Hardware Configuration

Section Three

Troubleshooting Conflicts

Introduction

GENERAL

Windows XP has extended the "plug & play" technology using many advanced troubleshooting features (such as the system configuration utility). These tools have made it much easier to resolve issues without causing unintended consequences. If you are facing a hardware configuration issue it is best to start off the restoration process in a calm and deliberate manner. Record error messages and any information that may have led up to the configuration problem. Take the time to review services (administrative tools | services) and the event viewer (administrative tools | event viewer) -- both found in the control panel. If no additional hardware has been added, usually you can build a scenario from the services and event viewer to see what may have taken place.

Once you have noted all errors and built a basic understanding for what has taken place prior to the problem occurring, review any MSDN notes that reflect action for those errors (you can access the MSDN database from the Microsoft web site (www.microsoft.com\msdn). Many times MSDN notes will help determine the resolution steps to follow.

In this section, we will review many of the hardware configuration tools available in XP:

- System Configuration Utility
  Recover
- Direct X Diagnostic Tool
- XP Help Support Center
- Remove Unwanted Components
- Modifying the User Interface

SYSTEM CONFIGURATION UTILITY

Windows XP ships with a *System Configuration Utility* that helps administrators troubleshoot configuration issues. To launch the utility, type *msconfig* in the Run prompt.

FIGURE 1. **System Configuration Utility**
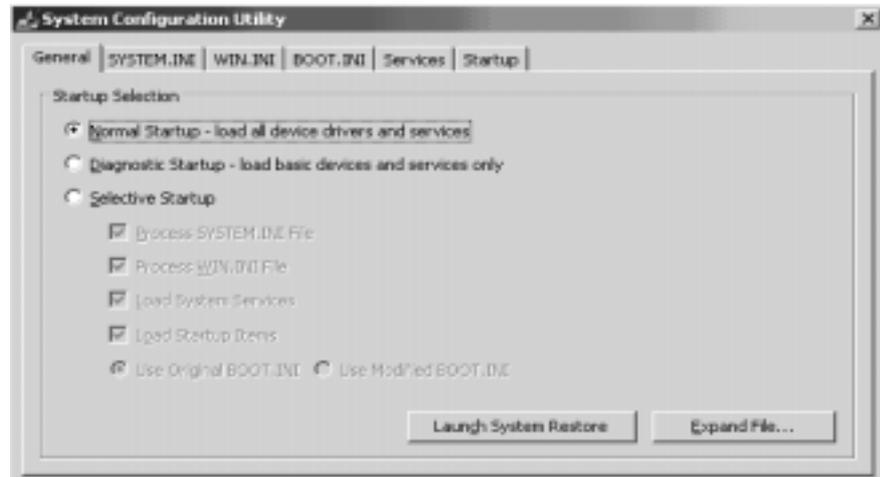
Here are the tabs and a few of their features displayed within:

- **General** - This lists three startup options (normal, diagnostic and selective). It provides a button that launches System Restore.
- **System.ini** - This displays the contents of the System.ini file and lets you control what it loads.
- **Win.ini** - This displays the content of the Win.ini file and lets you control what it loads.
- **Boot.ini** files - This displays the Boot.ini file and allows you to change several boot options.
- **Services** - This lists all of the services that are installed on your computer and their operational status, whether running or stopped. It also provides a feature that lists the services that are not from Microsoft, which allows you to easily identify installed services that are not part of Windows XP.
- **Startup** - This lists all of the applications that start from the various registry keys. It also allows you to disable these applications from automatically running.

TROUBLESHOOT DIRECTX WITH A BUILT-IN DIAGNOSTIC TOOL

The DirectX Diagnostic Tool is a troubleshooting utility that ships with Windows XP. This tool primarily helps administrators who are troubleshooting problems around DirectX.

To launch the DirectX Diagnostic Tool, type *dxdiag* in the Run prompt. Here's a look at the tabs that appear and a few of their features:

FIGURE 2. DXDiag Menu
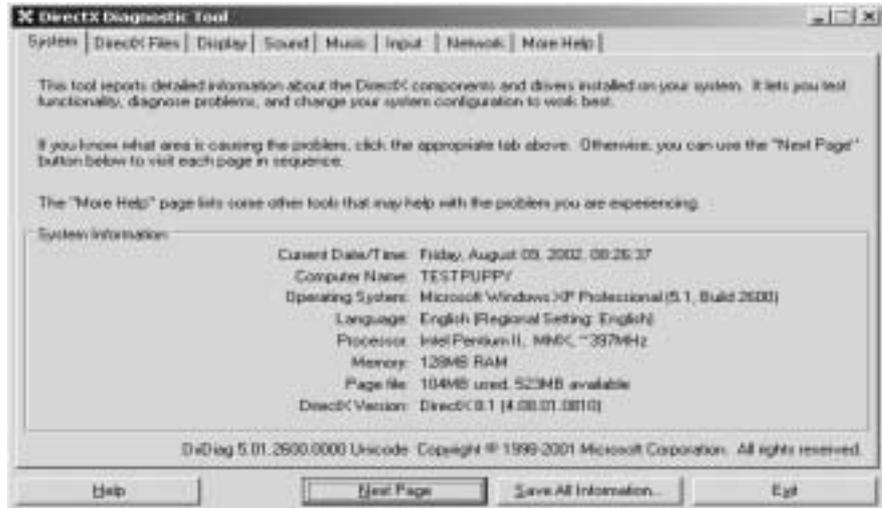
- System: This displays information about the system, such as the computer name, version of the operating system, and DirectX version.
- DirectX Files: This lists all of the DirectX files on the computer, plus their respective versions and dates.
- DX Media Files: This lists all of the DirectX media files on the computer, plus their respective versions and dates.
- DirectX Drivers: This lists all of the DirectX driver files on the computer, plus their respective versions and dates.
- Display: This provides information about current display settings. It also allows you to test DirectDraw and Direct3D.
- Sound: This provides information about current sound settings. It also allows you to test DirectSound.
- Music: This provides information about installed music ports and current Musical Instrument Digital Interface (MIDI) settings. It also allows you to test Direct-Music.
- Input: This lists the installed input devices and drivers.

Network: This lists the registered DirectPlay providers and applications that are installed on the computer. It also allows you to test DirectPlay.

REMOVE UNWANTED WINDOWS COMPONENTS

When you install Windows XP, the computer won't prompt you to select which applications you want to install with the operating system. By default, setup installs almost all applications. But if you don't use them all, and you don't want all those extra components cluttering up your system, you can safely remove them.

Removing Windows components is an easy process. Here's how to do it: Go to Control Panel and double-click Add/Remove Programs. Select Add/Remove Windows Components for a list of options. However, you won't see all the components installed on your system listed in those options.

To remove many of the components, you have to look for them. Go to the hidden %systemroot%\Inf folder and open the Sysoc.inf file. This file lists all the components you can remove.

FIGURE 3. Sysoc.inf

```
[Version]
Signature = "$Windows NT$"
DriverVer=07/01/2001,5.1.2600.0

[Components]
NtComponents=ntoc.dll,NtOcSetupProc,,4
WBEM=ocgen.dll,OcEntry,wbemoc.inf,hide,7
Display=desk.cpl,DisplayOcSetupProc,,7
Fax=fxsocm.dll,FaxOcmSetupProc,fxsocm.inf,,7
NetOC=netoc.dll,NetOcSetupProc,netoc.inf,,7
iis=iis.dll,OcEntry,iis.inf,,7
com=comsetup.dll,OcEntry,comnt5.inf,hide,7
dtc=msdtcstp.dll,OcEntry,dtcnt5.inf,hide,7
IndexSrv_System = setupqry.dll,IndexSrv,setupqry.inf,,7
TerminalServer=TsOc.dll, HydraOc, TsOc.inf,hide,2
msmq=msmqocm.dll,MsmqOcm,msmqocm.inf,,6
ims=imsinsnt.dll,OcEntry,ims.inf,,7
fp_extensions=fp40ext.dll,FrontPage4Extensions,fp40ext.inf,,7
AutoUpdate=ocgen.dll,OcEntry,au.inf,hide,7
msmsgs=msgrocm.dll,OcEntry,msmsgs.inf,hide,7
RootAutoUpdate=ocgen.dll,OcEntry,rootau.inf,,7
IEAccess=ocgen.dll,OcEntry,ieaccess.inf,,7


Games=ocgen.dll,OcEntry,games.inf,,7
AccessUtil=ocgen.dll,OcEntry,accessor.inf,,7
CommApps=ocgen.dll,OcEntry,communic.inf,HIDE,7
MultiM=ocgen.dll,OcEntry,multimed.inf,HIDE,7
AccessOpt=ocgen.dll,OcEntry,optional.inf,HIDE,7
Pinball=ocgen.dll,OcEntry,pinball.inf,HIDE,7
MSWordPad=ocgen.dll,OcEntry,wordpad.inf,HIDE,7
ZoneGames=zoneoc.dll,ZoneSetupProc,igames.inf,,7


[Global]
WindowTitle=%WindowTitle%
WindowTitle.StandAlone="*"
```

To view these components in the Add/Remove Windows Components dialog box, you must remove the word HIDE from each line. After you've made your changes, save the file and reopen the Add/Remove Programs dialog box. You should now see those additional components.

GET HELP WITH AN OLD USER INTERFACE

You're probably not familiar with Windows XP's Help and Support Center, a centralized help feature that's more than just ordinary help files. It offers product documentation, troubleshooting wizards and tools, and support from Microsoft. Users can also discuss their issues in a newsgroup or ask a friend for help through Remote Assistance.

But despite all the new features, many experienced administrators won't like the new user interface, which is more cumbersome to use. The help interface from Windows 2000 and Windows 9x was much easier to navigate and browse between different topics.

They're still there--you just have to look for them. Browse to the %systemroot%\help folder, where you'll find numerous files that have the.chm extensions. Double-click one of these files, and you'll see the help topic with the old user interface.

FIGURE 4. c:\windows\help

PERFORMANCE OPTIONS

Windows XP includes many functional improvements and visual features that do not directly add to or improve the functionality of the product. Examples of these features include the shadow behind the mouse cursor and menus, animated windows, and others.

These visual effects may look cool, but they don't actually increase a user's productivity. And, in some cases, they can be counterproductive. On many computers, these visual features cause negative side effects and considerably slow system performance. For example, a system may appear extremely slow while opening the Start menu or other program menus. This slowdown is typically caused by the graphic card and unoptimized drivers.

There are several ways to work around this problem. The first option is to check the manufacturer's Web site for updated drivers. If this doesn't help, it's best to either purchase a better graphic card or turn off the visual effects that slow the computer down.

To turn off the visual effects:

1. Open the Control Panel.
2. Double-click on the System icon.
3. Click Performance And Maintenance if using the Web view.
4. Click System on the next screen.
5. Open the Advanced tab in the System Properties dialog that appears.
6. Click the Settings button under the Performance section

FIGURE 5. System Panel

The Performance Options dialog will open, listing all the visual effects that can possibly slow down the system. Users can manually enable or disable individual effects or use one of the predefined settings.

Additional settings are located in the Display Properties dialog box. To view these settings:

1. Right-click on the desktop and select Properties.
2. Click the Effects button on the Appearance tab. A new dialog box with six additional visual settings will open.
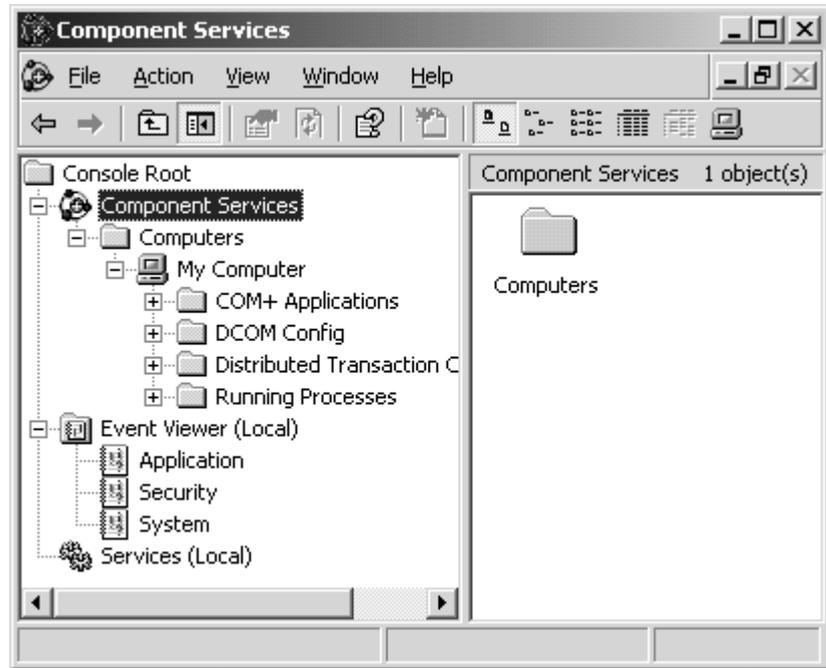
FIGURE 6. Display Properties
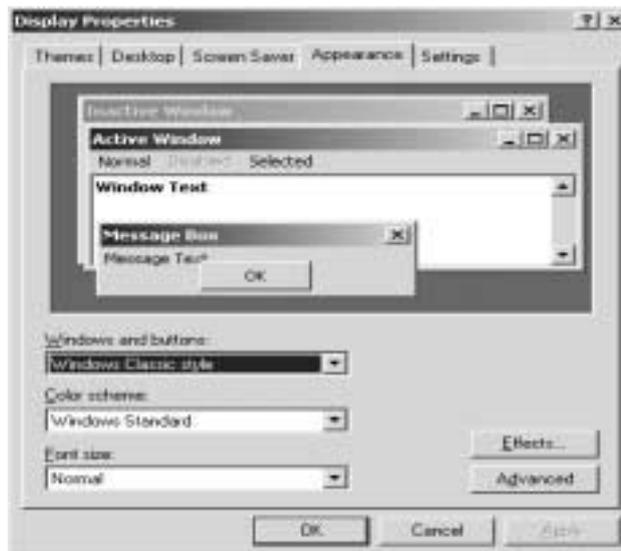
COMPONENT SERVICES   Component Services MMC is located in the Control Panel as part of the Administrator Tools icon group. This toolset packages three very useful resources:

1. Computers
2. Event Viewer
3. Services

FIGURE 7. **Component Services**

The Component Services administrative tool is designed both for system administrators and for application developers. Developers, for example, can configure routine component and application behaviour, such as participation in transactions and object pooling. For conceptual information and procedures on tasks mainly reserved for developers using the Component Services administrative tool, in addition to reference information about the COM+ administrative objects and programming interfaces, please see the topics under "COM+ (Component Services)" in the Microsoft Platform SDK.

Knowing how the user has modified their applications can allow you the opportunity to understand how their modified applications affect hardware and its configuration.

DEVICE MANAGER   The Device Manager (found in the Computer Manager MMC) works much the same as it has in Windows 95/98/2000. If there is a problem with a device you will see a yellow caution sign or a stop sign associated with the hardware in question. If there is no caution or stop sign associated with any devices we can assume that Windows XP sees no driver or hardware failures.

FIGURE 8. **Device Manager**
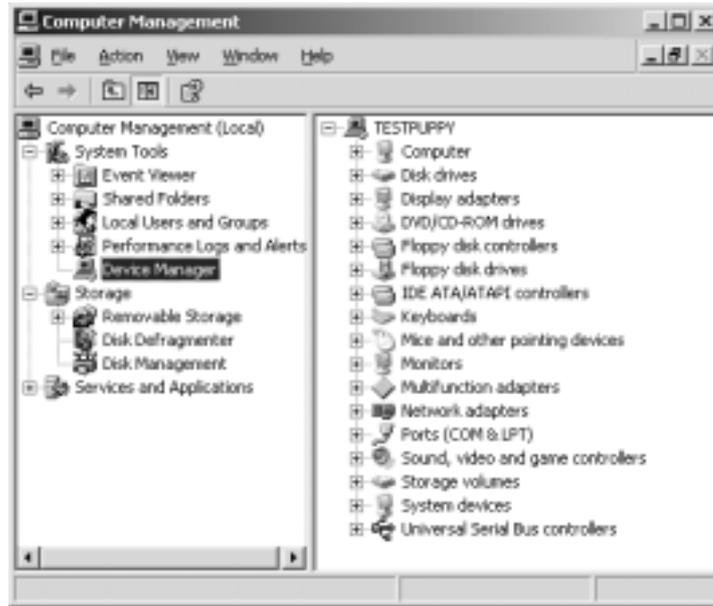
SUMMARY

Windows XP has many new tools for debugging hardware problems. Many times hardware problems are caused by improper software configuration and/or driver malfunctions. It is important to verify quickly which is the case. Always look for the obvious and work your way to the least obvious. Check everything physical to make sure all cables are plugged in properly and lights go on when they should. make sure that the system sees all devices properly and when they don't record what problems are logged by the system and go to the Microsoft MSDN site for resolution.