Computer address resolutions   Appendix B

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Introduction

In a networked environment, your connected computers must be able to distinguish between each other to communicate. There are several methods that networked computers can use to keep track of their respective computer names, IP addresses, and so on. This appendix explains some of those methods.

Whether you're setting up a network or adding computers to an existing network, you should consult with your network administrator before using or modifying any computer settings to use any of these methods to resolve addresses. If your library is already networked, it may already use one of these methods.

The following explanations are offered as introductory information only—and are not intended to be used as the sole source of information for making decisions about or changes to your network.

Using a Hosts file

Many smaller systems of networked computers use Hosts files to keep track of the IP addresses of the computers.

The Hosts file is a static text file that contains the matched IP addresses and machine names (Host names). If you use a Hosts file, every computer (server and clients) on your network should have the same file. This file should contain all of the machine names and IP addresses of each computer on the network.

Where to find the Hosts file

The location of the Hosts file varies by platform. See below for the system default location of the file on your operating system(s). On Windows, you can always use your operating system's Find feature to locate the Hosts file.

Platform	Default location of Hosts file
Windows 95/98	\Windows\System\Hosts
Windows NT/2000	Winnt *or* WNT\System32\drivers\etc\Hosts
Macintosh	System folder

To use the Find feature to search for your hosts file (Windows)

1 Click the **Start** button and select **Find** > **Files or Folders**. The Find: All Files window opens.

2 In the **Name and Location** tab, enter *host** in the **Named** box.

3 Select **Local hard drives** from the **Look in** box.

4 Click **Find Now**.

Setting up the Hosts file

Many computers have a sample Hosts file (HOSTS.SAM) that must be renamed HOSTS (without an extension) to be used by the Spectrum Server. You must then check that the file contains the correct machine names and IP addresses. A Windows Hosts file places the IP address to the left of the machine name. A Macintosh Hosts file places the IP address to the right of the machine name.

You can edit the Hosts file with any text editor. However, in Windows you may want to use the Edit command at the DOS prompt to edit your Hosts file in Windows so that no extension is added to the file name. NotePad saves files as text files with the .txt extension by default. For the Hosts file to be used, it can't have an extension.

The last line of the file should contain the IP address and name of the server computer. For your information, you can add comments behind the machine name (comments must be preceded by **#** in Windows and by a semicolon (;) on a Macintosh).

The Hosts file must be properly set up for Spectrum CIRC/CAT client/server software to run properly. If you already have TCP/IP installed on your computer, you can check your network settings for the proper IP address (see *Appendix A: Network Protocols*). If you have further questions, contact your network technician.

Example of a Hosts file (Windows)

IP Address	Machine name	Comments
127.0.0.1	clifford	
192.0.0.25	rita	
192.0.0.28	winRog	#Spectrum Server

Example of a Hosts file (Macintosh)

Machine name	IP Address	Comments
WINSERVER C	207.242.45.200	
ROBWP C	207.242.45.201	;Spectrum Server

Using DNS

By using DNS (Domain Name Service), you do not need to have a Hosts file because Hosts names are resolved at the location of the DNS.

DNS is a hierarchical naming system that identifies computers on a network. DNS uses a combination of text names separated by periods to create a unique name. The technical administrator of the DNS maintains a database of IP addresses and Host names.

You must enable DNS on your clients and set up DNS on your server. Incorrect DNS settings are one of the leading causes of connection problems during setup.

Note: The directions below describe how to enable and configure your DNS on Windows 95/98. When enabling and configuring your DNS on Windows NT/2000, additional/modified steps may be required.

To enable and configure your DNS on Windows 95/98 clients

1 Click **Start** and select **Settings** > **Control Panel**. The Control Panel window opens.

2 Double-click the **Network** icon. The Network window opens.

3 Click **TCP/IP** from the list of installed network components.

4 Click the **DNS Configuration** tab in the TCP/IP Properties window.

5 Select the **Enable DNS** option.

6 Enter your user name in the **Host** box.

7 Enter the name of your provider in the **Domain** box (for example, MSN.COM).

8 Enter the appropriate values for each **Search Order** option.

9 Click **OK** to close the TCP/IP Properties window.

10 Click **OK** to close the Network window.

Using WINS

WINS (Windows Internet Naming Service) configuration is another way of tying the IP address to the server name of the computer. WINS accomplishes this by linking the NetBIOS name and the IP address.

Enabling WINS resolution on Windows clients

To use WINS configuration to assign your IP addresses, you must enable WINS for your TCP/IP protocol. You do this on your client computer(s).

Note: The directions below describe how to enable WINS resolution on Windows 95/98. When enabling WINS resolution on Windows NT/2000, additional/modified steps may be required.

To enable WINS resolution on Windows 95/98

1 Click **Start** and select **Settings** > **Control Panel**. The Control Panel window opens.

2 Double-click the **Network** icon. The Network window opens.

3 Click the **Configuration** tab, if necessary.

4 Select **TCP/IP**.

5 Click the **Properties** button.

6 Click the **WINS Configuration** tab.

7 Select **Enable WINS Resolution**.

8 Enter the primary WINS Server IP address.

9 Click **OK** to close the TCP/IP Properties window

10 Click **OK** to close the Network window.

To use WINS, you also need to set up WINS on your server. Contact your network technician for more information on setting up WINS on your network.

Using DHCP

DHCP (Dynamic Host Configuration Protocol) distributes IP addresses. To use DHCP, you must install the DHCP manager on your Windows NT/2000 server. The advantages of using DHCP include the abilities to lease IP address numbers and to administer your IP addresses from one central location.

You can also set up DHCP to work with other services (DNS, WINS) in order to keep track of machine names (host names) so that you are not limited to only IP address numbers. This is important if you want to use machine names instead of being restricted to using IP address numbers.

You may not always be able to tell from your client computers' network setup if you are using DHCP to assign your IP addresses. You can use the Winipcfg utility to determine if you are using DHCP. At the MS-DOS prompt, enter *winipcfg*.

See your network technician for more information on setting up and using DHCP.