

Windows 2000 Safe Mode

OBJECTIVES

1. Restart and try various startup options.

RESOURCES

1. Marcraft 8000 Trainer with Windows 2000 installed
2. A PS2 mouse
3. A LAN connection



Troubleshooting

DISCUSSION

In this lab we will explore different startup options when typing the F8 key at startup. These options can be useful for troubleshooting system problems. The Windows 2000 Advanced Options Menu includes the following default options:

- Safe Mode
- Safe Mode with Networking
- Safe Mode with Command Prompt
- Enable Boot Logging
- Enable VGA Mode
- Last Known Good Configuration
- Directory Services Restore Mode (Windows 2000 domain controllers only)
- Debugging Mode
- Boot Normally

Safe Mode will start Windows with a minimal set of drivers used to run Windows, including mouse, monitor, keyboard, hard drive, base video, and default system services. You can enter Safe Mode with Networking or Safe Mode with Command Prompt by selecting the appropriate mode. VGA mode is useful when you have installed a video driver and have configured it incorrectly. If the computer starts and the screen is blank or you see random lines all over the screen you may choose VGA mode to start Windows. This mode will start the computer with the base video settings (640 X 480, 256 Colors). Boot Logging starts Windows and logs services that load or do not load to C:\winnt\ntbtlog.txt. Last Known Good Configuration starts Windows using the Registry information saved at the last shut down. Directory Services Restore is used for Windows 2000 Server systems. Debugging Mode starts Windows and sends debug information through the serial port to another computer. In Hardware Profiles you can change Windows startup to select a designated profile. Hardware Profiles can be useful for saving hardware-specific information when transporting a hard drive between two computers. One can do this without the need to reinstall all the devices on each system at every startup.



Troubleshooting

PROCEDURE

1. Safe Mode

- ___ a. Turn on the computer (restart if it is already on) and select Boot to Windows 2000.
- ___ b. When the screen displays the text "Starting Windows, For Troubleshooting and Advanced Startup Options for Windows 2000, press F8 ", press the F8 key on the keyboard.
- ___ c. You will see the Advanced Options Menu. Safe Mode is selected by default. Press ENTER.
- ___ d. Once Windows starts you will see an information window about Safe Mode. Click OK.
- ___ e. Right-click the desktop and select Properties from the drop-down menu to open the *Display Properties* window, and click the Settings tab.
- ___ f. While in Safe Mode, Windows gives limited options on many things. Click the Colors drop-down menu. Record your observations in Table 29-1.
- ___ g. Click the Cancel button.
- ___ h. From the desktop, double-click the My Network Places icon.
- ___ i. Double-click on Entire Network.
- ___ j. Double-click on Microsoft Windows Network.
- ___ k. You will see a dialog window similar to Figure 29-1. During this Safe Mode, you cannot view the network. Click the OK button.
- ___ l. Close all windows and restart.



Figure 29-1: Unable to Browse Network Dialog

2. Safe Mode with Networking

- ___ a. When the computer has restarted, select Boot to Windows 2000 and press the F8 key as before.
- ___ b. From the Windows 2000 Advanced Options Menu scroll down by pressing the DOWN ARROW on the keyboard. Select Safe Mode with Networking and press ENTER.
- ___ c. Once Windows starts you will see an information window about Safe Mode. Click OK.
- ___ d. From the desktop, double-click the My Network Places icon.
- ___ e. Double-click on Entire Network.
- ___ f. Double-click on Microsoft Windows Network.
- ___ g. You should see your workgroup in the window. Double-click on it and record your observations in Table 29-2.
- ___ h. Close all windows and restart.

3. Safe Mode with Command Prompt

- ___ a. When the computer has restarted select Boot to Windows 2000 and press the F8 key as before.
- ___ b. From the Windows 2000 Advanced Options Menu scroll down and select Safe Mode with Command Prompt. Press ENTER.
- ___ c. The operating system will boot to a command prompt. (E:\>). Type **dir** and press ENTER to view the contents of the drive.
- ___ d. Record the amount of bytes free in Table 29-3.
- ___ e. Type **explorer** and press ENTER. This will start the Windows Explorer.
- ___ f. You will receive the Safe Mode message. Click OK.
- ___ g. Drag the title bar of cmd.exe (the command prompt) to the right.
- ___ h. Record the changes to the operating environment as a result of typing **explorer** in Table 29-4.
- ___ i. In the command line type **exit** and press ENTER.
- ___ j. Click the Start menu and select Shut Down.
- ___ k. Select Restart from the drop-down menu and click OK.

4. Boot Normally

- ☐ a. When the computer has restarted select Boot to Windows 2000 and press F8 as before.
- ☐ b. From the Windows 2000 Advanced Options Menu scroll down and select Boot Normally. Press ENTER.
- ☐ c. Use Windows Explorer to delete the file E:\WINNT\ntbtlog.txt. You may need to click on "Show files" if you cannot view the contents of the WINNT folder.
- ☐ d. You have just deleted the boot log text file that Windows uses to log activity when Enable Boot Logging startup is selected. Close all windows and restart the computer.

5. Boot Logging

- ☐ a. When the computer has restarted select Boot to Windows 2000 and press F8 as before.
- ☐ b. From the Windows 2000 Advanced Options Menu scroll down and select Enable Boot Logging. Press ENTER. Windows will now create a boot log file (E:\WINNT\ntbtlog.txt) to record its activity at startup.
- ☐ c. Once Windows has started you can view the contents of the logged file. From the desktop double-click on My Computer.
- ☐ d. Double-click on (E:).
- ☐ e. Double-click on WINNT.
- ☐ f. Click Show files if necessary. Its hyperlink is located on the left-hand portion of the window.
- ☐ g. Scroll down and double-click on "ntbtlog."
- ☐ h. *Notepad* will open the file. The window will appear similar to Figure 29-2. You can now view the boot log that contains all loaded and not-loaded drivers. Record the date that appears on the first line of the file in Table 29-5.

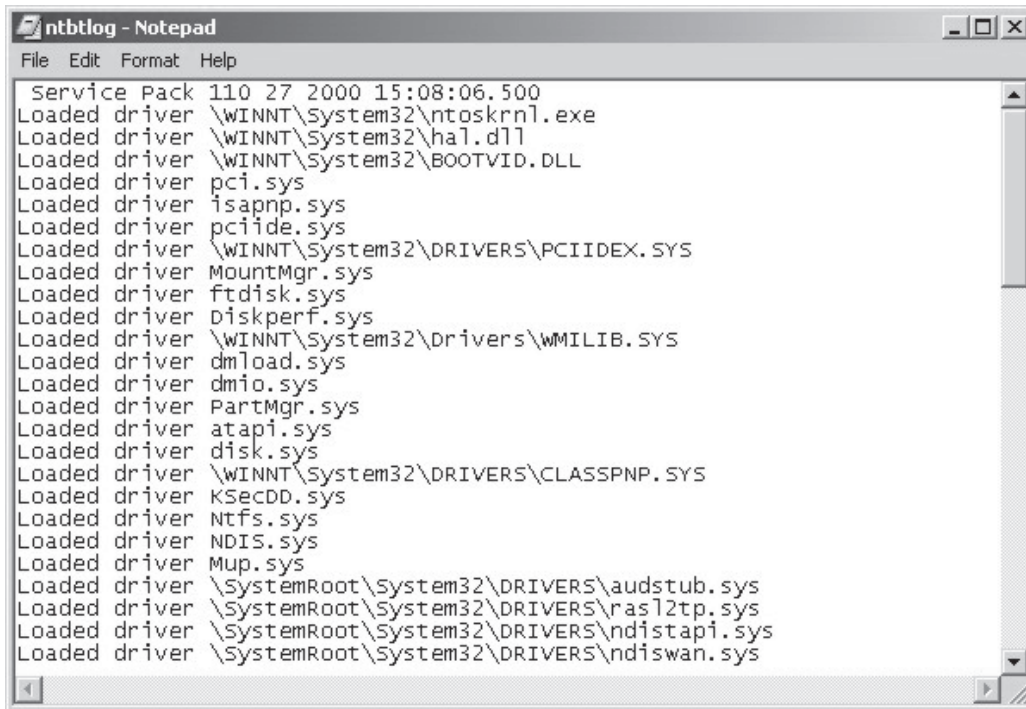


Figure 29-2: NT Boot Log

- ☐ i. Scroll down and view the contents of the file.
- ☐ j. Close all windows and restart the computer.

PROCEDURE - 29

6. VGA Mode

- ___ a. When the computer has restarted select Boot to Windows 2000 and press F8 as before.
- ___ b. From the Windows 2000 Advanced Options Menu scroll down and select Enable VGA Mode. Press ENTER.
- ___ c. When Windows has started, right-click the desktop and click Properties.
- ___ d. Click the Settings tab.
- ___ e. Record the setting for Colors and Screen area in Table 29-6.
- ___ f. Close all windows and restart the computer.

7. Last Known Good Configuration

- ___ a. When the computer has restarted select Boot to Windows 2000 and press F8 as before.
- ___ b. From the Windows 2000 Advanced Options Menu scroll down and select Last Known Good Configuration. Press ENTER.
- ___ c. If you have made hardware profiles previously in Windows you can select them and boot to them. Press L to switch to the Last Known Good configuration.
- ___ d. Profile 1 should be selected. Press ENTER. If you pressed D your options would change to the default configuration.

8. Hardware Profiles

- ___ a. When Windows has started right-click on My Computer and select Properties.
- ___ b. Click the Hardware tab.
- ___ c. Click the Hardware Profiles button.
- ___ d. A window similar to Figure 29-3 will appear. From this window you can add and delete hardware profiles. Click Cancel.



Figure 29-3:
Hardware Profiles

- ___ e. Close all windows and shut down the computer.

TABLES

Table 29-1

Colors Drop-down Menu Observations

Table 29-2

Network Observations	
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Table 29-3

Bytes Free on C:\ at Command Prompt

Table 29-4

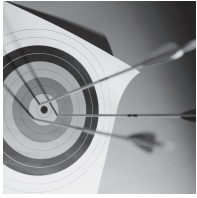
Operating Environment Changes Observations

Table 29-5

Boot Log Date:	
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Table 29-6

Display Colors:	
Display Screen Area:	



Feedback

LAB QUESTIONS

1. How many startup options are included with Windows 2000 by default?
2. What does Safe Mode do?
3. When can VGA mode be useful?
4. How would you access the Start menu when in Safe Mode with Command Prompt?
5. Under what circumstances could Hardware Profiles be useful?