
System Properties, Startup, and Shutdown

1.0 Introduction

Starting up and shutting down a PC should be easy. Press a button and it turns on; click a few buttons and it turns off. The same holds true for your PC's system properties. There should be nothing complicated about doing things such as setting the system time or giving your computer a name.

But in computing, as in life, things are not always simple. And so things can get difficult and complicated. What if you sometimes want to start up your PC with debugging turned on, for example, or using safe mode, or using an entirely different operating system? What if you want to hunt down and kill programs and services that cause system conflicts? What if you want to change your boot screen or customize your system sounds?

You'll find recipes for doing all that and more in this chapter, so that you can take control of startup, shutdown, and setting your system's properties. For information about troubleshooting startup problems, turn to Chapter 20, Crashes and Errors.

1.1 Automatically Setting the Time on a Domain-Connected PC

Problem

You're on a PC connected to a domain, and you want the PC to have its clock set to the proper time automatically, without your intervention. At the Run box, type `services.msc` and press Enter. This will run the services management module.

1. Scroll down to the Windows Time entry and double-click on it.
3. From the Startup type drop-down box, choose Automatic, as shown in Figure 6-1. Click OK. From now on, your PC will automatically synchronize its time with the domain controller every time the PC starts. (Note: This setting is turned on by default, but there is a chance that it has been turned off on your system, so it's a good idea to double-check.)

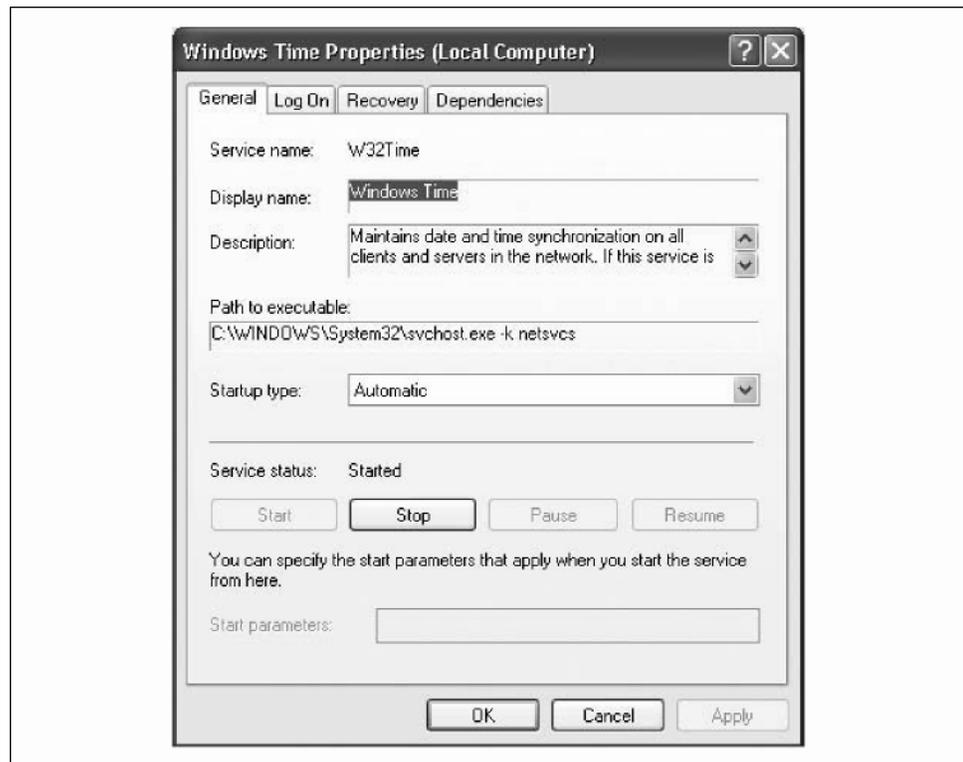


Figure 1-1. If you're connected to a domain, the Windows Time service will automatically connect to a domain controller to synchronize its clock

Using a command-line interface

At the command line, type `net start w32time` and press Enter. That will start the Windows Time service. To stop the service, at the command line type `net stop w32time` and press Enter. That will stop the Windows Time service. When you use the command line to start the Windows Time service, the service only runs for that single session. If you want the service to start every time you start XP you can use the service's management module, or you can use the `sc.exe` utility (run `sc /config` for more information).

Discussion

Only computers running Windows XP Professional can connect to domains, so XP Professional has Windows Time service, while the XP Home Edition does not. By default, the Windows Time service runs automatically on Windows XP Professional computers.

Time synchronization takes place with the Windows Time service during system startup. During startup, the Net Logon service looks for a domain controller that can synchronize time with the PC. It follows the Active Directory hierarchy. When the service finds a domain controller, it sends a request for time and waits for a reply. The communication is an exchange of SNTP packets that calculates the time offset and the roundtrip delay between the two computers.

You can also use the Registry to synchronize a PC's time with a domain controller on startup. Open the Registry Editor, and go to the key `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters`. Create a `REG_SZ` value called `Type` and give it the value `Nt5DS`. That will tell the computer to synchronize its time with a domain controller on startup. If you give it the value `NoSync`, it will tell the computer not to synchronize its time with a domain controller.

See Also

For more details about using the Windows Time service, see http://www.microsoft.com/technet/prodtechnol/winxppro/maintain/xpmanaged/2_7_xpwtis.mspx. For more information about using the Registry and the Windows Time service, see <http://www.winguides.com/registry/display.php/1118>.

1.2 Automatically Setting the Time on a PC Not Connected to a Domain

Problem

You're on a PC that is not connected to a domain, and you want the PC to automatically have its clock set to the proper time without your intervention.

1. Double-click the time on the right side of the Taskbar.
2. From the Date and Time Properties dialog box that appears, click the Internet Time tab.
3. Check the box next to Automatically synchronize with an Internet time server (Figure 6-2). You can choose from a list of servers on the Server drop-down box. To synchronize the time immediately, click Update Now.

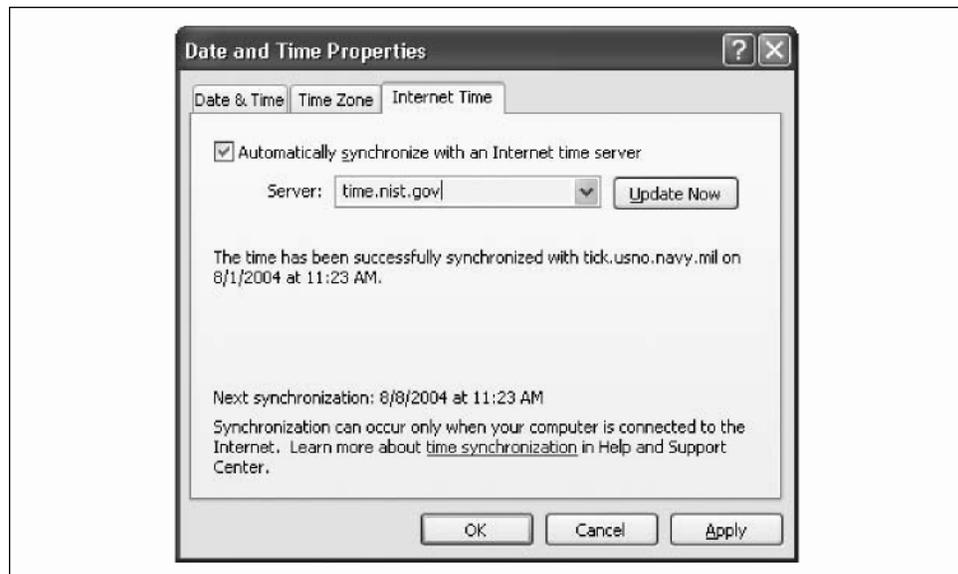


Figure 1-2. XP includes the built-in ability to automatically synchronize your clock with an Internet time server

4. Click OK. Your PC will now synchronize with a time server once a week.

Using the Registry

The default amount of time for synchronizing with a time server is once a week. But you can change that schedule to any you want, using the Registry. Open the Registry Editor, and go to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpClient\SpecialPollInterval. Open SpecialPollInterval by double-clicking it, then select Decimal. For the value data, give it the interval, in seconds, that you want your time to be automatically updated. The default is 604,800, which is the number of seconds in a week. There are 86,400 seconds in a day, so if

you want your time to synchronized daily, enter that number. Click OK and then exit the Registry.

Using downloadable software

There are many pieces of software available that make it easier to automatically synchronize the time, or give you extra options for time synchronization. A very good free one is SymmTime, which runs as a separate applet. In addition to automatically synchronizing your PC time with Internet time servers, it lets you create separate clocks that each display the time in different parts of the world. It's particularly useful if you do business across time zones or countries. You can download and use it for free from <http://www.ntp-systems.com/symmtime.asp>.

1.3 Changing the System Name

Problem

You want to change the name of your computer, or a computer on a domain on which you have administrative privileges.

Solution

Using a graphical user interface

1. Right-click My Computer, choose Properties, and click the Computer Name tab.
 2. Click the Change button.
 3. In the Computer Name Changes dialog box, shown in Figure 6-3, type in your new computer name in the Computer Name box. Click OK and then click OK again.
-



Figure 1-3. The Computer Name Changes dialog box

You can only use this technique on your own computer, not on another computer in a domain to which you're attached.

Using a command-line interface

If you want to rename a computer that is a member of an Active Directory domain, you can use the `netdom` tool. You'll be able to rename not just the computer you're attached to, but others as well, as long as you have administrative permission to do so on the PC. You can do this only on Windows XP Professional, not on Home Edition.

To change a computer's name, do the following:

1. Install the Windows XP Support Tools from the *Support\Tools* folder on the Windows XP Professional CD.
2. At the command line, use the `netdom` command line tool to rename a computer, using this syntax:

```
> netdom renamecomputer machine /newname:new_computename /userd:domainname\  
administrator_id /passwordd:* /usero: local_admin /passwordo:* /reboot : seconds  
before automatic reboot
```

Following is an explanation of the syntax:

Machine

The current name of the computer that you want to rename.

New_computername

The new name that you want to give to the computer.

Domainname\administrator_id

The NetBIOS domain name and the administrator identification (ID) of the user account that has administrative permissions to the computer that you want to rename.

Local_admin

A user who has local administrative permissions. This can be the same account that you specified for */userd*.

The asterisk symbol ()*

Used for the */passwordd:* and */passwordo:* parameters. It specifies that the password should be typed with hidden characters when the command is submitted, for security purposes.

Seconds before automatic reboot, in seconds

The amount of time, in seconds, before the computer restarts after it is renamed. If you don't specify this parameter, the computer will have to be restarted manually.

/userd

The user account used to make the connection with the domain specified by the */Domain* argument.

/usero

The user account for making the connection with the trusting domain.

1.4 Create a Multiboot Menu

Problem

You want to create a multiboot menu that will allow you choose from several different customized versions of Windows—for example, one without a boot screen, one that will automatically create a log about the boot process, and so on.

Solution

Using a graphical user interface

The *boot.ini* file, a plain text file found in your root [C:\](#) folder, determines how XP starts up and controls a variety of startup options, including whether to use the XP splash screen when XP starts, whether to create a log file about the boot process, and so on.

You might not be able to see *boot.ini*, because it's a system file, and if you can see it, you might not be able to edit it, because it's a read-only file. To make it visible, launch Windows Explorer, and choose View → Tools → Folder Options → View and select the radio button "Show Hidden Files and Folders." To make it a file you can edit, right-click on it in Windows Explorer, choose Properties, uncheck the Read-Only box, and click on OK.

If you have only one operating system on your PC (XP), *boot.ini* will look something like this:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(2)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(2)\WINDOWS="Microsoft Windows XP Home Edition"
/fastdetect
```

In this instance, your PC will boot straight into XP; no menu will be displayed to give you any other startup choices.

If you have more than one operating system on your PC, in the following instance XP Home Edition and Windows 2000 Professional, Windows *boot.ini* would look like this:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1 )\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1 )\WINDOWS="Microsoft Windows XP Home Edition"
/fastdetect
multi(0)disk(0)rdisk(0)partition(2)\WINNT="Windows 2000 Professional" /fastdetect
```

In this instance, when you boot your PC, a menu would be displayed, allowing you to choose between booting into XP Home Edition or Windows 2000 Professional. Even if you have only one version of XP installed, though, you can create a multiboot menu that will let you choose to load XP with different parameters by editing the *boot.ini* file. For example, for menu choices, you might have your normal operating

system; the operating system loading in a mode that lets you trace any startup problems; and the operating system loading in safe mode. To do it, create separate entries for each new operating system choice. For example, for the version of the operating system that traces potential startup problems, you could create this entry:

```
multi(0)disk(0)rdisk(0)partition(1) \WINDOWS="Trace Problems XP Home Edition"
/fastdetect /bootlog /sos
```

This entry creates a startup log and displays information about the drivers and other operating system information as it loads.

For the version of the operating system that loads in Safe Mode but that still allows networking, you could create this entry:

```
multi(0)disk(0)rdisk(0)partition(1) \WI NDOWS="Safe Start XP Home Edition" /fastdetect
/safeboot : network
```

So the *boot.ini* file would look like this, assuming that you want the menu to display for 30 seconds, and you want normal XP startup to be the default:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1) \WI NDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1) \WINDOWS="Microsoft Windows XP Home Edition"
/fastdetect
multi(0)disk(0)rdisk(0)partition(1) \WINDOWS="Trace Problems XP Home Edition"
/fastdetect /bootlog /sos
multi(0)disk(0)rdisk(0)partition(1) \WINDOWS="Safe Start XP Home Edition" /fastdetect
/safeboot : network
```

To edit the file, open it with a text editor such as Notepad. Following is a typical *boot.ini* file for a PC that has two operating systems installed on it—Windows XP Home Edition and Windows Me:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1) \WI NDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1) \WINDOWS="Microsoft Windows XP Home Edition"
/fastdetect
multi(0)disk(0)rdisk(0)partition(2) \WI NNT="Windows 2000 Professional" /fastdetect
```

As you can see, there are two sections in the file: `[boot loader]` and `[operating systems]`. To customize your menu and startup options, edit the entries in each section. Before editing *boot.ini*, make a copy of it and save it under a different name (such as *boot.ini.old*), so that you can revert to it if you cause problems when you edit the file.

Following are details about how to edit the entries in each section:

`[boot loader]`

This section controls how the boot process works; it specifies the default operating system, and how long a user has to make a selection from a boot menu if a boot menu has been enabled. The `timeOut` value specifies, in seconds, how long to display the menu and wait for a selection before loading the default operating system; if you want a delay of 15 seconds, for example, enter 15 for the value. Use a value of 0 if you want the default operating system to immediately boot. If

you want the menu to be displayed indefinitely and stay onscreen until a selection is made, use a value of `-1`. The `default` value specifies which entry in the `[operating system]` section is the default operating system. (It is used even if there is only one operating system in the `[operating system]` section.) To change the default operating system, edit the setting, in our example, to `default=multi(0)disk(0)rdisk(0)partition (2)\WI NNT`.

So in our example, if you were going to change the menu settings so that the screen appeared for 10 seconds before loading the default operating system, and

the default operating system is Windows 2000 Professional, the section would read:

```
[boot loader]
timeout=10
default=multi(0)disk(0)rdisk(0)partition(2)\WINNT
```

[operating system]

This section specifies which operating systems are present on the computer, and detailed options for each one. XP uses the Advanced RISC Computing (ARC) path to specify the location of the boot partition. In our example, the ARC path is:

```
multi(0)disk(0)rdisk(0)partition(2)\WINDOWS
```

The first parameter, which identifies the disk controller, should be 0. The second parameter, the disk parameter, should also be 0. The rdisk parameter specifies the disk number on the controller that has the boot partition. The numbers start at 0. So if you have three hard disks installed, and the second hard disk has the boot partition, the setting would be rdisk(1). The partition parameter identifies the partition number of the boot partition. Partitions start with the number 1. The final section, which in our example is \WINDOWS, specifies the path to the folder where the operating system is installed.

To the right of the ARC path, in the example, is "Microsoft Windows XP Home Edition" /fastdetect. The words within quotes are what will appear on the boot menu next to the entry. You can change this to whatever you wish to customize the text on the menu; if you'd like, you can call it "My Favorite Operating System" or anything else you want. The /fastdetect switch disables the detection of serial and parallel devices, and so allows for faster booting. (The detection of these devices isn't normally required in XP, because the functions are performed by Plug and Play drivers, and so as a general rule, it's a good idea to use the /fastdetect switch. The /fastdetect switch is only one of many that can be used in the *boot.ini* file to customize how the operating system loads. Table 6-1 lists others you can use as well.

Table 6-1. Switches for *boot.ini*

Switch	What it does
/BASEVIDEO	Starts XP using the standard VGA driver. It's of most use if you can't boot normally because of a video driver problem.
/BOOTLOG	Logs information about the boot process to the file <i>ntbtlog.txt</i> in the C:\Windows folder.
/CRASHDEBUG	Loads the debugger at boot, but the debugger remains inactive unless a crash occurs.
/DEBUG	Loads the debugger at boot and runs it.
/FASTDETECT	Disables the detection of serial and parallel devices.
MAXMEM : <i>n</i>	Specifies the maximum amount of RAM that XP can use.
/NOGUIBOOT	Does not allow the XP splash screen to load during boot.

/NODEBUG Stops the debugger from loading.

/SAFEBOOT:
switch Forces XP to boot into the safe mode specified by the *switch* parameter, which can be **minimal**, **network**, or **minimal(alternate shell)**. In minimal safe mode, only the minimum set of drivers are loaded necessary to start XP. In network-safe mode, the minimum set of drivers plus networking drivers are loaded. In **minimal (alternate shell)** the minimum set of drivers are loaded and XP boots into the command prompt.

/SOS Displays the name of each driver as it loads and gives descriptions of what is occurring during the boot process. It also offers other information, including the XP build number, the service pack number, the number of processors on the system, and the amount of installed memory.

When you've finished editing the *boot.ini* file, save it. The next time you start your computer, its settings will go into effect.

So, in our example, if we wanted the menu to appear for 45 seconds, the default operating system to be Windows 2000, and the XP splash screen to be turned off when we choose to load XP, the *boot.ini* file would look like this:

```
[boot loader]
timeout=45
default=multi(0)disk(0)rdisk(0)partition(2)\WINNT
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Home Edition" /
fastdetect /noguiboot
multi(0)disk(0)rdisk(0)partition(2)\WI NNT="Windows 2000 Professional" /fastdetect
```

1.5 Using Virtual PC to Run Multiple Operating Systems Simultaneously

Problem

You want to run multiple operating systems simultaneously on the same computer.

Solution

Using a graphical user interface

Microsoft's Virtual PC, available for between \$100 and \$120, will let you run multiple operating systems on the same computer; it can run all versions of Windows since Windows 95, as well as Linux, IBM OS/2, and others. This recipe cannot go into a full description of the entire configuration, installation, and use of Virtual PC, but here are the basics of how to install and use it:

1. Install Virtual PC from the CD. The first time you run the program, the New Virtual Machine Wizard will start. For each extra operating system you want to install, you need a virtual machine, so follow the wizard's instructions for creating a virtual machine.

Before installing Virtual PC, make sure that you have enough physical RAM to run multiple operating systems on your PC. Microsoft offers these guidelines: Figure that you need 128MB for XP (either Professional or Home Edition) as a baseline, and then add the physical memory requirements of each additional operating system you want to add. Microsoft claims that Windows 95 requires 32MB; Windows 98 64MB; Windows ME 96MB; Windows NT 4 64MB; and Windows 2000 Professional 96MB. As a practical matter, though, those requirements are too slim. You should have at least 512MB of memory to run Virtual PC, and more than that if you plan to run more than two operating systems simultaneously.

2. If you aren't sure what operating system you plan to install on the virtual machine you create, choose "Use default settings to create a virtual machine" from the wizard. This will create a standard virtual machine that you can later customize, depending on the operating system you plan to install on the virtual machine.
 3. If you know what operating system you plan to install on the virtual machine you create, choose "Create a virtual machine" from the wizard. That will let you customize the machine for the operating system. When you are prompted for the operating system you plan to install, choose it from the drop-down list.
-

4. Once you've installed a virtual machine and want to install a new operating system, run Virtual PC. The Virtual PC Console will display. Select the virtual machine onto which you want to install an operating system and choose Action → Start.
 5. When you see the prompt to reboot and select a boot device or insert boot media, insert the startup or setup disk of the new operating system into the appropriate drive, and follow the instructions for installing the new operating system.
 6. When you want to run the new operating system simultaneously with XP, start Virtual PC, and from the Virtual PC console, double-click the virtual machine that has the operating system you want to run in addition to XP.
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1.6 Performing a Clean Boot

Problem

You want to perform a clean boot so that you can troubleshoot system problems and error messages when you cannot determine the cause of the problems. You then want to be able to track down the source of the problems.

Using a graphical user interface

1. Log on as an administrator.
2. In the Start menu or at the command line, type `msconfig` and press Enter. The System Configuration Utility runs.
3. On the General tab, click Selective Startup, and clear the Process System.ini File, Process Win.ini File, and Load Startup Items checkboxes.
You cannot clear the Use Original Boot.ini checkbox.
4. On the Services tab, select the Hide All Microsoft Services checkbox, and then click Disable All.
5. Click OK, and then click Restart. This will restart your computer. You'll now be able to see whether the symptoms still occur.
6. When Windows restarts, examine the General tab of the System Configuration Utility to see whether the checkboxes you've deselected are still cleared. If none are checked, you've done a clean boot. If your problems do not recur, you can now try to track down the source of the problem.
7. Run the System Configuration Utility again, and on the General tab check the box next to Process System.ini File, click OK, and then click Restart to restart XP. If the problem continues, the issue is with an entry in your *system.ini* file. If the problem does not recur, repeat this step for the Process Win.ini File, Load Startup Items, and Load System Services checkboxes until the problem occurs again. After the problem occurs, the last item that you selected is the item where the issue is occurring.

1.7 Shutting Down Unnecessary Programs and Services that Run on Startup

Problem

You want to stop unnecessary programs and services from running on startup, so that you can speed up the performance of your PC.

Solution

Stopping programs from running on startup

Stopping programs from running at startup is particularly difficult, because there is no single place you can go to stop them all. Some run because they're in the Startup folder, others because of Registry settings, and so on. So you'll have to combine several techniques to stop them from starting up automatically when you turn on or reboot your PC.

Using a graphical user interface

There are several techniques you can use with a graphical user interface to stop programs from running on startup. Again, you'll have to combine several, and not rely on a single one.

Clean out the Startup and Scheduled Tasks folders. The Startup folder contains shortcuts that each run a program whenever you start or reboot your PC, so you can halt a program from running on startup by deleting shortcuts found in it.

The Startup folder can be found in [C:\Documents and Settings\< User Name>\Start Menu\Programs\Startup](#), where <User Name> is your Windows logon name. Delete the shortcuts of any programs you don't want to run on startup. As with any shortcuts, when you delete them, you're only deleting the shortcut, not the program itself. (You can also clear out the startup items by going to Start → Programs → Startup and right-clicking on items you want to remove.) Do the same for [C:\Documents and Settings\All Users\Start Menu\Programs\Startup](#) and [C:\Documents and Settings\Default User\Start Menu\Programs\Startup](#).

Next, clean out your Scheduled Tasks folder. Go to [C:\WINDOWS\Tasks](#), and delete the shortcuts of any programs that you don't want to automatically run on a schedule.

You can bypass all the programs in your Startup folder on an as-needed basis. To stop XP from loading any programs in the Startup folder, hold down the Shift key during boot-up. No programs in the Startup folder will be run, but the items will still remain there, so that they will start up as they would normally the next time you boot.

The System Configuration Utility. Deleting shortcuts out of the Startup and Schedule Tasks folders will stop many programs from running at startup, but it won't kill all of them. Probably the best all-around tool for keeping programs from running is the System Configuration Utility, shown in Figure 6-4. To run it, type `msconfig` at a command prompt and press Enter.

To stop a program from running at startup, click the Startup tab and uncheck the box next to it. It can sometimes be difficult to understand what programs are listed on the Startup tab. Some, such as America Online, are clearly labeled. But often, you'll see a phrase or collection of letters, such as *ctfmon*. In this case, *ctfmoms.exe* is a program that activates Alternative User Input Text Input Processor (TIP) and the Microsoft Office Language Bar, which provides for text input services such as speech recognition and handwriting recognition. If you don't need those services, it's a good

idea to stop this program from running on startup.

To get more information about a listing, expand the width of the Command column near the top of the Startup tab. Expand it enough and you'll see the startup command that the program issues, including its location, such as [C:\WINDOWS\](#)

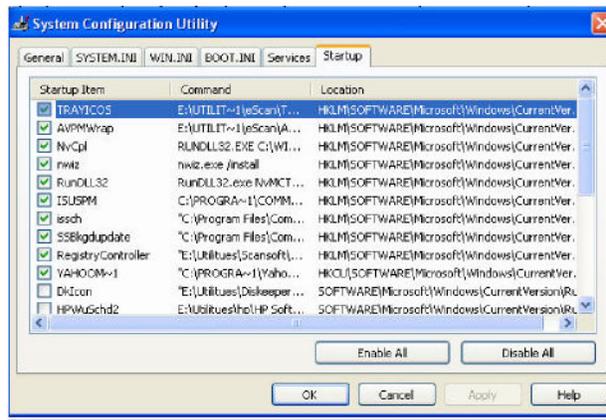


Figure 1-4. The Startup tab of the System Configuration Utility is the best place to halt programs from running on startup

System32\ctfmon.exe. The directory location should be another hint to help you know the name of the program.

That won't always help, though. To get more information about any particular program, do a Google search on its filename, and most of the time you'll get useful information about what it is, what it does, and whether you need it. You can also go to the WinTasks Process Library at <http://www.liutilities.com/products/wintaskspro/processlibrary/>, which lists many programs that run on startup, and details what they are and whether they're necessary.

When stopping programs from running at startup, it's best to stop them one at a time rather than in groups. You want to make sure that you're not causing any system problems by stopping them. So stop one and restart your PC. If your PC runs fine, then stop another program and restart. Continue doing this until you've cleared all the programs you don't want to run automatically.

Each time you uncheck a box and restart your PC, you'll get a warning, telling you that you've used the System Configuration Utility to disable a program from starting automatically. If you don't want to see that warning appear, disable it by checking in the proper box in the dialog.

After you've used the System Configuration Utility to identify programs that run on startup, you may want to try disabling them from with the programs themselves. So run each program that starts automatically, and see if you can find a setting that will allow you to halt it from running on startup.

Using the Registry

The System Configuration Utility won't necessarily let you identify and kill all programs that run on startup, but you can use the Registry to find others. Open the Registry Editor, and go to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run. Listed in the right pane will be some of the programs that automatically run at startup. The Data field tells you the path and name of the executable so that you can determine what each program is. Right-click on any program you

don't want to run and choose Delete. That will kill any programs that run specific to your logon. To kill programs that run for every user of the system, go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run and follow the same instructions for deleting other files you don't want to run at startup. Again, for help deciding which to kill and which to run, try Google and <http://www.liutilities.com/products/wintaskspro/processlibrary>.

Disable services that run at startup

Constantly running in the background of XP are services—processes that help the operating system run or that provide support to applications. Many of these services launch automatically at startup. And while you need many of them, there are also many that aren't required and that can slow your system down while they run in the background. Here's how to stop unnecessary ones from running.

Using a graphical user interface

There are several techniques you can use with a graphical user interface to stop services from running on startup. You should combine several, and not rely on a single one.

The System Configuration Utility. You can disable services at startup by using the System Configuration Utility, in a similar way that you halt programs from running at startup, except that you use the Services tab instead of the Startup tab. Other than that, you use the utility the same, as outlined previously in this recipe.

The Services Computer Management Console. When you disable a service through System Configuration Utility, there's often no way to know what it does. So an even better way of disabling services at startup is via the Services Computer Management Console, shown in Figure 6-5. Run it by typing `services.msc` at the command prompt. The Services Computer Management Console includes a description of all services, so that you can know ahead of time whether it's one you want to turn off. It also lets you pause the service, so that you can test out your machine with the service off, to see whether it's needed or not.

After you run the console, click the Extended tab. This view will show you a description of each service in the left-hand pane when you highlight the service. The Startup

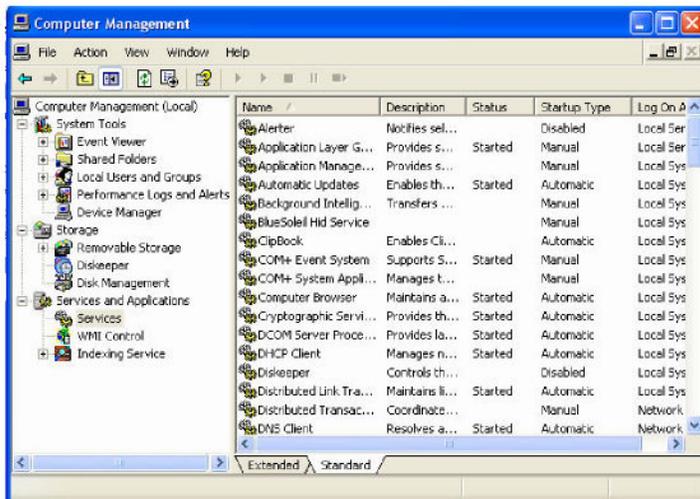


Figure 1-5. The Services Computer Management Console is a better tool than the System Configuration Utility for halting services that run on startup, because it includes descriptions of each service and an easy way to stop them from running on startup

Type column shows you which services launch on startup—any services with an Automatic in that column launch on startup. Click that column to sort together all the services that automatically launch on startup. Then highlight each of those services, and read the descriptions.

When you find a service you want to disable, right-click it and choose Properties. In the Properties dialog box that appears, chose Manual from the Startup type drop-down list. The service won't start automatically from now on, but you can start it manually via the console. If you want the service disabled so that it can't be run, choose Disabled. To test the effects of turning off the service, turn off any services that you don't want to run by clicking "Stop the service" in the left pane, or by right-clicking on the service and choosing Stop.

Table 1-2 lists common services you might want to halt from running at startup.

Table 1-2. Services to consider turning off

Service	What it does
Portable Media Serial Number	Retrieves the serial number of a portable music player attached to your PC.
Task Scheduler	Schedules unattended tasks to be run. If you don't schedule any unattended tasks, turn it off.
Uninterruptible Power Supply	Manages an Uninterruptible Power Supply (U PS) connected to your PC.

Automatic Updates
<http://windowsupdate.microsoft.com/>

Automatically checks for Windows updates. (You can check manually by going to

Telnet (Service available on XP Pro only)
not be found on all versions of XP Pro.)

Allows a remote user to log in to your computer and run programs. (Note: This will

Wireless Zero Configuration Service

Automatically configures a WiFi (802.11) network card. Only disable this if you're not using a WiFi network card.

1.8 Speeding Up Shutdown Time

Problem

Windows XP takes what seems an inordinate amount of time to shut down, and you want to speed up your shutdown time.

Solution

If shutting down XP takes what seems to be an inordinate amount of time, there are steps you can take to speed up the shutdown process.

Using a graphical user interface

Don't have XP clear your paging file at shutdown

For security reasons, you can have XP clear your paging file of its contents whenever you shut down. But if extreme security isn't a high priority, doing this can significantly slow shutdown times. To shut down XP without clearing your page file, run the Registry Editor and go to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management. Change the value of ClearPageFileAtShutdown to 0. Close the Registry and restart your computer. Now, whenever you turn off XP, the paging file won't be cleared, and you should be able to shut down more quickly.

Turn off unnecessary services

Services take time to shut down, so the fewer you run, the faster you can shut down. Run the Services snap-in to the Microsoft Management Console (MMC) by typing services.msc at a command prompt or the run box, and use it to see what services are running and to disable any unnecessary ones from running on startup. Consider shutting down the Nvidia driver helper service, the Indexing service, and the Machine Debug Manager. And if you are using a computer that doesn't use wireless networking, turn off Zero Wireless Configuration.

1.9 Changing Your Boot Screen

Problem

You want to change the screen that you see when XP boots.

Solution

Using downloadable software

The best tool for changing your startup screen is BootXP, shareware available from <http://www.bootxp.net>. (You can try it out for free, but if you continue to use it, there's a \$7.95 registration fee.) To use it:

1. Download, install, and run the program. When you first run it, it asks where you want to store your boot screens. The default is [C:\WINDOWS\Resources\Bootscreens](#). Unless you can think of a better place to keep them, use this folder. The software will create it for you.
-

2. Select the Your Boot Screens tab. If you have any graphics or boot screens in [C:\WINDOWS\Resources\Bootscreens](#), the program displays a list of them.
3. If you don't have any boot screens stored, click the Get Boot Screens button to have BootXP search several web sites that have downloadable boot screens. (If you find any you like, download them to the folder where you've chosen to store your boot screens, such as [C:\Windows\Resources\Bootscreens.](#))

You can also create boot screens from an existing graphic. Put the graphic in [C:\Windows\Resources\Bootscreens](#), so that, when you open them in BootXP and click Convert To Boot Screen, BootXP will convert them to the format Windows XP requires for boot screens: 640 X 480 pixels and 16-color. Once you have them in the right format, use BootXP to select any as your boot screen.

4. To choose a new boot screen, click the file in the list, and click OK. The program shows the graphic you've chosen on the left side of the screen, and how it looks as a boot screen on the right.
5. To confirm this is the boot screen you want, click the "Set As Your Boot Screen" button.
6. The next time you start XP, your new boot screen will be used.

1.10 Personalizing Your PC's Sounds

Problem

You want to personalize the sounds your PC makes for various system events, including recording new sounds of your own.

Solution

Using a graphical user interface

1. If a microphone didn't come with your PC, buy one and plug it into the microphone jack.
2. Open the Sound Recorder (Figure 6-6) by choosing Start - All Programs - Accessories - Sound Recorder, or typing *mmsys.cpl* at the Run box or command line and pressing Enter.
3. Click the Record button, record your sound clip, and when you're done, click the Stop button. When you record, speak in a normal tone of voice, about six inches from the microphone. Keep the clip short, because you don't want sounds to last too long. A few seconds is ideal.
4. Choose File - Save and save the file to a folder. Note the location and the filename (it ends in *.wav*). Exit the Sound Recorder.
5. Now that you've recorded the sound, you need to tell XP to use it. Choose Start - Control Panel - Sounds, Speech, and Audio Devices - Sounds and Audio Devices. On the Sounds and Audio Devices Properties dialog box that appears (Figure 6-7), click the Sounds tab. In the Program events list, select the event you want to associate with your sound.
6. Click Browse and locate the *.wav* file you just recorded (or the existing file you want to use). Select it and click OK. When the Sounds and Audio Devices Properties dialog box appears again, click OK.
7. From now on, Windows will use your sound with the associated event.

1.11 Creating Power Schemes

Problem

You want to create different power schemes for your laptop—for example, one when it's plugged in at home, and another for maximum battery life when you're on an airplane on a cross-country trip.

Solution

Using a graphical user interface

1. Choose Control Panel → Performance and Maintenance → Power Options. The Power Options Properties dialog box appears.
2. Click the Power Schemes tab. This tab handles the most important power functions. It lets you customize how your laptop uses power when plugged in and when it runs on batteries. So you might have the laptop never turn off the power to the LCD when it's plugged in, for example, and have it shut off the power to the LCD after 15 minutes when it runs on power.
3. To edit an existing scheme, choose your options from the drop-down boxes and click OK. For each scheme, you can choose options for when your laptop is running on batteries, and when it's plugged in. You choose when your system should turn off the monitor and the keyboard, a specified time of inactivity. You also choose when your laptop should go into system standby. When your laptop goes into system standby, it goes into a very low power state, using only a few watts of power, just enough to retain the contents of RAM. Power is shut off to the hard drive, the LCD, the fan, and the CPU, so that it appears that the laptop is powered off. When you've made your choices, click OK.
4. To create an entirely new scheme, edit an existing scheme, choose Save As from the dialog box, and save it with a new name.
5. To use a power scheme, come back to the Power Options dialog box, choose the scheme you want to use from the drop-down list, and click OK.

Using system standby

If you choose to use system standby, you can configure how it works by clicking on the Advanced tab of the Power Options Properties dialog box. It lets you decide whether to put the system into standby if you close the lid of the laptop, what to do when you press the laptop's power button, and what to do when you press the laptop's sleep button. Additionally, if you're worried about security, it lets you require that a password be used in order to wake up the laptop from standby. And it can put an icon that reports about your power on the Taskbar.

Setting power alarms

You can have your laptop alert you or take an action when it has little power left. To set alerts, click on the Alarms tab, and customize the settings for when to alert you—at what percent of battery life is left. There are two settings, one for lower battery alarm and one for a critical battery alarm. You can have the system alert you via text, via an audible alarm, or have it automatically go into standby or shut down. You can also have it automatically run a program when the batter reaches a certain level.

See Also

For more information about managing power on a laptop, see http://www.microsoft.com/resources/documentation/windows/xp/all/p_rddocs/en-us/pwrmn_choose_power_scheme.msp.

1.12 Extending Battery Life on a Laptop

Problem

You want to extend the battery life of your laptop so that you can use it longer between recharges, for example on a cross-country plane flight.

Solution

Using a graphical user interface

- If you have a wireless network adapter and you're not using it, turn it off by right-clicking on its icon in the Notification Area and choosing Disable. Wireless and wired adapters can use a substantial amount of power—disabling yours could save you up to 20 minutes of battery life. If the wireless network adapter isn't built into your laptop but instead is a PC card, take the PC card out of the laptop.
- Lower the backlighting on your screen. Your screen takes up a substantial amount of electricity, and it most likely doesn't need to be lit up to its brightest level. Check your system documentation for how to change the lighting level.
- Use the right power scheme. XP includes a number of preset power schemes that you can use for various purposes. The schemes differ according to how long it takes for XP to shut off power to the monitor and hard disk when there is no system activity, or when the laptop should go into system standby. In system standby, power is cut to the hardware components you're not using, such as your monitor and your hard drive, but power is still supplied to your computer's memory so you don't lose your work. Get to the power schemes by choosing Control Panel → Performance and Maintenance → Power Options. For maximum battery life, choose Max Battery from the Power schemes drop-down list. Low Power Mode and Portable/Laptop are also good choices, although they don't preserve as much power as Max Battery. After you have selected your power scheme, click OK.
- Remove unused PCMCIA cards from your laptop, because they can use substantial amounts of power.
- Disconnect external drives, especially those that are USB-powered. External drives get power from your laptop and can be electricity hogs.
- Increase your RAM and decrease your swap file space to limit disk accesses. The fewer times you access your hard disk, the less power you'll use.
- Disable sounds. Each time a `.wav` file plays, you're using up juice unnecessarily.

1.13 Changing the Location of Your Startup Folders

Problem

You want to change the location of your startup folder to another drive or to another folder.

Solution

Using the Registry

You can turn any folder you want into the folder whose contents will be run on startup. To change the location of the current user's Startup folder, run the Registry Editor and then:

1. Go to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\User Shell Folders\Startup.
2. The string value is %USERPROFILE%\Start Menu\Programs\Startup. %USERPROFILE% refers to *C:\Documents and Settings\User* where *User* is the current user. Edit the string value to any folder on your hard disk. It doesn't have to be a subfolder of *C:\Documents and Settings\User*. For example, the location can be *C:\YourStartup*.
3. Exit the Registry and reboot.

To change the location of the common Startup folder, go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\User Shell Folders\Common Startup. The string value will be %ALLUSERSPROFILE%\Start Menu\Programs\Startup. Change it to any folder you want, exit the Registry, and reboot.

1.14 Disabling Error Reporting

Problem

Whenever Windows encounters an unrecoverable error, it asks whether you want to report the error to Microsoft. You don't want to send information to Microsoft, and so want to disable the error reporting notice.

Solution

Using a graphical user interface

1. Right-click My Computer and choose Properties. The System Properties dialog box opens.
2. Click the Advanced tab.
3. Click the Error Reporting button.
4. Select the button next to Disable error reporting.
5. Check the box next to "But notify me when critical errors occur." That way, you'll still be notified when a critical error occurs, but you won't be prompted to send the error report to Microsoft.
6. Click OK.

If you'd like, you can enable error reporting for some applications and disable it for others. You can, for example, enable error reporting for critical errors having to do with XP itself but not applications, or you can enable error reporting for applications on a case-by-case basis. To do this, from the screen pictured in Figure 6-9:

1. Select the Enable error reporting button.
2. Check the box next to Windows operating system if you want to enable error reporting for XP itself. Check the box next to Programs if you want to enable error reporting for applications.

3. To turn error reporting on and off for individual applications, click Choose Programs. The Choose Programs dialog box, shown in Figure 6-10, appears. To specify programs for which you want to enable error reporting, click the Add button in the top pane and browse for the program. To specify programs for which you want to disable error reporting, click the Add button in the bottom pane and browse for the program. Click OK and then OK again.

Using the Registry

To disable error reporting, open the Registry Editor and go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\PCHealth\ErrorReporting and edit the DoReport value to 0. Exit the Registry. You may need to reboot in order for the setting to take effect. Edit the value to 1 to enable error reporting.

You can also use the Registry to turn off error reporting for applications and XP itself on a case-by-case basis. Go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\PCHealth\ErrorReporting. Then:

- To disable error reporting for Microsoft applications, edit the IncludeMicrosoftApps value to 0.
- To disable error reporting for Windows components, edit the IncludeWindowsApps value to 0.
- To exclude any individual application from error reporting, create a new DWORD value under HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\PCHealth\ErrorReporting\ExclusionList, and give it the executable name of the application you want to exclude, for example, Notepad.exe. Don't include the path; just use the executable name.
- To use error reporting for any individual application, create a new DWORD value under HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\PCHealth\ErrorReporting\InclusionList, and give it the executable name of the application that you want to use error reporting, for example, Notepad.exe. Don't include the path; just use the executable name.
- • Exit the Registry. You may have to reboot in order for the changes to take effect.

1.15 Creating Environment Variables

Problem

You want to be able to add environment variables to XP, so that scripts and certain programs can operate properly.

Solution

Using a graphical user interface

1. Log in as an administrator (only system administrators can set environment variables).
2. Right-click My Computer and choose Properties.
3. Click the Advanced tab and click Environment variables. The environment variables dialog box, shown in Figure 6-1 1, appears.

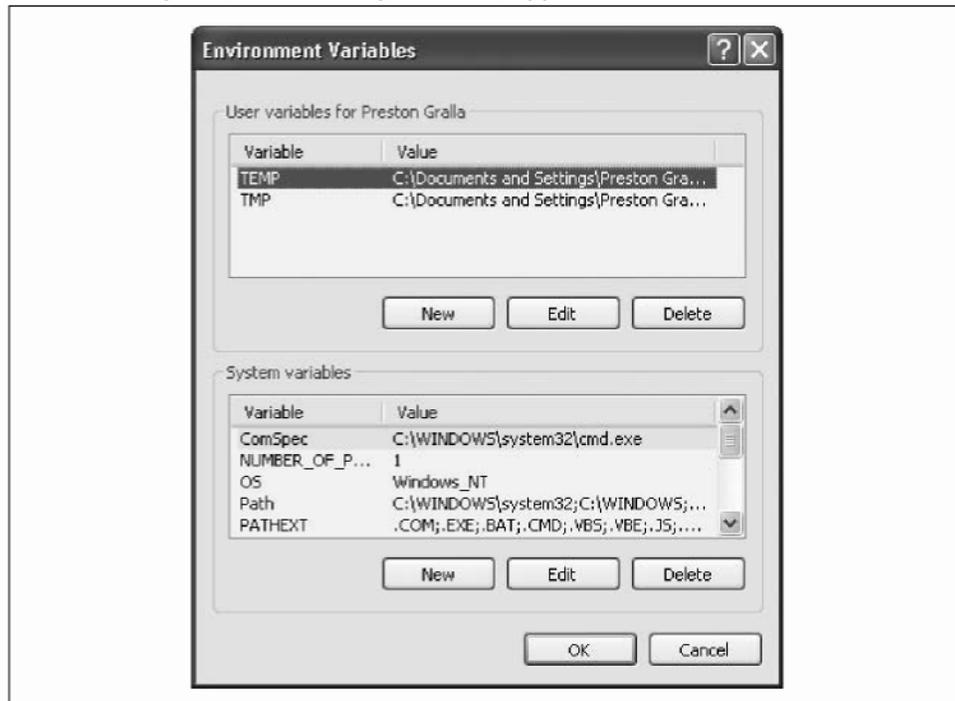


Figure 1-11. The Environment Variables dialog box lets you see what variable are already set, edit them, delete them, and add new ones

4. To add a new value, click New in the User variables or System variables area, depending on whether you're adding variables for all users of the system or just the logged-on user.
5. In the New User Variable dialog box that appears, type the name for the variable in the Variable name box, and the value for the variable in the Variable value box, for example, TMP for the variable name, and %USERPROFILE%\Local Setting s\T em p.
6. Click OK until all boxes close.
7. To edit a value, highlight it, click Edit, change the variable name and value, and

click OK until all boxes close. To delete a value, highlight it, click Delete, then click OK until all boxes close.

8. Usually, changes to values require that you restart your PC, so restart to make sure that the changes take effect.

Using a command-line interface

At the command prompt, use this syntax to set an environment variable:

```
> set variablename=variablevalue
```

For example, to set the variable ProgramFiles to the value [C:\Program Files](#), you'd type this at a command prompt and press Enter:

```
> set variablename=variablevalue
```

That will set the environment variable only temporarily, and only in the command prompt; it won't affect the rest of the system. To set permanent environment variables, use the GUI as detailed in the earlier part of this recipe.

If you're at the command prompt and want to see the current environment variables, type set and press Enter. You'll see a list like this:

```
PATHEXT=.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH
PROCESSOR_ARCHITECTURE=x86
PROCESSOR_IDENTIFIER=x86 Family 15 Model 1 Stepping 2, GenuineIntel
PROCESSOR_LEVEL=15
PROCESSOR_REVISION=01 02
ProgramFiles=C:\Program Files
PROMPT=$P$G
SESSIONNAME=Console
SystemDrive=C:
SystemRoot=C:\WINDOWS
TEMP=C:\DOCUME-1\PRESTO-1\LOCALS-1\Temp
TMP=C:\DOCUME-1\PRESTO-1\LOCALS-1\Temp
USERDOMAIN=PRESTONGRALLA
USERNAME=Preston Gralla
USERPROFILE=C:\Documents and Settings\Preston Gralla
windir=C:\WINDOWS
```

1.16 Creating a Reboot or Shutdown Shortcut

Problem

You want to reboot or shut down your PC quickly, and customize the way that it shuts down.

Solution

Using a graphical user interface

For a fast way to shut down or reboot your PC, create a shortcut on your desktop, and then double-click the shortcut.

To create the shortcut, right-click the desktop and select New → Shortcut. The Create Shortcut wizard appears. On the first screen, for the location of the item, type shutdown, followed by one of several switches, like this:

```
shutdown -r -t 01 -c "Rebooting your PC"
```

Click Next, and in the next screen, type in the name of the shortcut. This is what will appear on the shortcut on the desktop. Then click Finish. To shut down or reboot, double-click the shortcut.

The example above would create a shortcut that would reboot your PC after a one-second delay and display the message "Rebooting your PC." You can instead tell the PC to reboot or you can have it log you off instead of shutting down. Table 6-3 lists the switches you can use with shutdown.

Table 6-3. Switches you can use with shutdown

Switch	What it does
-S	Shuts down the PC
-l	Logs the current user off.
-t <i>nn</i>	Indicates the delay, in seconds, before performing the action.
- C "messagetext"	Displays a message in the System Shutdown window. A maximum of 127 characters can be used. The message must be enclosed in quotation marks.
- f	Forces any running applications to shut down.
-r	Restart the PC.

1.17 Scheduling a Reboot

Problem

You want reboot your PC automatically, on a schedule that you specify.

Solution

Using a graphical user interface

1. Create a shortcut to reboot your PC, as explained in Recipe 6.16. Use this syntax for creating it:

```
shutdown -r -t 01 -c "Rebooting your PC"
```
2. From the Control Panel, open the Scheduled Tasks applet.
3. Double-click Add Scheduled Task.
4. Click Next.
5. In the screen that appears, click the Browse button, browse to <C:\Windows\System32> and select *shutdown.exe*.
6. Type a name for the task (such as Reboot), select the frequency in which to run it, and click Next.
7. Enter the username and password of the user the task should run as and click Next.
8. If you want to go back and modify any of the settings for the task, check the box beside Open advanced properties and click Finish.

Discussion

Some people believe a periodic reboot is required to keep Windows snappy. Indeed, some updates for virus protection and security policies require a reboot to either take effect or poll network resources for updates and policy changes. So it's a good idea to reboot Windows every once in a while, even if it doesn't seem as if it's needed.

1.18 Speeding Up System Startup

Problem

You want your system to start more quickly.

Solution

Perform a boot defragment

Doing a boot defragment will put all the boot files next to one another on your hard disk. When boot files are in close proximity to one another, your system will start faster. On most systems, boot defragment should be enabled by default, but it might not be on yours, or it might have been changed inadvertently. To make sure that boot defragment is enabled on your system, run the Registry Editor and go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Dfrg\BootOptimizeFunction. Edit the Enable string value to Y if it is not already set to Y. Exit the Registry and reboot. The next time you reboot, you'll do a boot defragment.

Edit your BIOS

When you turn on your PC, it goes through a set of startup procedures in its BIOS before it starts XP. So, if you speed up those initial startup procedures, you'll make your system start faster.

You can speed up your startup procedures by changing the BIOS with the built-in setup utility. How you run this utility varies from PC to PC, but you typically get to it by pressing the Delete, F1, or F10 key. You'll come to a menu with a variety of choices. Here are the choices to make for faster system startups.

Quick Power-On Self Test (POST)

When you choose this option, your system runs an abbreviated POST rather than the normal, lengthy one.

Boot-Up Floppy Seek

Disable this option. When it's enabled, your system spends a few extra seconds looking for your floppy drive—a relatively pointless procedure, especially considering how infrequently you use your floppy drive.

Boot Delay

Some systems let you delay booting after you turn on your PC so that your hard drive gets a chance to start spinning before bootup. Most likely, you don't need to have this boot delay, so turn it off. If you run into problems, you can turn it back on.

Clean out your Registry

Over time, your Registry can become bloated with unused entries, slowing down your system startup because your system loads them every time you start up your PC. Registry First Aid (<http://www.rosecitysoftware.com/RegIAid>) can help you delete

unneded Registry entries and speed up startup times. It combs your Registry for outdated and useless entries, and lets you choose which entries to delete and which to keep. It also creates a full Registry backup so that you can restore the Registry if you run into a problem.

See Also

Registry First Aid is shareware and free to try, but it costs \$21 if you decide to keep using it. Download it from <http://www.rosecitysoftware.com/reg1aid>.

