your network, make sure your computer is using a dynamic IP address. See Section 7.3 on page 106. Your NBG318S is a DHCP server by default.
- If there is no DHCP server on your network, make sure your computer's IP address is in the same subnet as the NBG318S. See Section 7.3 on page 106.

5 Reset the device to its factory defaults, and try to access the NBG318S with the default IP address. See Section 7.3 on page 106.

6 If the problem continues, contact the network administrator or vendor, or try one of the advanced suggestions.

Advanced Suggestions

- Try to access the NBG318S using another service, such as Telnet. If you can access the NBG318S, check the remote management settings and firewall rules to find out why the NBG318S does not respond to HTTP.
- If your computer is connected to the **WAN** port or is connected wirelessly, use a computer that is connected to a **LAN/ETHERNET** port.

I can see the **Login** screen, but I cannot log in to the NBG318S.

1 Make sure you have entered the password correctly. The default password is **1234**. This field is case-sensitive, so make sure [Caps Lock] is not on.

2 You cannot log in to the web configurator while someone is using Telnet to access the NBG318S. Log out of the NBG318S in the other session, or ask the person who is logged in to log out.

3 Disconnect and re-connect the power adaptor or cord to the NBG318S.

4 If this does not work, you have to reset the device to its factory defaults. See Section 23.4 on page 217.

I cannot Telnet to the NBG318S.

See the troubleshooting suggestions for I cannot see or access the Login screen in the web configurator. Ignore the suggestions about your browser.

I cannot use FTP to upload / download the configuration file. / I cannot use FTP to upload new firmware.

See the troubleshooting suggestions for I cannot see or access the Login screen in the web configurator. Ignore the suggestions about your browser.

23.3 Internet Access

I cannot access the Internet.

1 Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide.
2 Make sure you entered your ISP account information correctly in the wizard. These fields are case-sensitive, so make sure [Caps Lock] is not on.
3 If you are trying to access the Internet wirelessly, make sure the wireless settings in the wireless client are the same as the settings in the AP.
4 Disconnect all the cables from your device, and follow the directions in the Quick Start Guide again.
5 Go to Maintenance > Sys OP Mode > General. Check your System Operation Mode setting.
   - Select Router (Ethernet WAN) if your network is configured to access the Internet through an Ethernet connection to a DSL or cable modem.
   - Select Router (HomePlug WAN) if your network is configured to access the Internet through a HomePlug connection.
6 If the problem continues, contact your ISP.

I cannot access the Internet anymore. I had access to the Internet (with the NBG318S), but my Internet connection is not available anymore.

1 Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide and Section 1.4 on page 33.
2 Reboot the NBG318S.
3 If the problem continues, contact your ISP.

The Internet connection is slow or intermittent.

1 There might be a lot of traffic on the network. Look at the LEDs, and check Section 1.4 on page 33. If the NBG318S is sending or receiving a lot of information, try closing some programs that use the Internet, especially peer-to-peer applications.
2 Check the signal strength. If the signal strength is low, try moving the NBG318S closer to the AP if possible, and look around to see if there are any devices that might be interfering with the wireless network (for example, microwaves, other wireless networks, and so on).
3 Reboot the NBG318S.
4 If the problem continues, contact the network administrator or vendor, or try one of the advanced suggestions.

Advanced Suggestions

- Check the settings for bandwidth management. If it is disabled, you might consider activating it. If it is enabled, you might consider changing the allocations.
- Check the settings for QoS. If it is disabled, you might consider activating it. If it is enabled, you might consider raising or lowering the priority for some applications.

23.4 Resetting the NBG318S to Its Factory Defaults

If you reset the NBG318S, you lose all of the changes you have made. The NBG318S re-loads its default settings, and the password resets to **1234**. You have to make all of your changes again.

You will lose all of your changes when you push the **RESET** button.

To reset the NBG318S,

1. Make sure the **PWR LED** is on and not blinking.
2. Press and hold the **RESET** button for five to ten seconds. Release the **RESET** button when the **PWR** LED begins to blink. The default settings have been restored.

If the NBG318S restarts automatically, wait for the NBG318S to finish restarting, and log in to the web configurator. The password is “1234”.

If the NBG318S does not restart automatically, disconnect and reconnect the NBG318S’s power. Then, follow the directions above again.

23.5 Wireless Router/AP Troubleshooting

I cannot access the NBG318S or ping any computer from the WLAN (wireless AP or router).

1. Make sure the wireless LAN is enabled on the NBG318S
2. Make sure the wireless adapter on the wireless station is working properly.
3. Make sure the wireless adapter installed on your computer is IEEE 802.11 compatible and supports the same wireless standard as the NBG318S.
4. Make sure your computer (with a wireless adapter installed) is within the transmission range of the NBG318S.
5. Check that both the NBG318S and your wireless station are using the same wireless and wireless security settings.
6. Make sure traffic between the WLAN and the LAN is not blocked by the firewall on the NBG318S.
7. Make sure you allow the NBG318S to be remotely accessed through the WLAN interface. Check your remote management settings.

- See the chapter on Wireless LAN in the User’s Guide for more information.

23.6 HomePlug AV Troubleshooting

I cannot start my power line device.

Check your power supply is working. Power line adapters operate from the power supplied by your home wiring and cannot operate without a working power supply. Remove the power line adapter from the outlet. Then connect an electrical device that you know works into the same power outlet. This checks the status of the power outlet.

I cannot access my power line network.

1 Make sure that the network password is the same on all the power line adapters in your network.

2 Check the DAK and MAC address for all power line adapters are typed correctly.

3 Make sure that all your power line adapters are HomePlug AV. Check the package it came in or ask your vendor. This NBG318S can not detect earlier versions of HomePlug power line adapters such as HomePlug 1.0 or 1.0.1. (Although they can coexist on the same electrical wiring without interfering with each other.)

4 Make sure that the devices on your network are all on the same electrical wiring. Connect another power line adapter into an outlet close to your NBG318S's power outlet. They are probably now on the same electrical wiring. Check the **Link** ■ LED. If it now lights up your power line adapter was probably previously on separate electrical wiring. Ask an electrician for more information on the electrical wiring in your building.

5 Check you do not have a power meter between power line adapters. Power line signals cannot pass this.

The signal on my power line network may be weak for the following reasons.

1 Your power line adapters may be connected to electrical surge protectors. Connect them to standard power outlets.

2 Your power line adapters may be located close to large appliances such as refrigerators or air-conditioners that cause interference with the power line signal. Move the adapters further away from such appliances to reduce interference.

3 Your power line adapters may be placed close to electrical devices such as electrical insect-killers which produce radio waves. These may interfere with the power line signals. Move the adapters further away from such electrical devices.

4 Your wiring may be old and/or low quality or with a long wiring path.

23.7 Advanced Features

I can log in, but I cannot see some of the screens or fields in the Web Configurator.

You may be accessing the Web Configurator in Basic mode. Some screens and fields are available only in Advanced mode. Use the **Maintenance** > **Config** Mode screen to select Advanced mode.

I set up URL keyword blocking, but I can still access a Web site that should be blocked.

Make sure that you select the **Enable URL Keyword Blocking** check box in the Content Filtering screen. Make sure that the keywords that you type are listed in the **Keyword List**.

If a keyword that is listed in the **Keyword List** is not blocked when it is found in a URL, customize the keyword blocking using commands. See the Customizing Keyword Blocking URL Checking section in the Content Filter chapter.

PART VI
Appendices and Index

Product Specifications and Wall-Mounting Instructions

The following tables summarize the NBG318S's hardware and firmware features.

Table 95 Hardware Features

Dimensions (W x D x H)	190 x 128 x 33 mm
Power Specification	120~240 VAC, 50/60 Hz
Ethernet ports	Auto-negotiating: This auto-negotiation feature allows the NBG318S to detect the speed of incoming transmissions and adjust appropriately without manual intervention. It allows data transfer of either 10 Mbps or 100 Mbps in either half-duplex or full-duplex mode depending on your Ethernet network. Auto-crossover: Use either crossover or straight-through Ethernet cables.
3-4 Port Switch	A combination of switch and router makes your NBG318S a cost-effective and viable network solution. You can add up to three computers to the NBG318S without the cost of a hub when connecting to the Internet through the WAN port. You can add up to four computers to the NBG318S when you connect to the Internet through a HomePlug connection. Add more than four computers to your LAN by using a hub.
Reset Button	The reset button is built into the rear panel. Use this button to restore the NBG318S to its factory default settings. Press for 1 second to restart the device. Press for 5 seconds to restore to factory default settings.
Antenna	The NBG318S is equipped with a 2dBi detachable antenna to provide clear radio transmission and reception on the wireless network.
Operation Temperature	0º C ~ 40º C
Storage Temperature	-20º C ~ 60º C
Operation Humidity	20% ~ 90% RH (Non-condensing)
Storage Humidity	20% ~ 90% RH (Non-condensing)
Distance between the centers of the holes on the device's back.	125 mm
Screw size for wall-mounting	M4

Table 96 Firmware Features

FEATURE	DESCRIPTION
Default IP Address	192.168.1.1
Default Subnet Mask	255.255.255.0 (24 bits)
Default Password	1234
DHCP Pool	192.168.1.33 to 192.168.1.64
Device Management	Use the web configurator to easily configure the rich range of features on the NBG318S.
Wireless Functionality	Allows IEEE 802.11b and/or IEEE 802.11g wireless clients to connect to the NBG318S wirelessly. IEEE 802.11g clients can connect using the super G function. Enable wireless security (WEP, WPA(2), WPA(2)-PSK) and/or MAC filtering to protect your wireless network. Note: The NBG318S may be prone to RF (Radio Frequency) interference from other 2.4 GHz devices such as microwave ovens, wireless phones, Bluetooth enabled devices, and other wireless LANs.
Powerline Functionality	The HomePlug AV standard specifies how network devices communicate using standard electrical wiring. It supports a data transfer rate of up to 200Mbps. Data is encrypted using 128-bit AES (Advanced Encryption Standard). HomePlug AV compatible devices co-exist with HomePlug 1.0 devices but do not detect each other. The range of a HomePlug AV network is 300 meters/984 feet in optimal conditions. HomePlug AV is compatible with all OSs Maximum number of powerline devices on a single network is 16.
Firmware Upgrade	Download new firmware (when available) from the ZyXEL web site and use the web configurator, an FTP or a TFTP tool to put it on the NBG318S. Note: Only upload firmware for your specific model!
Configuration Backup & Restoration	Make a copy of the NBG318S's configuration and put it back on the NBG318S later if you decide you want to revert back to an earlier configuration.
Network Address Translation (NAT)	Each computer on your network must have its own unique IP address. Use NAT to convert a single public IP address to multiple private IP addresses for the computers on your network.
Firewall	You can configure firewall on the ZyXEL Device for secure Internet access. When the firewall is on, by default, all incoming traffic from the Internet to your network is blocked unless it is initiated from your network. This means that probes from the outside to your network are not allowed, but you can safely browse the Internet and download files for example.
Content Filter	The NBG318S blocks or allows access to web sites that you specify and blocks access to web sites with URLs that contain keywords that you specify. You can define time periods and days during which content filtering is enabled. You can also include or exclude particular computers on your network from content filtering. You can also subscribe to category-based content filtering that allows your NBG318S to check web sites against an external database.

Table 96 Firmware Features

FEATURE	DESCRIPTION
Bandwidth Management	You can efficiently manage traffic on your network by reserving bandwidth and giving priority to certain types of traffic and/or to particular computers.
Time and Date	Get the current time and date from an external server when you turn on your NBG318S. You can also set the time manually. These dates and times are then used in logs.
Port Forwarding	If you have a server (mail or web server for example) on your network, then use this feature to let people access it from the Internet.
DHCP (Dynamic Host Configuration Protocol)	Use this feature to have the NBG318S assign IP addresses, an IP default gateway and DNS servers to computers on your network.
Dynamic DNS Support	With Dynamic DNS (Domain Name System) support, you can use a fixed URL, www.zyxel.com for example, with a dynamic IP address. You must register for this service with a Dynamic DNS service provider.
IP Multicast	IP Multicast is used to send traffic to a specific group of computers. The NBG318S supports versions 1 and 2 of IGMP (Internet Group Management Protocol) used to join multicast groups (see RFC 2236).
IP Alias	IP Alias allows you to subdivide a physical network into logical networks over the same Ethernet interface with the NBG318S itself as the gateway for each subnet.
Logging and Tracing	Use packet tracing and logs for troubleshooting. You can send logs from the NBG318S to an external UNIX syslog server.
PPPoE	PPPoE mimics a dial-up over Ethernet Internet access connection.
PPTP Encapsulation	Point-to-Point Tunneling Protocol (PPTP) enables secure transfer of data through a Virtual Private Network (VPN). The NBG318S supports one PPTP connection at a time.
Universal Plug and Play (UPnP)	The NBG318S can communicate with other UPnP enabled devices in a network.

The following list, which is not exhaustive, illustrates the standards supported in the NBG318S.

Table 97 Standards Supported

STANDARD	DESCRIPTION
RFC 867	Daytime Protocol
RFC 868	Time Protocol.
RFC 1112	IGMP v1
RFC 1305	Network Time Protocol (NTP version 3)
RFC 1631	IP Network Address Translator (NAT)
RFC 1661	The Point-to-Point Protocol (PPP)
RFC 2236	Internet Group Management Protocol, Version 2.
RFC 2516	A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2766	Network Address Translation - Protocol
IEEE 802.11	Also known by the brand Wi-Fi, denotes a set of Wireless LAN/WLAN standards developed by working group 11 of the IEEE LAN/MAN Standards Committee (IEEE 802).
IEEE 802.11b	Uses the 2.4 gigahertz (GHz) band

Table 97 Standards Supported (continued)

STANDARD	DESCRIPTION
IEEE 802.11g	Uses the 2.4 gigahertz (GHz) band
IEEE 802.11d	Standard for Local and Metropolitan Area Networks: Media Access Control (MAC) Bridges
IEEE 802.11x	Port Based Network Access Control.
IEEE 802.11e QoS	IEEE 802.11 e Wireless LAN for Quality of Service
Microsoft PPTP	MS PPTP (Microsoft's implementation of Point to Point Tunneling Protocol)

Wall-mounting Instructions

Do the following to hang your NBG318S on a wall.

See the product specifications appendix for the size of screws to use and how far apart to place them.

1 Locate a high position on a wall that is free of obstructions. Use a sturdy wall.

2 Drill two holes for the screws. Make sure the distance between the centers of the holes matches what is listed in the product specifications appendix.

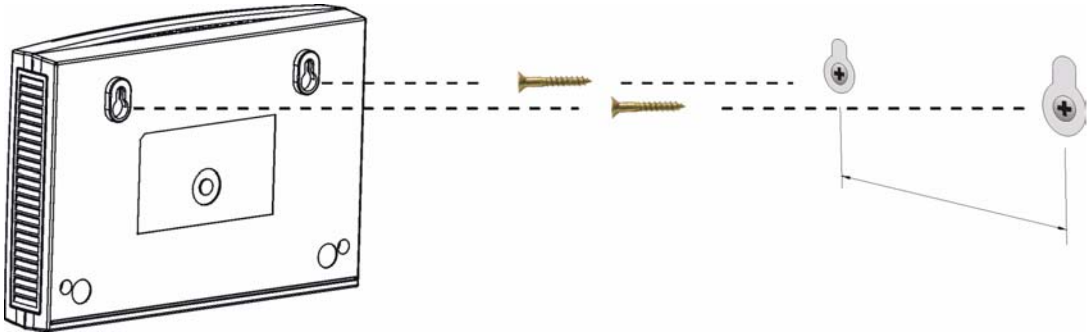
Be careful to avoid damaging pipes or cables located inside the wall when drilling holes for the screws.

3 Do not screw the screws all the way into the wall. Leave a small gap of about 0.5 cm between the heads of the screws and the wall.

4 Make sure the screws are snugly fastened to the wall. They need to hold the weight of the NBG318S with the connection cables.

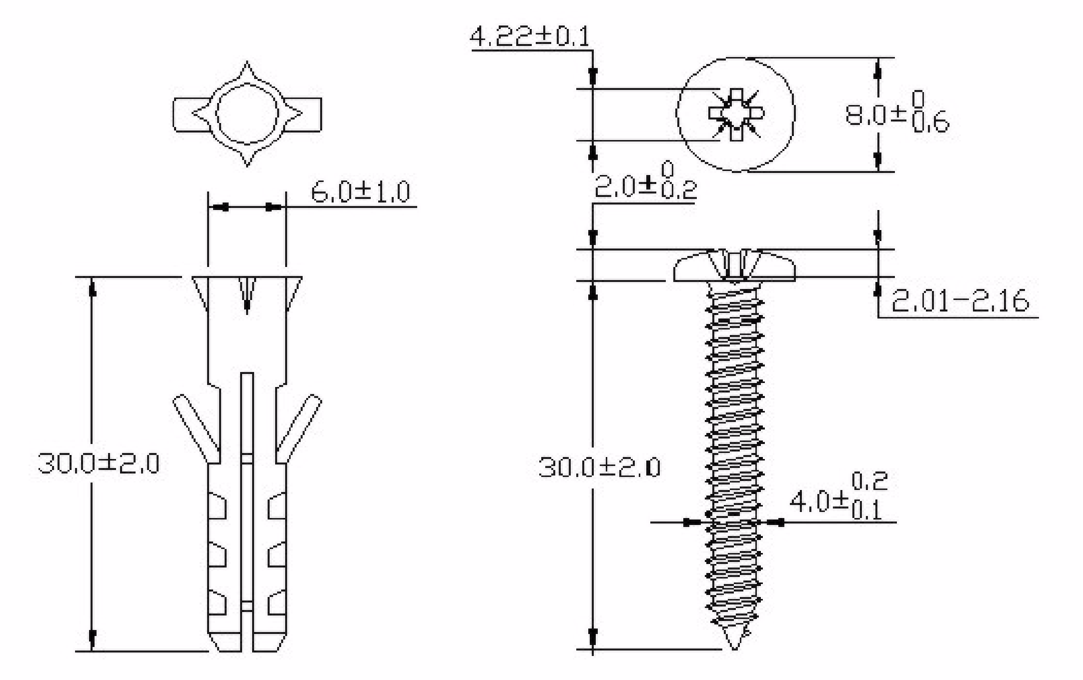
5 Align the holes on the back of the NBG318S with the screws on the wall. Hang the NBG318S on the screws.

Figure 128 Wall-mounting Example



The following are dimensions of an M4 tap screw and masonry plug used for wall mounting. All measurements are in millimeters (mm).

Figure 129 Masonry Plug and M4 Tap Screw



B

Pop-up Windows, JavaScripts and Java Permissions

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device.
- JavaScripts (enabled by default).
- Java permissions (enabled by default).

Internet Explorer 6 screens are used here. Screens for other Internet Explorer versions may vary.

Internet Explorer Pop-up Blockers

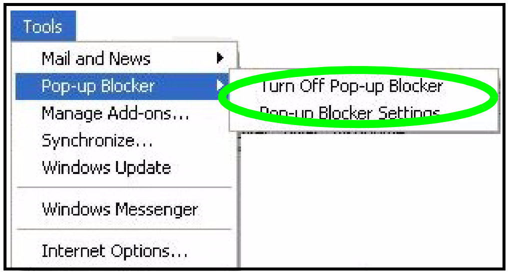
You may have to disable pop-up blocking to log into your device.

Either disable pop-up blocking (enabled by default in Windows XP SP (Service Pack) 2) or allow pop-up blocking and create an exception for your device's IP address.

Disable pop-up Blockers

1 In Internet Explorer, select **Tools**, **Pop-up Blocker** and then select **Turn Off Pop-up Blocker**.

Figure 130 Pop-up Blocker

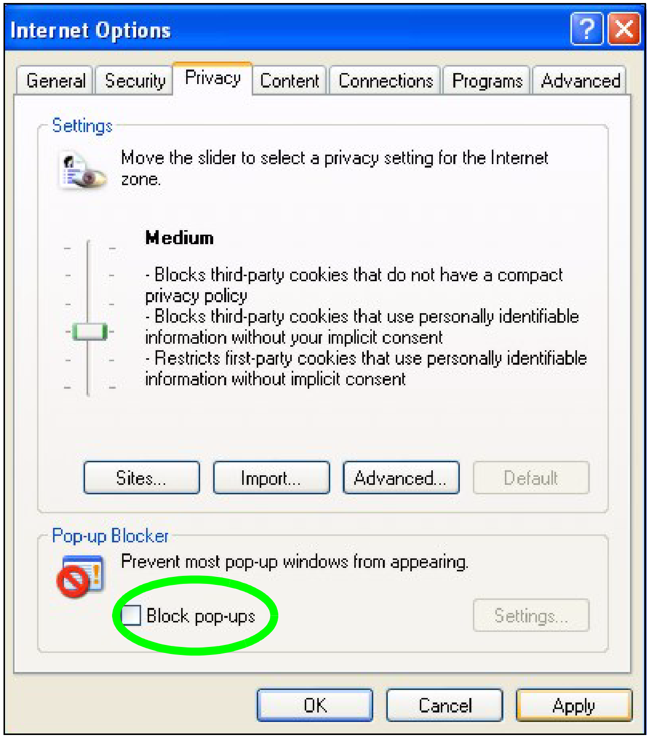


You can also check if pop-up blocking is disabled in the **Pop-up Blocker** section in the **Privacy** tab.

1 In Internet Explorer, select **Tools**, **Internet Options**, **Privacy**.

2 Clear the **Block pop-ups** check box in the **Pop-up Blocker** section of the screen. This disables any web pop-up blockers you may have enabled.

Figure 131 Internet Options: Privacy



Move the slider to select a privacy setting for the Internet zone.

Medium

- Blocks third-party cookies that do not have a compact privacy policy
- Blocks third-party cookies that use personally identifiable information without your implicit consent
- Restricts first-party cookies that use personally identifiable information without implicit consent

Prevent most pop-up windows from appearing.

☐ Block pop-ups

3 Click **Apply** to save this setting.

Enable pop-up Blockers with Exceptions

Alternatively, if you only want to allow pop-up windows from your device, see the following steps.

1 In Internet Explorer, select **Tools**, **Internet Options** and then the **Privacy** tab.

2 Select **Settings…**to open the **Pop-up Blocker Settings** screen.