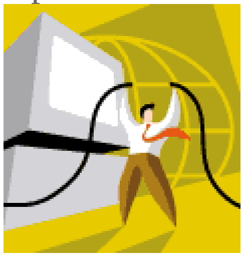
# XP Firewall Configuration Instructions

The Cable Guy - February 2004
Manually Configuring Windows Firewall in Windows XP Service Pack 2
Updated: February 16, 2004



By The Cable Guy

The following sections describe the settings for the new Windows Firewall.

**Windows Firewall**

Windows XP Service Pack 2 (SP2) includes the new Windows Firewall, which replaces the Internet Connection Firewall (ICF). Windows Firewall is a stateful host-based firewall that drops unsolicited incoming traffic that does not correspond to either traffic sent in response to a request of the computer (solicited traffic) or unsolicited traffic that has been specified as allowed (excepted traffic). Windows Firewall provides a level of protection from malicious users and programs that rely on unsolicited incoming traffic to attack computers on a network.

In Windows XP SP2, there are many new features for Windows Firewall, including the following:

- Enabled by default for all the connections of the computer
- New global configuration options that apply to all connections
- New set of dialog boxes for local configuration
- New operating mode
- Startup security
- Excepted traffic can be specified by scope
- Excepted traffic can be specified by application filename
- Built-in support for Internet Protocol version 6 (IPv6) traffic
- New configuration options with Netsh and Group Policy

For more information about these changes, see http://www.microsoft.com/technet/community/columns/cableguy/cg0104.mspx , the January 2004 Cable Guy article.

This article describes in detail the set of dialog boxes to manually configure the new Windows Firewall. Unlike ICF in Windows XP with Service Pack 1 (SP1) and Windows XP with no service packs installed, the configuration dialog boxes configure both IPv4 and IPv6 traffic.

The settings for ICF in Windows XP with SP1 and Windows XP with no service packs installed consist of a single checkbox (the **Protect my computer and network by limiting or preventing access to this computer from the Internet** check box on the **Advanced** tab of the properties of a connection) and a **Settings** button from which you can configure excepted traffic, logging settings, and allowed ICMP traffic.

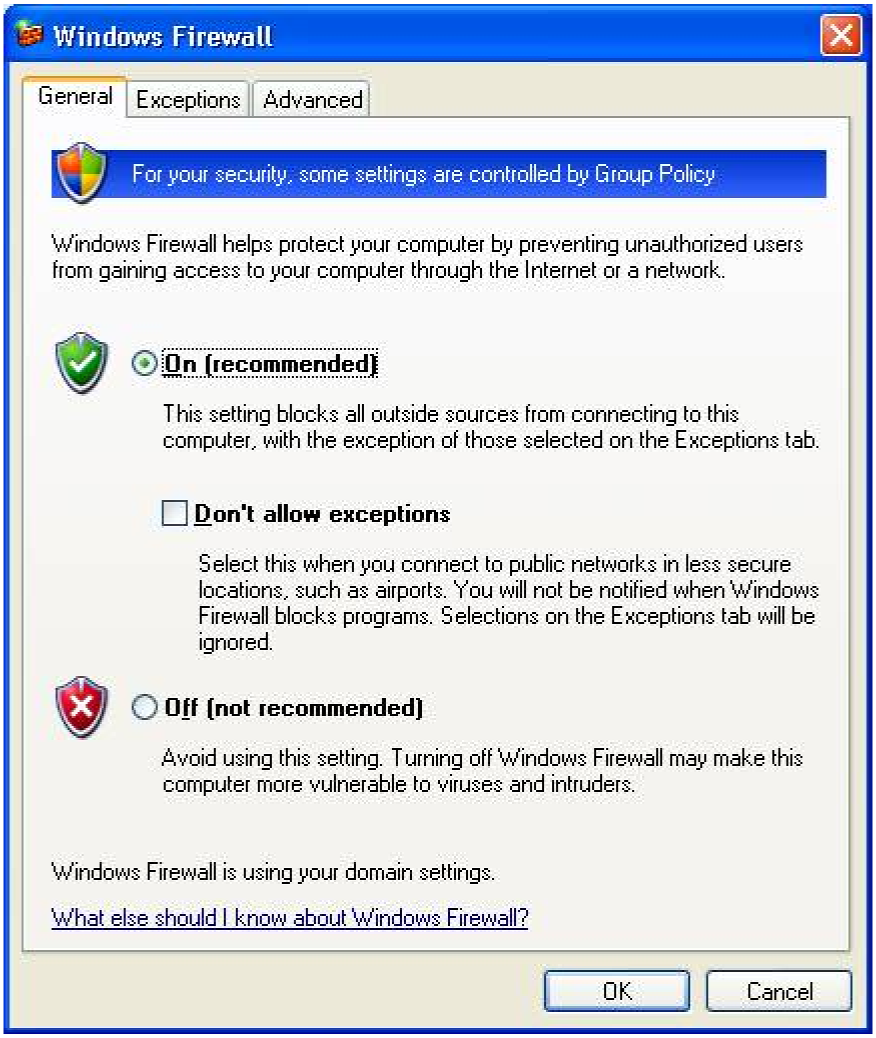
In Windows XP SP2, the check box on the **Advanced** tab of the properties of a connection has been replaced with a **Settings** button from which you can configure general settings, permissions for programs and services, connection-specific settings, log settings, and allowed ICMP traffic. The **Settings** button launches the new Windows Firewall Control Panel applet, which is also available from the Network and Internet Connections and Security Center categories of Control Panel.

The new **Windows Firewall** dialog box contains the following tabs:

- General
- Exceptions
- Advanced

### General Tab

The **General** tab with its default settings is shown in the following figure.



For your security, some settings are controlled by Group Policy

Windows Firewall helps protect your computer by preventing unauthorized users from gaining access to your computer through the Internet or a network.

● On (recommended)

This setting blocks all outside sources from connecting to this computer, with the exception of those selected on the Exceptions tab.

□ Don't allow exceptions

Select this when you connect to public networks in less secure locations, such as airports. You will not be notified when Windows Firewall blocks programs. Selections on the Exceptions tab will be ignored.

○ Off (not recommended)

Avoid using this setting. Turning off Windows Firewall may make this computer more vulnerable to viruses and intruders.

Windows Firewall is using your domain settings.

What else should I know about Windows Firewall?

From the **General** tab, you can select the following:

- **On (recommended)**

  Select to enable Windows Firewall for all of the network connections that are selected on the **Advanced** tab. Windows Firewall is enabled to allow only solicited and excepted incoming traffic. Excepted traffic is configured on the **Exceptions** tab.

- **Don’t allow exceptions**

  Click to allow only solicited incoming traffic. Excepted incoming traffic is not allowed. The settings on the **Exceptions** tab are ignored and all of the network connections are protected, regardless of the settings on the **Advanced** tab.

- **Off (not recommended)**

  Select to disable Windows Firewall. This is not recommended, especially for network connections that are directly accessible from the Internet, unless you are already using a third-party host firewall product.

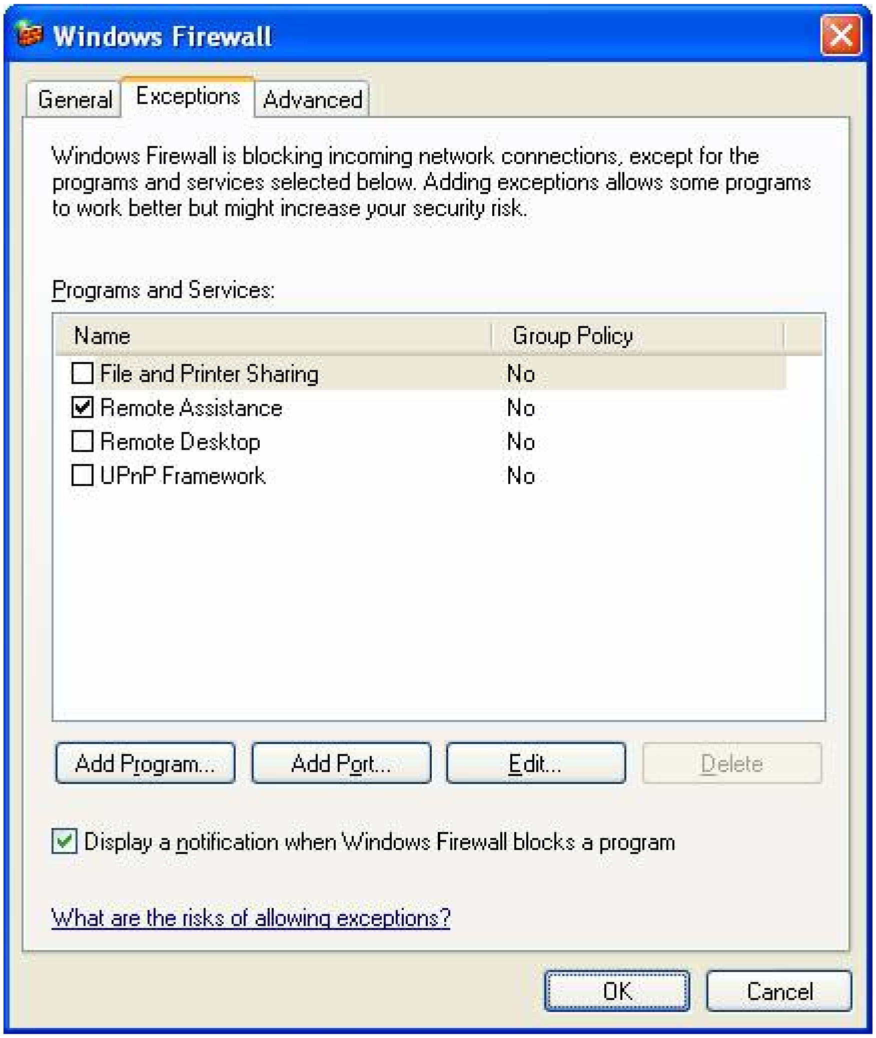
Notice that the default setting for Windows Firewall is **On (recommended)** for all the connections of a computer running Windows XP with SP2 and for newly created connections. This can impact the communications of programs or services that rely on unsolicited incoming traffic. In this case, you must identify those programs that are no longer working and add them or their traffic as excepted traffic. Many programs, such as Internet browsers and email clients (such as Outlook Express), do not rely on unsolicited incoming traffic and operate properly with Windows Firewall enabled.

If you are using Group Policy to configure Windows Firewall for computers running Windows XP with SP2, the Group Policy settings you configure might not allow local configuration. In this case, the options on the **General** tab and the other tabs might be grayed out and unavailable, even when you log on with an account that is a member of the local Administrators group (a local administrator).

Group Policy-based Windows Firewall settings allow you to configure a domain profile (a set of Windows Firewall settings that are applied when you are attached to a network that contains domain controllers) and standard profile (a set of Windows Firewall settings that are applied when you are attached to a network that does not contain domain controllers, such as the Internet). The configuration dialog boxes only display the Windows Firewall settings of the currently applied profile. To view the settings of the profile that are not currently applied, use **netsh firewall show** commands. To change the settings of the profile that are not currently applied, use **netsh firewall set** commands.

### Exceptions Tab

The **Exceptions** tab with its default settings is shown in the following figure.



Windows Firewall is blocking incoming network connections, except for the programs and services selected below. Adding exceptions allows some programs to work better but might increase your security risk.

Programs and Services:

| Name | Group Policy |
|---|---|
| □ File and Printer Sharing | No |
| ☑ Remote Assistance | No |
| □ Remote Desktop | No |
| □ UPnP Framework | No |

☑ Display a notification when Windows Firewall blocks a program

What are the risks of allowing exceptions?

From the **Exceptions** tab, you can enable or disable an existing program or service or maintain the list of programs and services that define excepted traffic. The excepted traffic is not allowed when the **Don’t allow exceptions** option is selected on the **General** tab.

With Windows XP with SP1 and Windows XP with no service packs installed, you could define the excepted traffic only in terms of Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) ports. With Windows XP with SP2, you can define excepted traffic in terms of TCP and UDP ports or by the file name of a program (an application or service). This configuration flexibility makes it easier to configure excepted traffic when the TCP or UDP ports of the program are not known or are dynamically determined when the program is started.

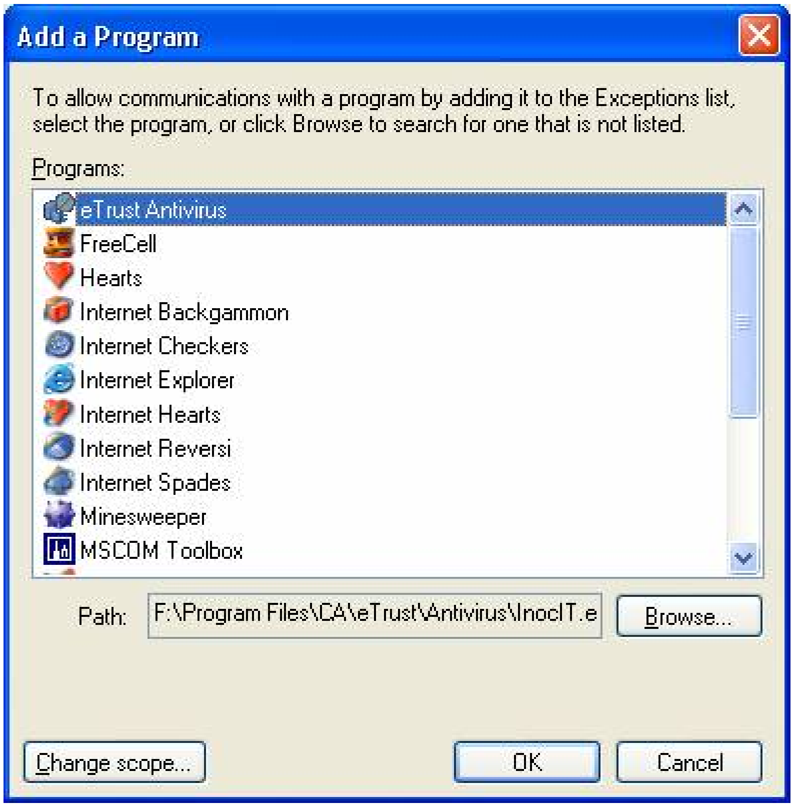
There are a set of pre-defined programs, which include:

- File and Print Sharing
- Remote Assistance (enabled by default)
- Remote Desktop
- UPnP framework

These predefined programs and services cannot be deleted.

If allowed by Group Policy, you can create additional exceptions based on specifying a program name by clicking **Add Program** and exceptions based on specifying a TCP or UDP port by clicking **AddPort**.

When you click **Add Program**, the **Add Program** dialog box is displayed from which you can select a program or browse for a program's file name. An example is shown in the following figure.



Add a Program

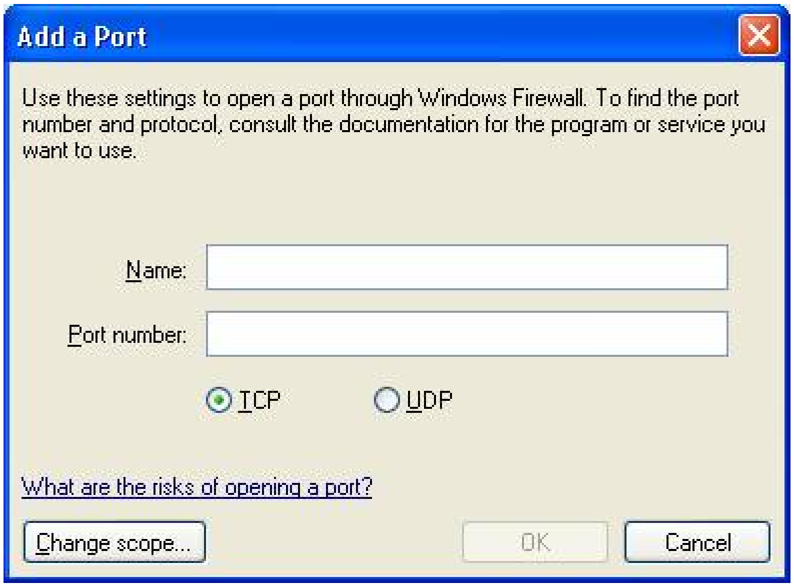
To allow communications with a program by adding it to the Exceptions list, select the program, or click Browse to search for one that is not listed.

Programs:

eTrust Antivirus
FreeCell
Hearts
Internet Backgammon
Internet Checkers
Internet Explorer
Internet Hearts
Internet Reversi
Internet Spades
Minesweeper
MSCOM Toolbox

Path: F:\Program Files\CA\eTrust\Antivirus\InocIT.e

When you click **AddPort**, the **Add a Port** dialog box is displayed, from which you can configure a TCP or UDP port. An example is shown in the following figure.



Use these settings to open a port through Windows Firewall. To find the port number and protocol, consult the documentation for the program or service you want to use.

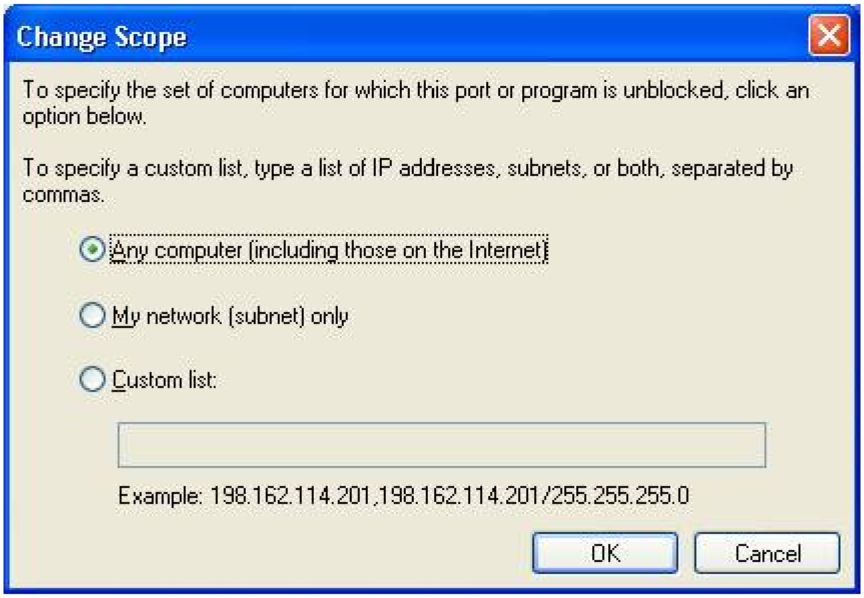
Name:

Port number:

● TCP ○ UDP

What are the risks of opening a port?

The new Windows Firewall allows you to specify the scope of excepted traffic. The scope defines the portion of the network from which the excepted traffic is allowed to originate. To define the scope for a program or port, click **Change Scope**. An example is shown in the following figure.



To specify the set of computers for which this port or program is unblocked, click an option below.

To specify a custom list, type a list of IP addresses, subnets, or both, separated by commas.

● Any computer (including those on the Internet)

○ My network (subnet) only

○ Custom list:

Example: 198.162.114.201,198.162.114.201/255.255.255.0

You have three options when defining the scope for a program or a port:

- **Any computer (including those on the Internet)**
- Excepted traffic is allowed from any IPv4 address. This setting might make your computer vulnerable to attacks from malicious users or programs on the Internet.
- **My network (subnet) only**
- Excepted traffic is allowed only from an IPv4 address that matches the local network segment (subnet) to which the network connection that received the traffic

is attached. For example, if the network connection is configured with an IPv4 address of 192.168.0.99 with a subnet mask of 255.255.0.0, excepted traffic is only allowed from IPv4 addresses in the range 192.168.0.1 to 192.168.255.254.

- **Custom list**
- You can specify one or more IPv4 addresses or IPv4 address ranges separated by commas. IPv4 address ranges typically correspond to subnets. For IPv4 addresses, type the IPv4 address in dotted decimal notation. For IPv4 address ranges, you can specify the range using a dotted decimal subnet mask or a prefix length. When you use a dotted decimal subnet mask, you can specify the range as an IPv4 network ID (such as 10.47.81.0/255.255.255.0) or by using an IPv4 address within the range (such as 10.47.81.231/255.255.255.0). When you use a network prefix length, you can specify the range as an IPv4 network ID (such as 10.47.81.0/24) or by using an IPv4 address within the range (such as 10.47.81.231/24). An example custom list is the following: 10.91.12.56,10.7.14.9/255.255.255.0,10.116.45.0/255.255.255.0,172.16.31.11/24,172.16.111.0/24.
- You cannot specify a custom list for IPv6 traffic.

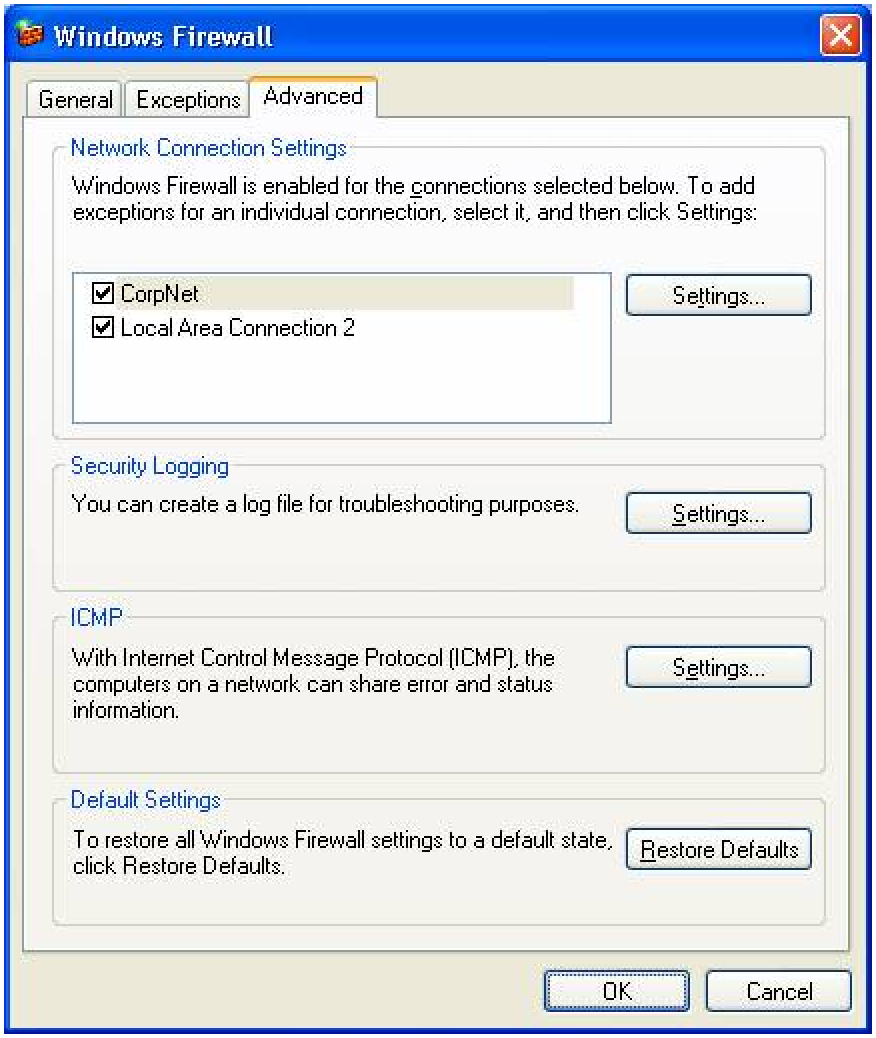
The **My network (subnet) only** scope is useful when you want to allow access to a program or service for the computers on a local home network that are all connected to the same subnet, but not to potentially malicious Internet users.

Once the program or port is added, it is disabled by default in the **Programs and Services** list.

All of the programs or services enabled from the **Exceptions** tab are enabled for all of the connections that are selected on the **Advanced** tab.

## Advanced Tab

The **Advanced** tab is shown in the following figure.



Windows Firewall is enabled for the connections selected below. To add exceptions for an individual connection, select it, and then click Settings:

☑ CorpNet
☑ Local Area Connection 2

You can create a log file for troubleshooting purposes.

With Internet Control Message Protocol (ICMP), the computers on a network can share error and status information.

To restore all Windows Firewall settings to a default state, click Restore Defaults.

The **Advanced** tab contains the following sections:

- Network Connection Settings
- Security Logging
- ICMP
- Default Settings

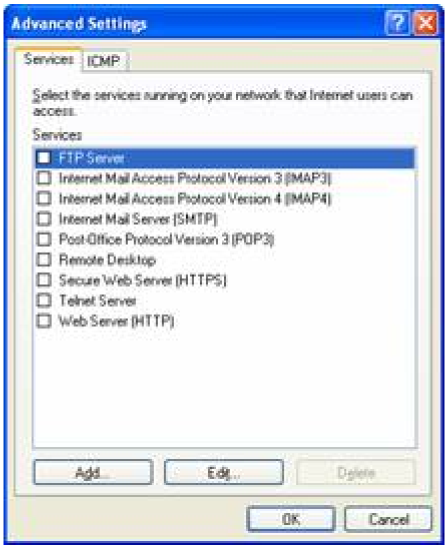
### Network Connections Settings

In **Network Connection Settings**, you can:

- Specify the set of interfaces on which Windows Firewall is enabled. To enable, select the check box next to the network connection name. To disable, clear the check box. By default, all of the network connections have Windows Firewall enabled. If a network connection does not appear in this list, then it is not a standard networking connection. Examples include some custom dialers from Internet service providers (ISPs).
- Configure advanced settings of an individual network connection by clicking the network connection name, and then clicking **Settings**.

If you clear all of the check boxes in the **Network Connection Settings**, then Windows Firewall is not protecting your computer, regardless of whether you have selected **On (recommended)** on the **General** tab. The settings in **Network Connection Settings** are ignored if you have selected **Don’t allow exceptions** on the **General** tab, in which case all interfaces are protected.

When you click **Settings**, the **Advanced Settings** dialog box is displayed, as shown in the following figure.



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

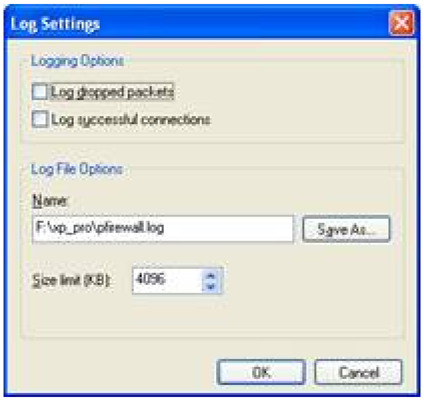
Services

- □ FTP Server
- □ Internet Mail Access Protocol Version 3 (IMAP3)
- □ Internet Mail Access Protocol Version 4 (IMAP4)
- □ Internet Mail Server (SMTP)
- □ Post-Office Protocol Version 3 (POP3)
- □ Remote Desktop
- □ Secure Web Server (HTTPS)
- □ Telnet Server
- □ Web Server (HTTP)

From the **Advanced Settings** dialog box, you can configure specific services from the **Services** tab (by TCP or UDP port only) or enable specific types of ICMP traffic from the **ICMP** tab. These two tabs are equivalent to the settings tabs for ICF configuration in Windows XP with SP1 and Windows XP with no service packs installed.

**Security Logging**

In **Security Logging**, click **Settings** to specify the configuration of Windows Firewall logging in the **Log Settings** dialog box, as shown in the following figure.



Logging Options

□ Log dropped packets

□ Log successful connections

Log File Options

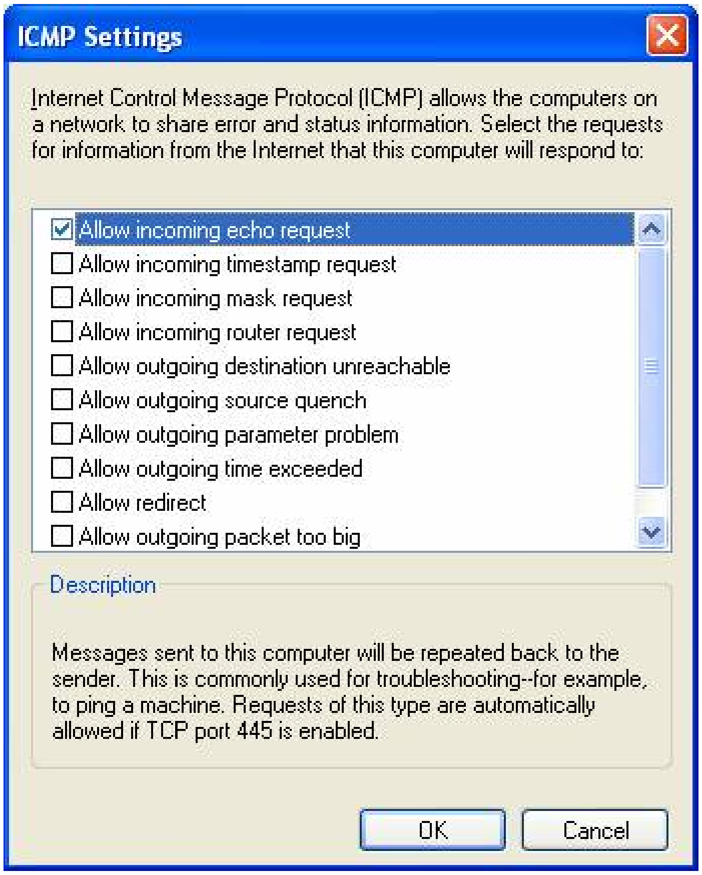
Name: F:\xp_pro\pfirewall.log

Size limit (KB): 4096

From the **Log Settings** dialog box, you can configure whether to log discarded (dropped) packets or successful connections and specify the name and location of the log file (by default set to *Systemroot*\pfirewall.log) and its maximum size.

**ICMP**

In **ICMP**, click **Settings** to specify the types of ICMP traffic that are allowed in the **ICMP** dialog box, as shown in the following figure.



Internet Control Message Protocol (ICMP) allows the computers on a network to share error and status information. Select the requests for information from the Internet that this computer will respond to:

☑ Allow incoming echo request

□ Allow incoming timestamp request

□ Allow incoming mask request

□ Allow incoming router request

□ Allow outgoing destination unreachable

□ Allow outgoing source quench

□ Allow outgoing parameter problem

□ Allow outgoing time exceeded

□ Allow redirect

□ Allow outgoing packet too big

Description

Messages sent to this computer will be repeated back to the sender. This is commonly used for troubleshooting--for example, to ping a machine. Requests of this type are automatically allowed if TCP port 445 is enabled.

From the **ICMP** dialog box, you can enable and disable the types of incoming ICMP messages that Windows Firewall allows for all the connections selected on the **Advanced** tab. ICMP messages are used for diagnostics, reporting error conditions, and configuration. By default, no ICMP messages in the list are allowed.

A common step in troubleshooting connectivity problems is to use the Ping tool to ping the address of the computer to which you are trying to connect. When you ping, you send an ICMP Echo message and get an ICMP Echo Reply message in response. By default, Windows Firewall does not allow incoming ICMP Echo messages and therefore the computer cannot send an ICMP Echo Reply in response. To configure Windows Firewall to allow the incoming ICMP Echo message, you must enable the **Allow incoming echo request** setting.

### Default Settings

Click **Restore Defaults** to reset Windows Firewall back to its originally installed state. When you click **Restore Defaults**, you are prompted to verify your decision before Windows Firewall settings are changed.

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## For More Information

For more information about Windows XP SP2, consult the following resources:

- New Networking Features in Windows XP Service Pack 2, the January 2004 Cable Guy article
- Changes to Functionality in Microsoft Windows XP Service Pack 2
- Changes to Functionality in Microsoft Windows XP Service Pack 2
- Deploying Windows Firewall Settings for Microsoft Windows XP with Service Pack 2
- Troubleshooting Windows Firewall in Microsoft Windows XP Service Pack 2

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