THE Most Important Piece of Tuning You Can Do For Your PC?

Windows XP wastes a lot of processing power anticipating which files the user will require next and accessing them. This process is known as Prefetch. An analogy might be your dog 'fetching' his ball for you, before you have even thrown it. Microsoft intends that this operation will speed up your computing experience. In many situations this may be the case. However, it can sometimes have the opposite effect, clogging up your PC with temporary files and actions that actually slow things down. After reading this article you will be able to:

Dr Steve North: "Sometimes the smallest of adjustments can make a great deal of difference to the speed of Windows XP. This is particularly true if you are using an older or lower specification PC."

Dr Steve North is a computer science expert who has worked consistently with Microsoft Windows for over a decade. As a commercial researcher and developer, his clients have included Intel and Lloyds of London. He is an accomplished academic with international publications and postgraduate lecturing experience. Steve also worked as a consulting researcher for NASA's Goddard Space Flight Center.

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When you startup your PC or run a program, Prefetch is making decisions that may impact the speed of Windows XP.

Stop Your PC from Preparing to Access Files that You Never Use!

Prefetch is designed to speed up your PC's performance in two ways. Firstly, XP recognises the files that it most commonly requires at Startup. Secondly, it remembers the files required to run the programs that each user accesses most frequently (Microsoft Word, for example).

Prefetch then uses this information in two ways. It creates a temporary file for each program, containing a list of all resources (images, data files, etc.) required to run it. These are then loaded in advance so that the program will start more rapidly when required. In addition, Prefetch instructs XP's Disk Defragmenter to change where software tools are stored on the hard drive, so that frequently accessed tools are closer together. This prevents the hard drive heads from having to scoot all over the disk and therefore improves XP performance.

Find Unwanted Prefetch Files

To get started you will need to know where to look for the Prefetch files on your PC.
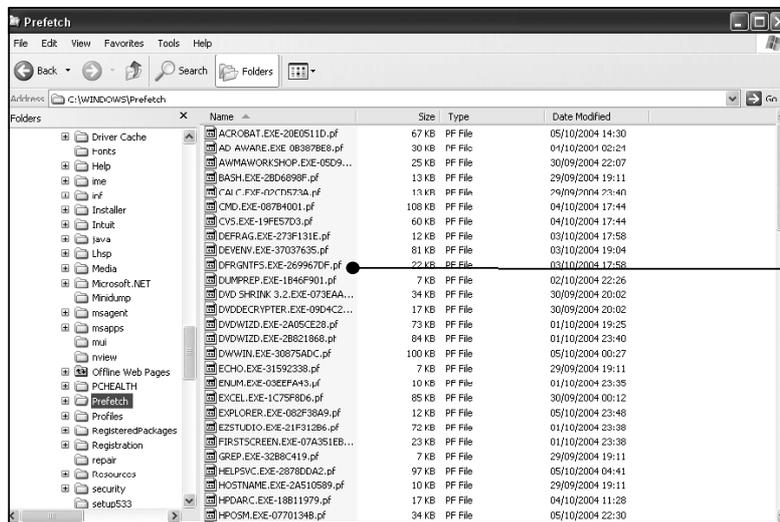
1. Open Windows Explorer by right-clicking **Start** and selecting **Explore** from the menu.
2. Navigate to **C:\WINDOWS\Prefetch**

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This is a Prefetch file for Microsoft Internet Explorer.

You'll notice that some of the files contained in this folder refer to familiar software programs. For example: •IEXPLORE.EXE–27122324.pf.

Clean Out Unnecessary Files that are Slowing Down Your PC

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The Windows Prefetch folder

Prefetch files end with the extension .pf

You will probably be aware that your PC's TEMP folder and cached temporary Internet files need cleaning out periodically to keep Windows running efficiently. In the same way, your Prefetch folder can become clogged with references to software that you once accessed frequently, but no longer use on a regular basis. This may be slowing down your PC. I would recommend that you delete the entire contents of this folder (don't worry, any beneficial files will be regenerated when you next restart). This should be done on a monthly basis. Alternatively, you could choose to just delete any files that relate to tools that you no longer use frequently.

Prefetch files are binary and cannot be read in a text file reader such as Notepad.

1. To delete all of these files select **Edit > Select All**.
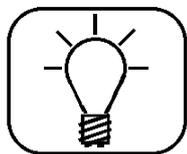2. Press (Delete) to delete all of these files.

Automate the Emptying of Your Prefetch Folder

The first method allows you to empty your Prefetch folder with just one click from the Windows Desktop.

Steps 1-3 are to make sure that your file extensions are visible. It is recommended that you retain this setting for security reasons.

1. Open Windows Explorer by right-clicking **Start** and selecting **Explore** from the menu.

2. **Tools** menu > **Folder Options** > **View** tab > **Hide extensions for known file types** should be ticked.

3. Still under **View** tab > **Folder views** > click **Apply to All Folders** > click **OK**.

4. Right-click on your Desktop and select **New** and then **Text Document**.

5. Open 'NEW TEXT DOCUMENT.TXT' on your Desktop.

6. Type:
   del c:\WINDOWS\Prefetch*.*/q
   into the text file and then save it. Note: change 'c' to the correct drive letter if this is not the drive that you have Windows installed on. Close the file.

7. Right-click on NEW TEXT DOCUMENT.TXT and rename it **CLEAR_PREFETCH.BAT** (or any name ending in .BAT).

8. When you want to empty your Prefetch folder (at least once a month) double-click on **CLEAR_PREFETCH.BAT** (a Command Prompt window may open asking you to confirm. If so, type Ⓨ).

That should have made things a little less labour intensive. Now, you will find out how to take it one stage further.

Automatically delete Prefetch files monthly or on Windows Startup:

The '/q' in the text file just stops the Command Prompt from asking you to confirm deletion for each of the Prefetch files.

1. Click **Start > All Programs > Accessories > System Tools > Scheduled Tasks.**

2. Double-click **Add Scheduled Task.**

3. In the Scheduled Task Wizard click **Next > Browse** and find **Clear_Prefetch.bat** on your Windows Desktop.

4. Select to perform this task either **Monthly** or **When my computer starts,** as preferred.

5. Click **Next,** and enter a time for the task to be performed. Click **Next > Next > Finish** and restart your PC.

In Windows XP (Professional) it is also possible to automate Prefetch by clicking **Start > Run.** Type **gpedit.msc** . This is not available in Windows XP (Home).
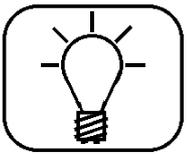
Modify Prefetch Registry Settings for Faster Performance

Now that you know how to perform Prefetch housekeeping, you might want to consider whether it is worth having Prefetch switched on at all. Prefetch can be disabled or modified just by changing one registry value: EnablePrefetcher. As a starting point, your options for this setting should depend on the amount of RAM that your PC is equipped with. If your PC has less than 128 MB, EnablePrefetcher should be set to 0. A PC with more than 512 MB is likely to perform better with a setting of 3. These are just guidelines and you may want to experiment with different values. You will need to restart Windows before any performance difference will be noticed.

As always, making changes to the registry could stop Windows from working. You are advised to set a System Restore point and backup the registry before you make any changes.

It is important to note that there are several related registry keys with very similar names. Before changing any values, please make absolutely sure that the key name contains: CurrentControlSet.
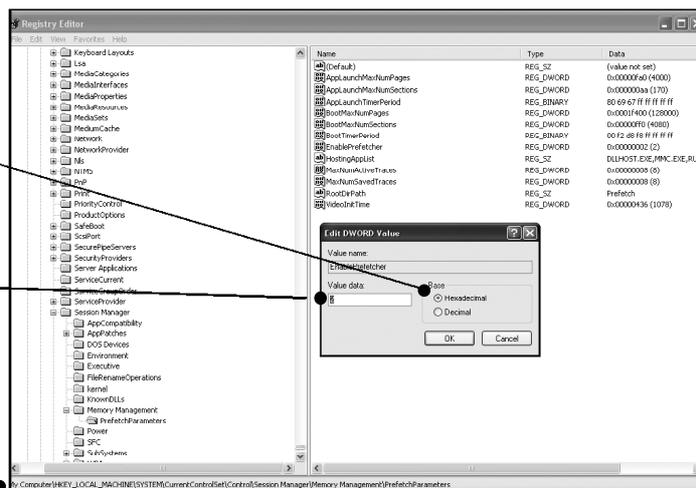
1. Click **Start > Run.**

2. Type **regedit** and press (Enter) or click **OK.**

3. Locate and open the following registry key: **HKEY_LOCAL_MACHINE\SYSTEM\ CurrentControlSet\Control\SessionManager\ MemoryManagement\PrefetchParameters**

4. Right-click on **EnablePrefetcher** and choose **Modify.**

5. In the **Value Data** field of the **Edit DWORD Value** box you will see a number. You can amend the number in this field with reference to the following table:

Value	Result
0	Disable (no Prefetch at all).
1	Application Launch Prefetch (when programs are started).
2	Boot Prefetch (to speed up Windows at Startup).
3	Prefetch everything.

Make sure that the base setting remains on 'Hexadecimal'.

Change the value in the Value Data field.

The status bar at the bottom of the Registry Editor shows your location within the registry.

Using Registry Editor's DWORD Value box to edit EnablePrefetcher

Use Third Party Software for Tweaking Prefetch

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If you'd rather not modify the registry there are several software tools available to help with the optimisation of Prefetch. All of the software mentioned in this article is on the CD that accompanies this update. Here is a quick summary of the features provided by each of the three third party tools:

Prefetch tool	Changes registry?	Cleans out files?	Schedules automated optimisation?
Prefetch Clean And Control	Yes	Yes	No
Universal Tweaker	No	Yes	No
Ace Utilities	No	Yes	No

Universal Tweaker

Universal Tweaker is a Command Prompt-based tool that, along with other optimisation tasks, automates the process of emptying your Prefetch folder. Once you have entered the details of the your PC, this tool immediately makes the necessary system changes.
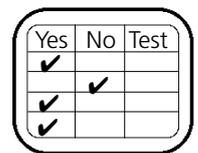
Note: if you are using Sophos anti-virus software, you may find that you need to *temporarily* disable Sophos' Intercheck as follows:

Software that makes low–level adjustments may be mistaken for a virus.

1. Click **Start> All Programs> Sophos Anti-virus> Sophos Anti-virus tool.**

2. Select the **IC Client** tab.

3. Click the large red **Stop** button at top left.

You should restart Intercheck (same as above but click **Start**) as soon as you have downloaded or finished working with Universal Tweaker.

Ace Utilities

Ace Utilities is another all round system-tweaker that offers scheduled Prefetch cleaning as one of its options. After downloading and installing Ace Utilities follow the instructions below to use this feature:

1. Select **Erase Your History**, and open the **Windows** tab.

2. Select **Empty the Windows XP Prefetch Folder** and then click **Execute Now.**

The Prefetch features in Ace Utilities can be found under **Erase Your History.**

The main window in Ace Utilities

Prefetch Clean And Control

This is a tool that allows you to both modify the Prefetch registry settings (as described earlier) and also to empty your Prefetch folder.
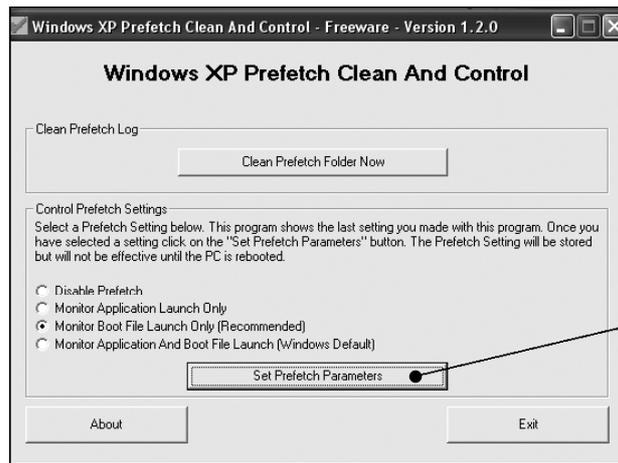
To empty the Prefetch folder:

1. Click on the **Clean Prefetch Folder** Now button.

To adjust the Prefetch registry settings:

1. Choose one of the following **Control Prefetch Settings** radio-buttons: **Disable Prefetch, Monitor Application Launch Only, Monitor Boot File Launch Only** or **Monitor Application And Boot File Launch.**

2. Prefetch Clean And Control will indicate which of the buttons it thinks is the best option for your current system.

3. Click on the **Set Prefetch Parameters** button.

The interface for Prefetch Clean And Control

It is important to note that the **Set Prefetch Parameters** button in Prefetch Clean And Control is not for refining settings, it actually applies any modifications that you have made.

Windows XP Services – Required Settings for Prefetch

We're nearly there now! There is just one thing that might stop Prefetch from working, irrespective of any other settings. Many of the Prefetch options (with the exception of monitoring the launch of software programs) depend on Windows XP's built-in scheduling functionality. To check that Prefetch is going to work at the scheduled times, proceed as follows:

Prefetch may not work at if certain Windows XP services are disabled.

1. Click **Start** > **Control Panel**.

2. Open **Administrative Tools**, then select **Services**.

3. In the right-hand pane check that the following two services are indicated as **Started** in the status column: COM+ Event System and Task Scheduler.

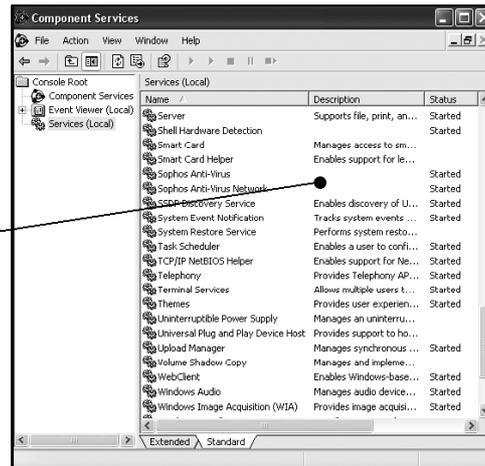4. If one or both of the services has not started, select each service name by clicking on it.
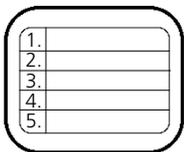
5.   Click on **Restart the service**.

6.   Right-click on the service name and select **Properties**.

7.   Select the **General** tab.

8.   Set the **Startup type** drop-down menu to **Automatic**.

The Windows XP Component Services window

> This is where you will find the services COM+ Event System and Task Scheduler.

This article has introduced you to a hidden element of Windows XP functionality: Prefetch. This process can have a dramatic impact on the speed of your PC. Prefetch is a well-intentioned process that *can* be very helpful. It can also add to the time that you spend watching the Windows egg timer. Having followed the suggestions in this article, you are now in a position to decide on the best strategy to keep Windows running at the fastest possible speed on your hardware. You might choose to manually delete Prefetch files on a regular basis. Alternatively, you may decide that automating the process is sensible. If you happen to have an older computer, you may even come to the conclusion that Prefetch should be completely disabled. This article has helped you to better understand one of Windows XP's many mysteries. You are now armed with the necessary skills to understand and configure Prefetch on your PC.