11

NetBIOS Names

NetBIOS is an interface that provides applications with access to network resources. Every computer on a Windows NT network must have a unique name for it to be accessible through the NetBIOS interface. This unique name is called a computer name or a NetBIOS name.

Chapter 11 targets the following objective in the Implementation section of the Networking Essentials exam:

Test Objectives

▶ Implement a NetBIOS naming scheme for all computers on a given network

1. NetBIOS is used with _____.

    A. NetBEUI

    B. TCP/IP

    C. IPX/SPX

    D. all the above

2. NetBIOS names should be _____ or fewer characters long.

    A. 8

    B. 15

    C. 16

    D. 45

3. Which three of the following elements can be part of a UNC path?

    A. A NetBIOS computer name

    B. A share name

    C. A user name

    D. An MS-DOS–style path

NetBIOS Background

NetBIOS (Network Basic Input/Output System) is an application interface that provides PC-based applications with uniform access to lower protocol layers. NetBIOS was once most closely associated with the NetBEUI protocol—*NetBEUI*, in fact, is an abbreviation for NetBIOS Extended User Interface. In recent years, however, other vendors have recognized the importance of providing compatibility with PC-based applications through NetBIOS, and NetBIOS is now available with many protocol configurations. For instance, such terms as "NetBIOS over IPX" or "NetBIOS over TCP/IP" refer to the protocols used with NetBIOS.

NetBIOS Names

On a NetBIOS network, every computer must have a unique name. The computer name must be 15 characters long or fewer. A NetBIOS name can include alphanumeric characters and any of the following special characters:

!@#$%^&()-_'{}.~

Note that you cannot use a space or an asterisk in a NetBIOS name. Also, NetBIOS names are not case-sensitive.

Within these character limitations, you can choose any name for a PC. The rule of thumb is to choose a name that helps you to identify the computer. Names such as PC1, PC2, and PC3 are difficult to visualize and easy to confuse. Likewise, names such as STUPID-PC or WORTHLESSPC could confuse you in the long run, especially if you have many computers on your network. For these reasons, names that include a hook relating the name of the owner or the location of the computer generally are more effective. Consider the following names, for example:

▶ BILL'S_PC

▶ MARKETINGPC

▶ LUNCHROOM_PC

▶ BILL'SLAPTOP

You must specify a computer name for a Windows NT or Windows 95 computer at installation. The computer name then becomes part of the network configuration. In either Windows NT or Windows 95, you can change the name of the computer through the Control Panel Network application (see the following tip and note).

$\mathcal{P}$tip

A NetBIOS computer name must:

▶ Be unique

▶ Consist of 15 characters or fewer

▶ Consist of either alphanumeric characters or the characters !@#$%^&()-_'{}.~

note

You designate a computer name for your PC when you install the operating system. You can change the computer name later through the Control Panel Network application, but you must have Administrative privileges to change the computer name. To change a NetBIOS computer name, follow these steps:

1. Click the Start button and choose Settings/Control Panel.

2. In Windows NT Control Panel, double-click on the Network application.

3. In the Network application's Identification tab, click on the Change button. The subsequent Identification Changes dialog box is shown in figure 11.1.

4. Change the computer name in the text box labeled Computer Name and click OK.

Figure 11.1

*Windows NT's
Identification
Changes dialog
box enables you
to change the
computer name.*
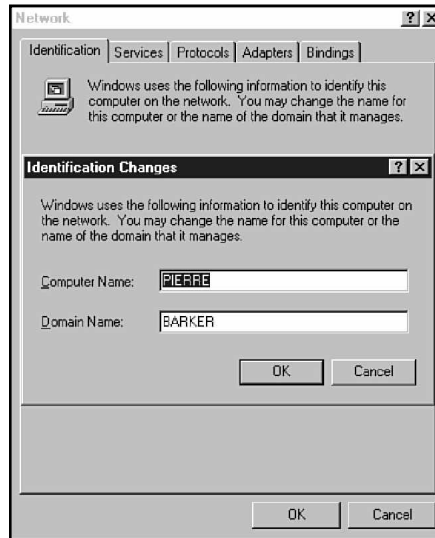
Finding Resources on Microsoft Networks

The Universal Naming Convention is a standard for identifying
resources on Microsoft networks. A UNC path consists of the fol-
lowing components:

▶ A NetBIOS computer name preceded with a double back-
slash (left-leaning slash)

▶ The share name of a shared resource located on the given
PC (optional)

▶ The MS-DOS–style path of a file or a directory located on
the given share (optional)

Elements of the UNC path are separated with single backslashes. The following list details some legal UNC names:

\\BILL's_PC

\\WEIGHTRM\ACCOUNTS

\\PET_DEPT\CATS\SIAMESE.TXT

Various Windows NT commands use UNC paths to designate network resources. For instance,

net view \\PET_DEPT

enables you to view the shared resources on the computer with the NetBIOS name PET_DEPT. The command

net use G: \\PET_DEPT\CATS

maps the shared directory CATS on the computer PET_DEPT to drive G:.

note

As with Windows NT, Windows 95 enables you to change the computer name after installation by using the Control Panel Network application. To change the name, follow these steps:

1. Click the Start button and choose Settings/Control Panel.

2. In the Windows 95 Control Panel, double-click on the Network application.

3. In the Network application, choose the Identification tab.

4. To change the computer name, edit the text in the Computer name text box (see fig. 11.2).

Figure 11.2

The Identification tab of the Windows 95 Network dialog box enables you to change the computer name.
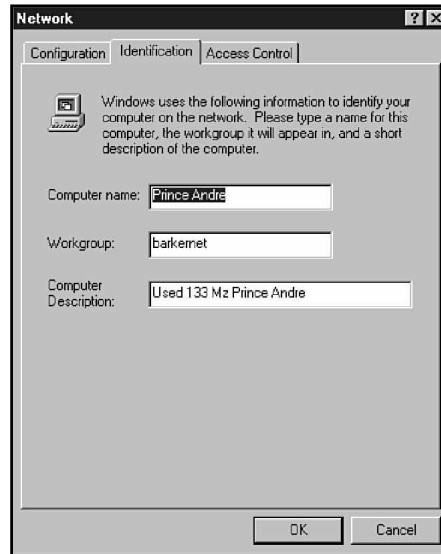
Summary

A computer on a NetBIOS network must have a NetBIOS computer name. The NetBIOS name is configured at installation and, in Windows NT or Windows 95, can be changed later through the Control Panel Network application. Computers use the NetBIOS name (sometimes combined with a share name or a path name) to locate resources on the network.

Exercises

Exercise 11.1: Mapping a Network Drive

Objective: Use the NetBIOS-based UNC path to map a drive letter to a network share.

Estimated time: 10 minutes

1. Double-click Windows NT's Network Neighborhood application. Locate another computer for which network shares have been defined.

note 🖉

Another useful tool for finding network shares is the Server Manager application in Windows NT Server's Administrative Tools group. To use this tool, click the Start menu and choose Programs, Administrative Tools, Server Manager.

2. Click the Start menu and go to the Windows NT command prompt. (Choose Programs, Command Prompt.)

3. Enter the following command:

    net view

4. The net view command lists the NetBIOS names of computers in your domain. Look for the computer you located using Network Neighborhood in Step 1.

5. Type the following command

    net view \\computername

    where computername is the NetBIOS name of the computer you located in Step 1. This command lists the network shares available on the computer.

6. Locate a directory share in the share list. Then type the following command

    net use * \\computername\sharename

where computername is the NetBIOS name of the computer you located in Step 1, and sharename is the name of the share you located in this step. The asterisk maps the next available drive letter to the share. You could also specify a particular drive letter (followed by a colon) instead of the asterisk. A message will appear on your screen giving you the drive letter that Windows NT used for the connection and indicating whether the command was successful.

7. Now enter the following command

   net view \\computername

   where computername is the name of the computer you chose in Step 1. The drive letter you mapped to the share should appear beside the share name, and the share type in the column should be titled Used as.

8. Enter the drive letter assigned in Step 6 at the command prompt, followed by a colon. For instance, enter **I:**.

9. Enter the command **dir** and press Enter. A directory listing of the shared directory should appear on your screen. You now have accessed the shared directory through the mapped drive letter.

note You must have the necessary privileges to access the shared directory. Check with your network administrator for details.

10. To delete the network drive mapping, enter the following command

    net use drive_letter: /delete

    where drive_letter is the drive letter assigned in Step 6.

note You also can map drive letters through Windows NT Explorer. To do so, pull down the Tools menu and select Map Network Drive.

Review Questions

1. NetBIOS is an abbreviation for _____.

   A. Network Basic Input/Output System

   B. Network Bilateral Operating System

   C. Network Binary Interchange Operating System

   D. Network Bus Input/Output System

2. Which of the following is a legal NetBIOS computer name?

   A. EAGLES_LODGE_PENT

   B. EAGLES!@#*_PC

   C. 486!!EAGLES_PC

   D. EAGLES LODGE

3. Which of the following UNC paths will lead you to a file called DOUGHNUTS on a PC called FOOD located in the SWEETS directory of the JUNKFOOD share?

   A. \\DOUGHNUTS\FOOD\SWEETS\JUNKFOOD

   B. \\FOOD\JUNKFOOD\SWEETS\DOUGHNUTS

   C. \\FOOD\JUNKFOOD\DOUGHNUTS

   D. \\JUNKFOOD\DOUGHNUTS

4. Which of the following commands produces a list of shared resources on the computer described in Question 3?

   A. Net share \\FOOD

   B. Net view

   C. Net view \\FOOD

   D. Net view \\FOOD /shares