How do you install the User Mode Process Dumper for diagnostics with WinCC and PCS 7?

User Mode Process Dumper

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Question

How do you install the User Mode Process Dumper for diagnostics with WinCC and PCS 7?

Answer

Follow the instructions and notes listed in this document for a detailed answer to the above question.

Contents

1 Installing and Using the "User Mode Process Dumper"

WARNING	**When you proceed as described below, there might be situations where performance is impaired as listed below:** • Loss of performance • Extremely high use of memory • Change of system timing • Inoperability of the plant **The procedures should only be executed if recommended by the service staff.**

1.1 Manual Starting of the "User Mode Process Dumper"

Table 1-1

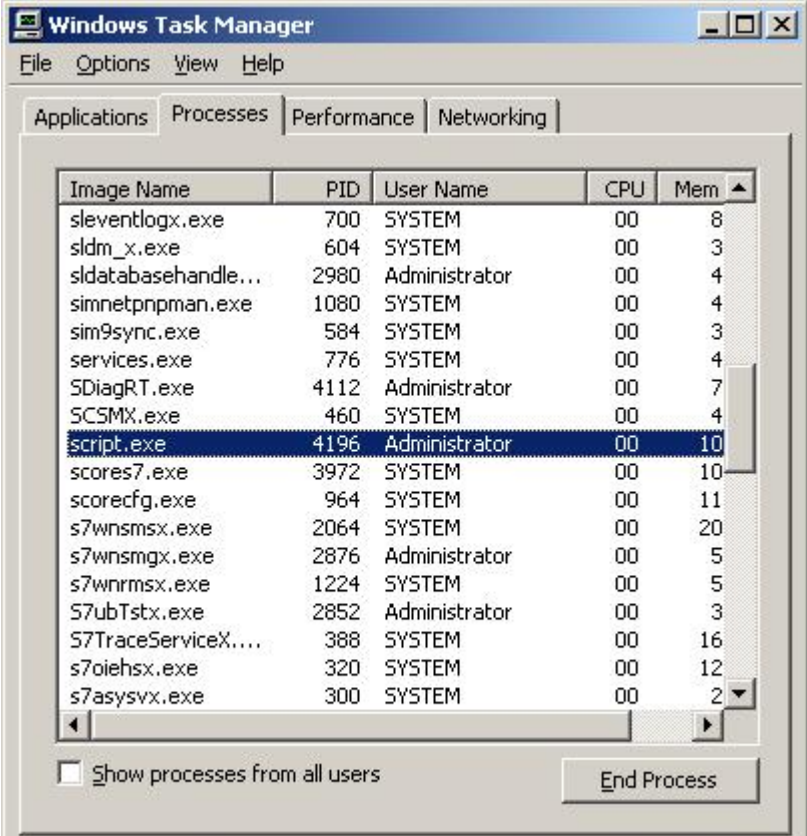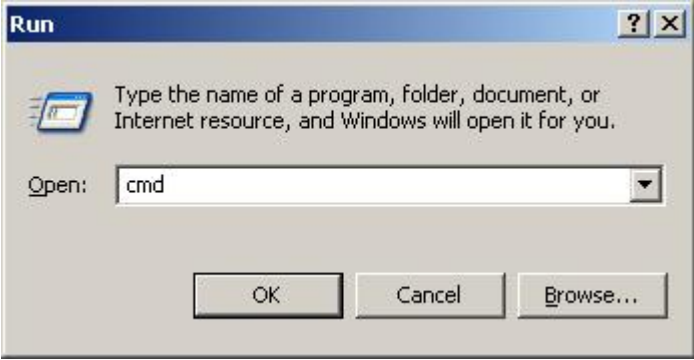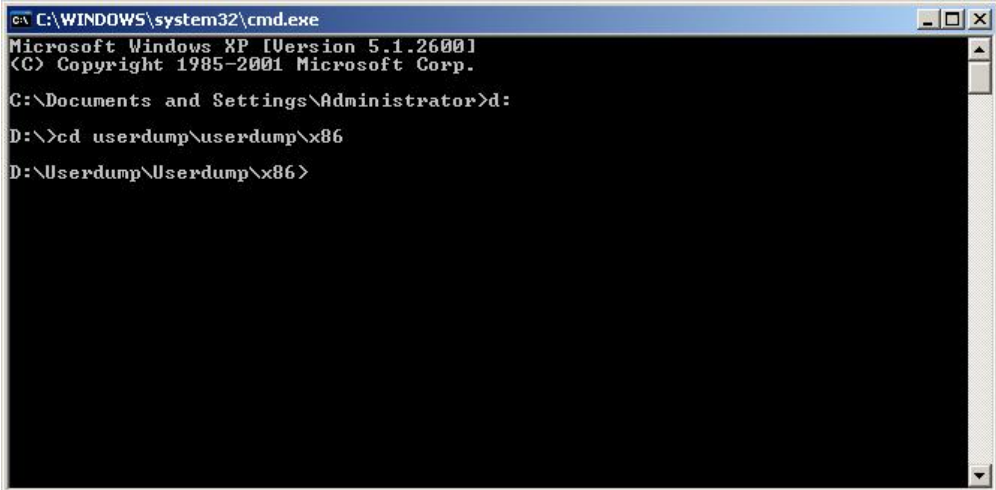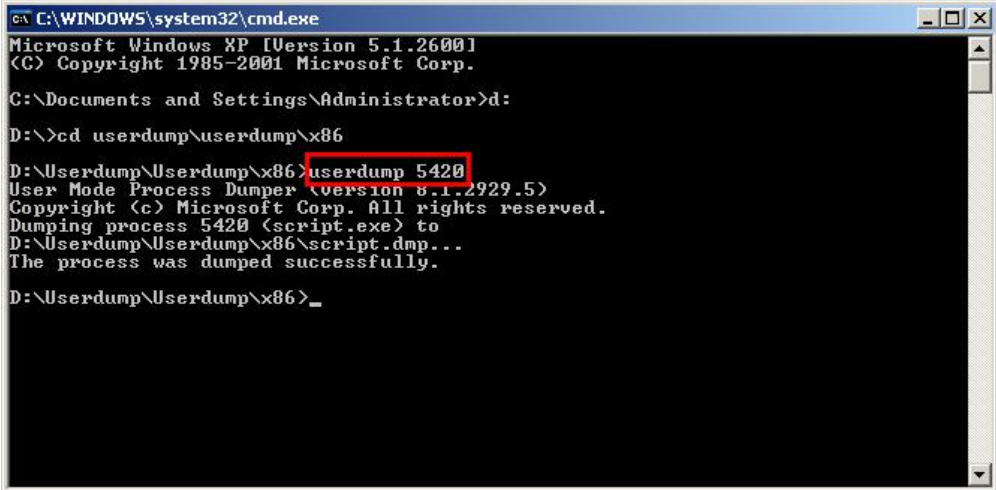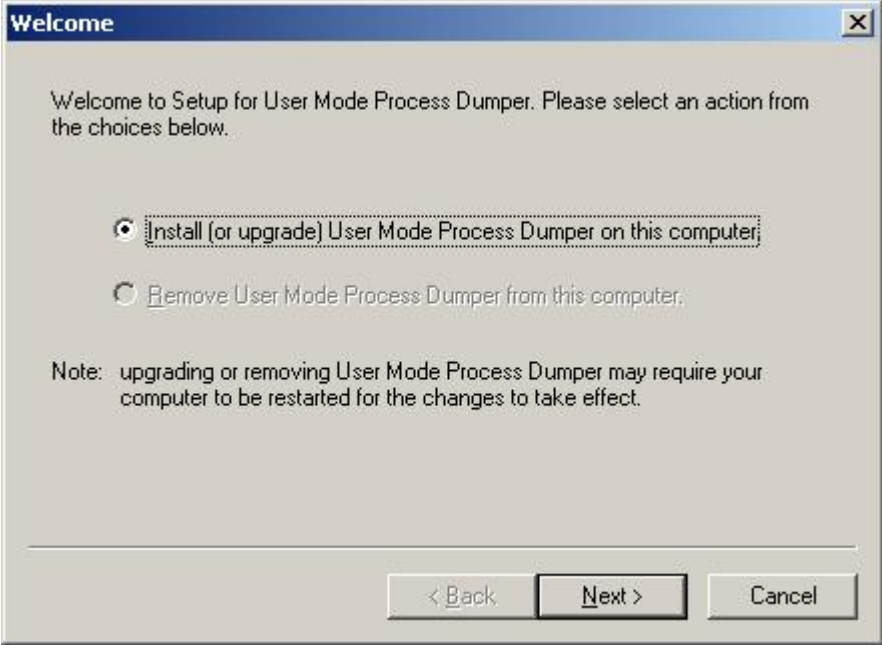| No.	Procedure
1.	Download the User Mode Process Dumper Version 8.1 from the Microsoft Internet site and unpack the files in a new directory.
2.	Determine the Process ID (PID) of the process to be examined in the Windows Task Manager. (This is "script.exe" in the example.)

No.	Procedure
	Note You can also use the process name instead of the Process ID.
3.	Under "Start > Run" you enter the "cmd" command to open a DOS box (command line interpreter).
4.	In the DOS box you select the path in which you have unpacked the files of the User Mode Process Dumper. Select the relevant folder for your operating system (ia64, x64 or x86) in which "userdump.exe" is located. **Note** After downloading the tool „User Mode Process Dumper Version 8.1" from the Microsoft web site and extracting all files from archive to a separate folder, you will find in this folder the file „ReadMe.htm". In this file is explained, from which folder (ia64, x64 or x86) you have to open the "userdump.exe" file, in condition to your operating system.

No.	Procedure
5.	Now use the "userdump 5420" command (see screenshot) to start "userdump.exe" specifying the Process ID of the process to be examined.
6.	The dump file generated was saved in the same directory in which you unpacked the files of the User Mode Process Dumper.

1.2 Installing the "User Mode Process Dumper" for Automatic Monitoring
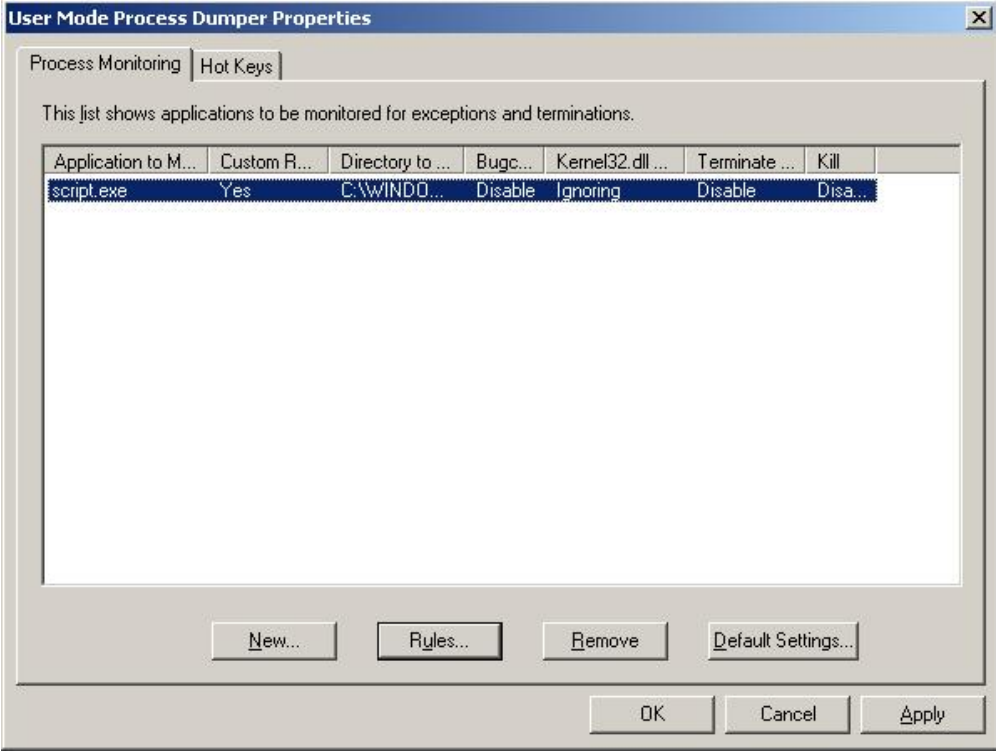
Table 1-2

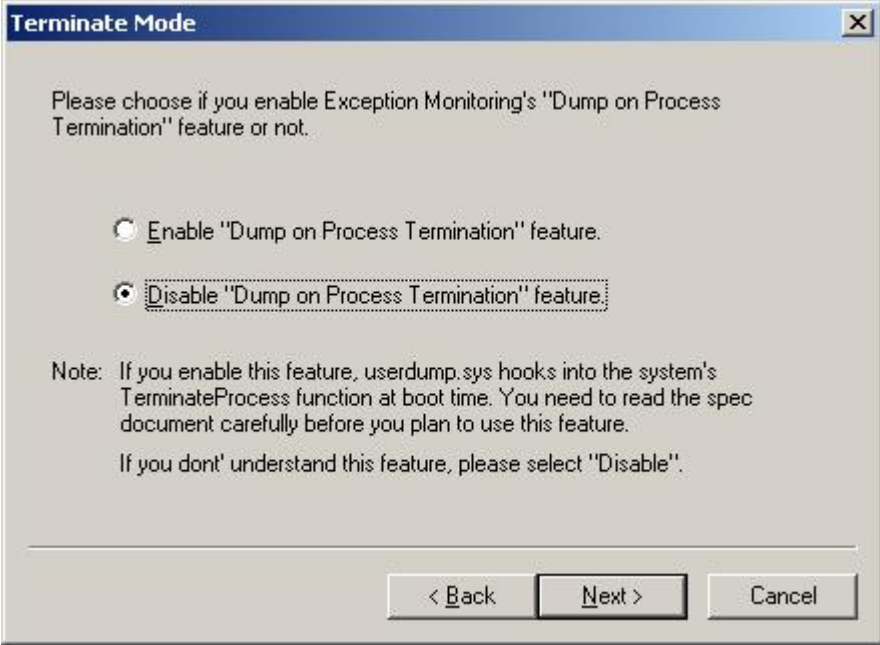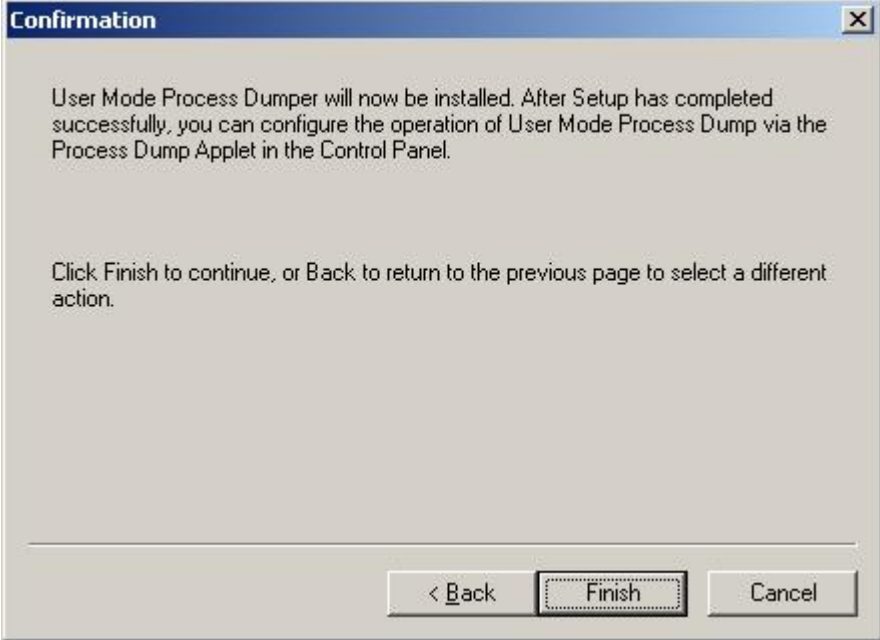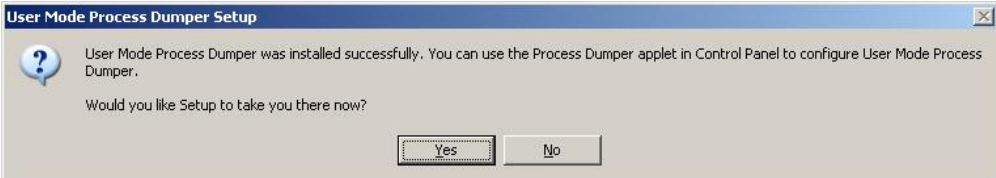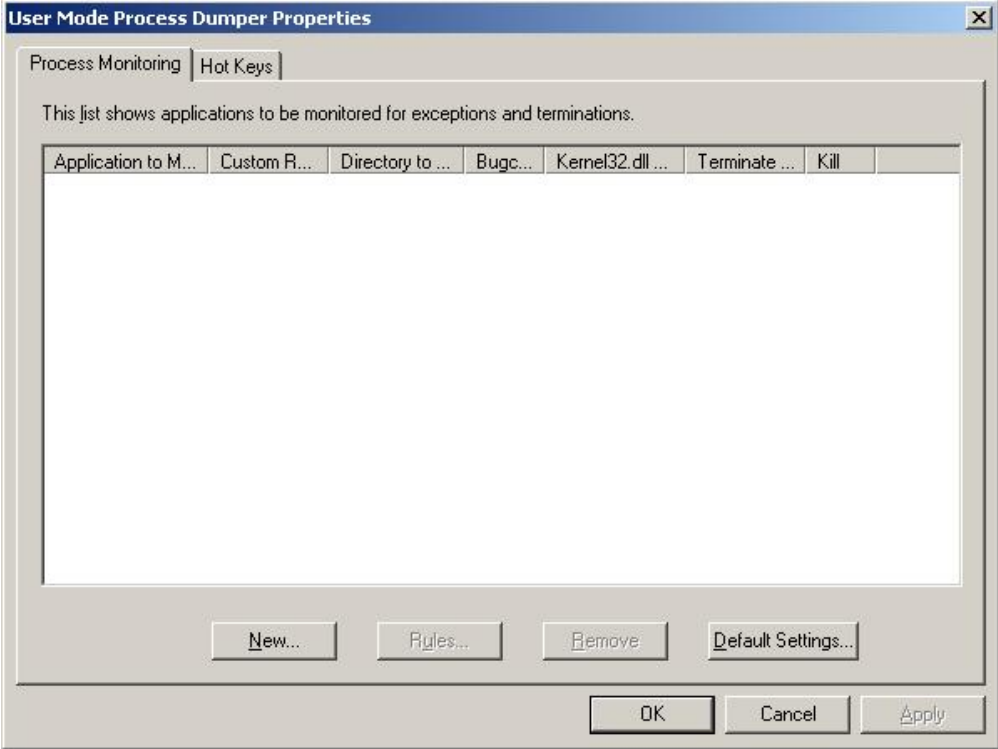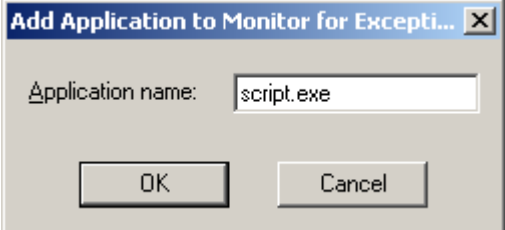| No.	Procedure
1.	Download the <u>User Mode Process Dumper Version 8.1</u> from the Microsoft Internet site and unpack the files in a new directory.
2.	Start the "setup.exe" of the User Mode Process Dumper from the folder corresponding to your operating system (ia64, x64 or x86). Click the "Next" button in the following window. **Note** After downloading the tool „User Mode Process Dumper Version 8.1" from the Microsoft web site and extracting all files from archive to a separate folder, you will find in this folder the file „ReadMe.htm". In this file is explained, from wich folder (ia64, x64 or x86) you have to open the "userdump.exe" file, in condition to your operating system.

No.	Procedure
3.	In the "Terminate Mode" you select the "Disable "Dump on Process Termination" feature" option and click the "Next" button.
4.	Now, in the "Confirmation" window you click the "Finish" button to complete the installation.
5.	Acknowledge the next message with "Yes" to open the configuration of the User Mode Process Dumper.

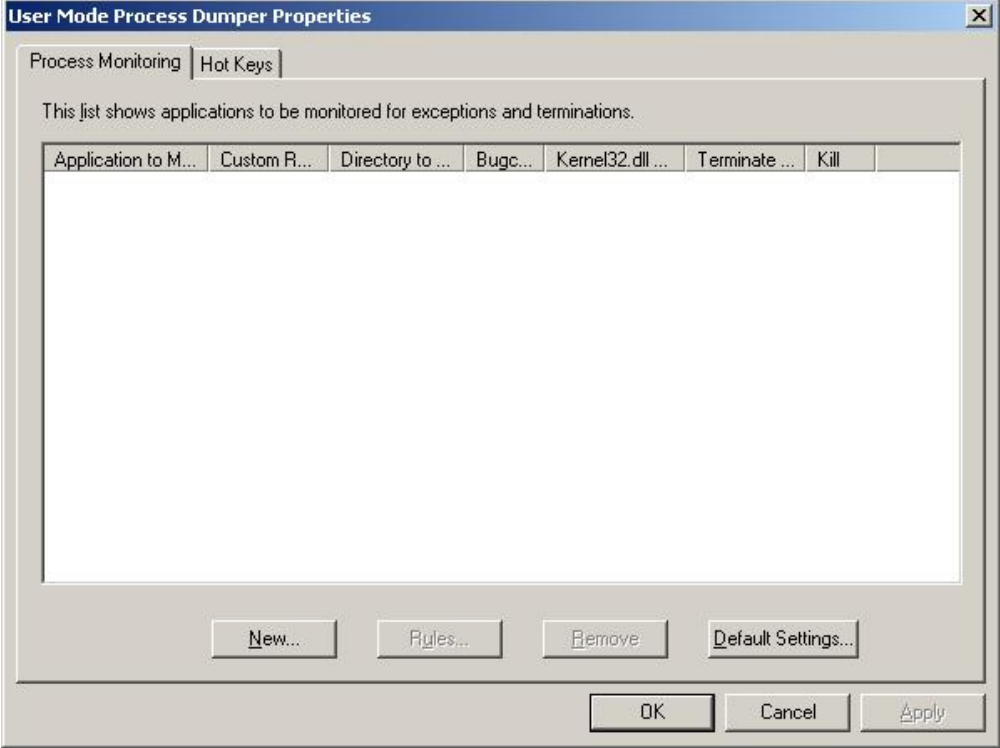| No.	Procedure
6.	In the "User Mode Process Dumper Properties" window you add a new entry via the "New..." button.
7.	In the "Add Application to Monitor for Excepti..." window you enter the name of the application that you wish to monitor in the "Application name:" field. Close the window with "OK".
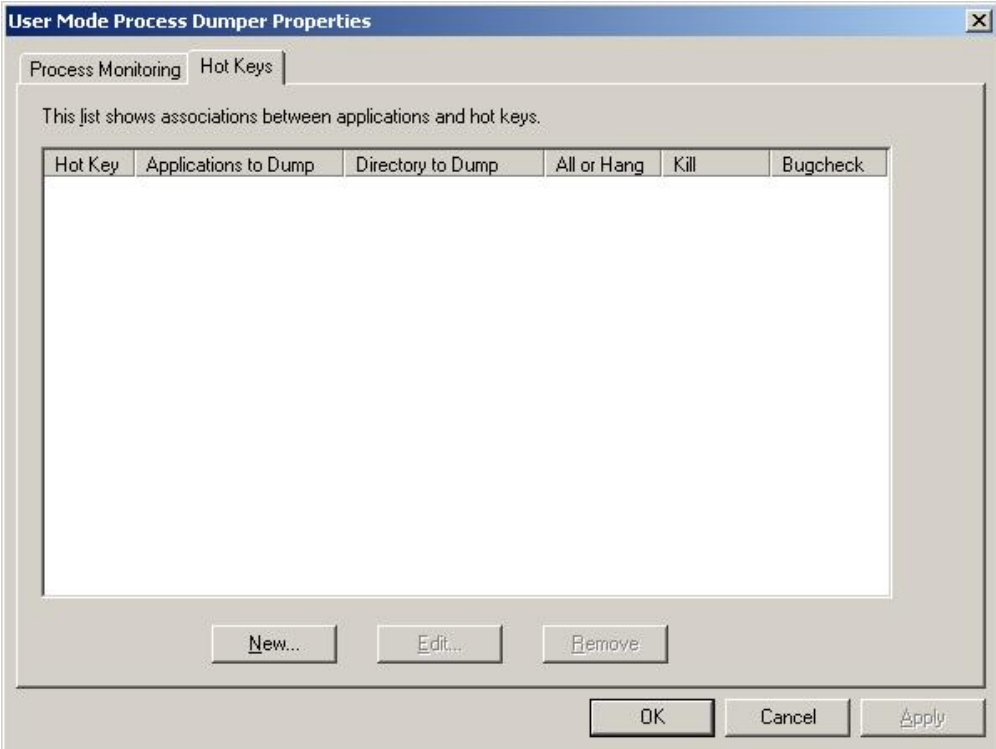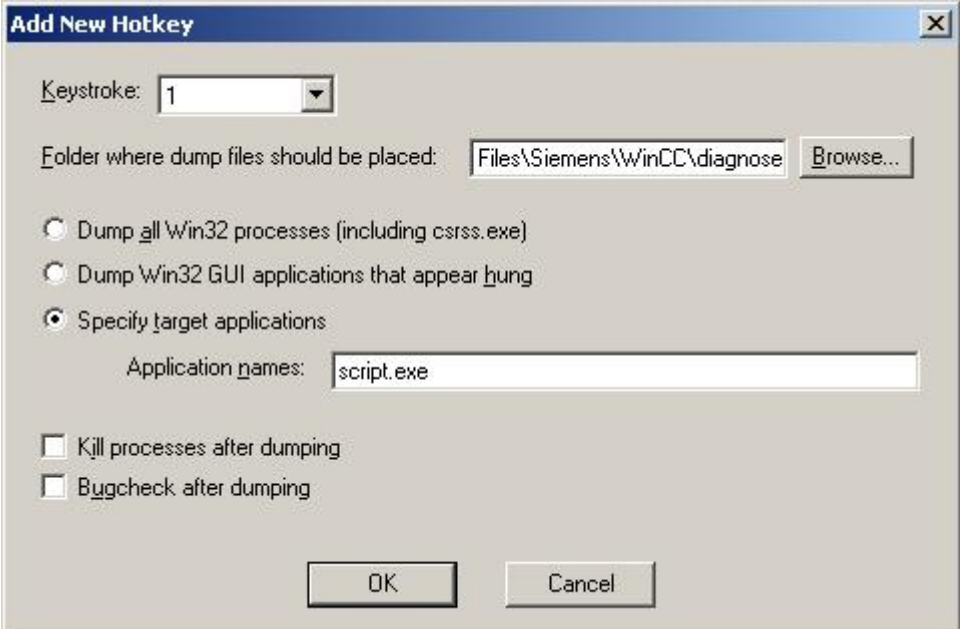
No.	Procedure
8.	Now click the "Rules" button in the "User Mode Process Dumper Properties" window (see figure in Step 6) and in the "Process Monitoring Rules for script.exe" window you select the rules as illustrated in the screenshot below.
	Select the "Save Mode" according to your requirements. ("Overwrite" overwrites the generated file each time and with the "Cyclic saving (5 times)" option the first file is overwritten after five files.
	In the field „Exception Monitor **select „Access Violations" only**.
	Close the window with "OK".
	Note: You must restart the process concerned for the settings to become effective. In the case of "script.exe" you simply have to restart WinCC Runtime. If a dump is triggered, a small window is displayed temporarily in the top left-hand corner like this:

No.	Procedure
9.	To disable the monitoring of a process you open the "User Mode Process Dumper Properties" dialog via Start > Settings > Control Panel > Process Dumper. Select the desired entry. Then click the "Remove" button to remove the entry.

1.3 Installing the "User Mode Process Dumper" with Hotkey

Table 1-3

No.	Procedure
1.	Carry out Steps 1 to 5 in Table 1-2 to install the User Mode Process Dumper and open the "User Mode Process Dumper Properties" window. If you have already installed the User Mode Process Dumper, you can open the "User Mode Process Dumper Properties" window via "Start > Settings > Control Panel > Process Dumper".

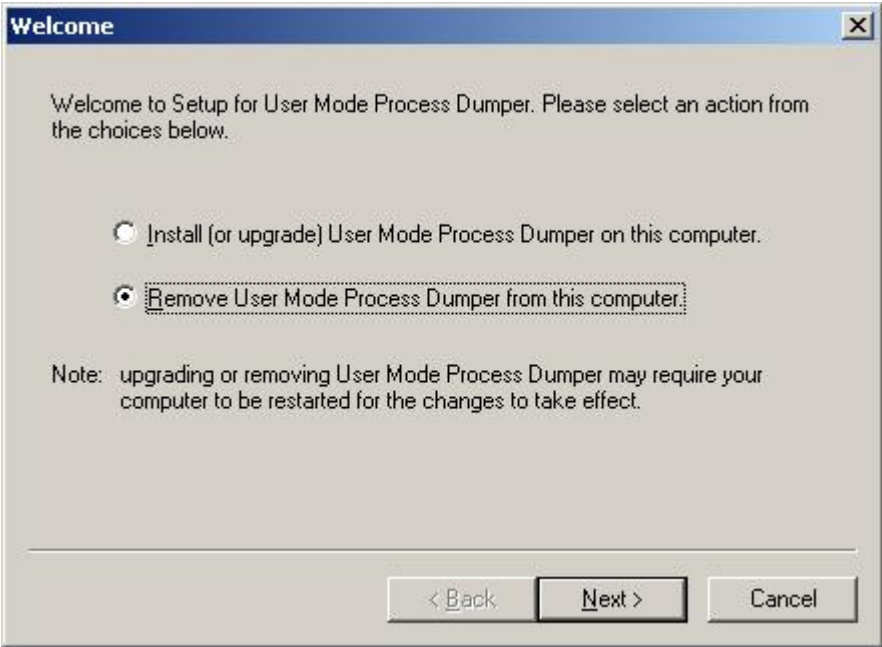| No.	Procedure
2.	Switch to the "Hot Keys" tab and click the "New..." button.
3.	In the "Add New Hotkey" window you can define the actual hotkey (called "Keystroke" here). For this you select a number or letter from the drop-down box ("1" in the example). Furthermore, you can specify the storage path and application name. (This is "script.exe" in the example.)

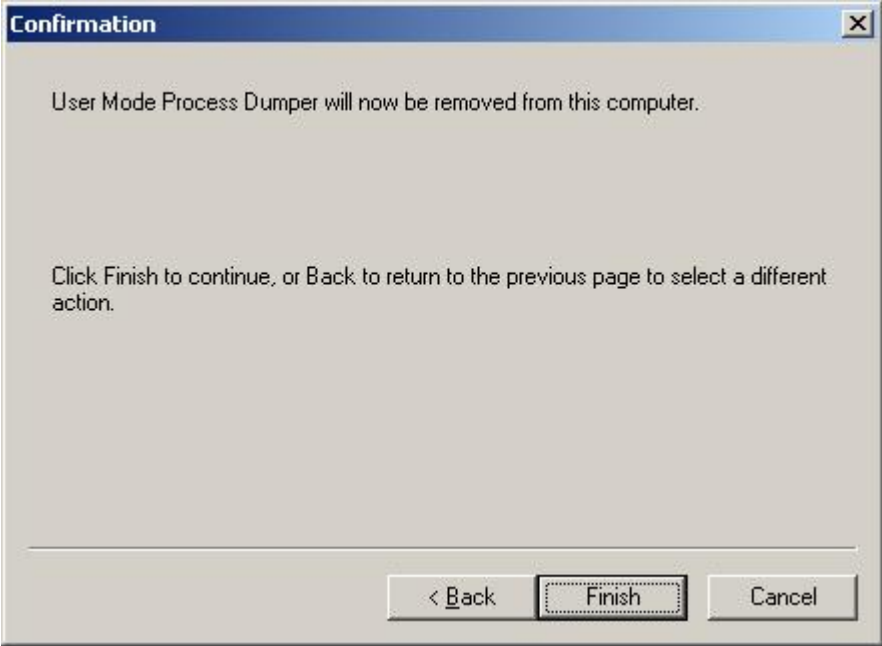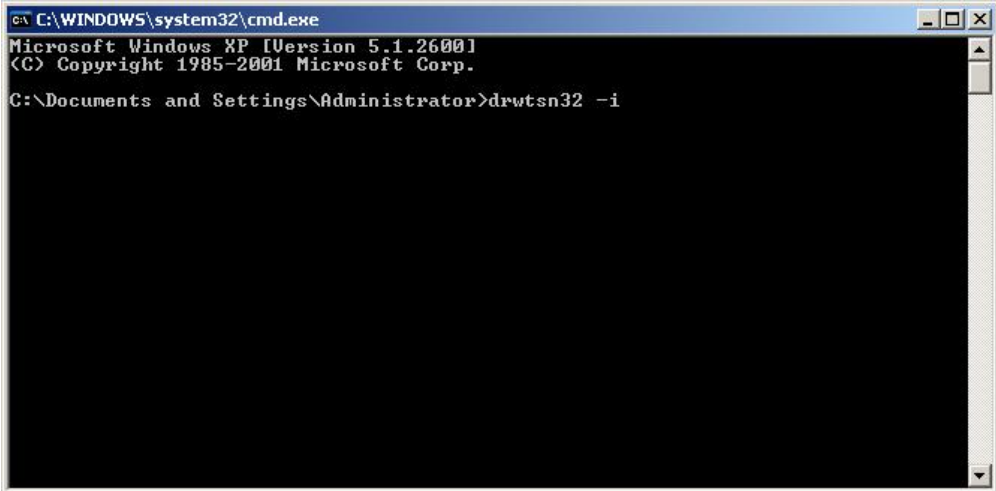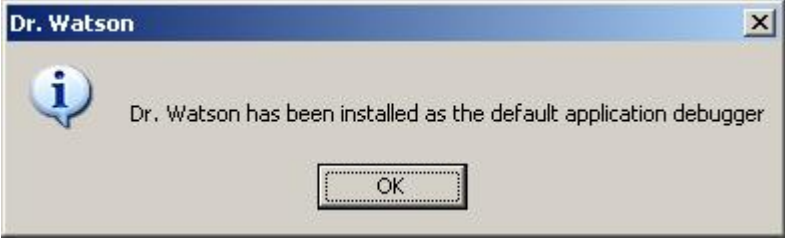| No.	Procedure
4.	Once you have installed the hotkey in this way, you can call creation of the dump using the key combination below. Press and hold Ctrl+Alt+Shift and enter the letters D U M P one after the other. Now release all the keys and click the hotkey just configured (Keystroke "1" in the example); the creation of the dump is started automatically. The dump is now in the path previously set.

1.4   Uninstalling the "User Mode Process Dumper"

Background for uninstalling the User Mode Process Dumper:
As long as the tool in installed, the "Dr. Watson" is no longer triggered. You must uninstall the User Mode Process Dumper in order to restore the "Dr. Watson" tool.

Table 1-4

No.	Procedure
1.	Start the "setup.exe" of the User Mode Process Dumper again from the folder corresponding to your operating system (ia64, x64 or x86). **Note** After downloading the tool „User Mode Process Dumper Version 8.1" from the Microsoft web site and extracting all files from archive to a separate folder, you will find in this folder the file „ReadMe.htm". In this file is explained, from wich folder (ia64, x64 or x86) you have to open the "userdump.exe" file, in condition to your operating system.
2.	In the window that opens you select the "Remove User Mode Process Dumper from this computer" option. **Welcome** ✕ Welcome to Setup for User Mode Process Dumper. Please select an action from the choices below. ○ Install (or upgrade) User Mode Process Dumper on this computer. ◉ Remove User Mode Process Dumper from this computer. Note: upgrading or removing User Mode Process Dumper may require your computer to be restarted for the changes to take effect. < Back Next > Cancel

No.	Procedure
3.	Now, in the "Confirmation" window you click the "Finish" button to complete the uninstallation.
	Confirmation ⊠ User Mode Process Dumper will now be removed from this computer. Click Finish to continue, or Back to return to the previous page to select a different action. < Back | Finish | Cancel
4.	Upon completion of the uninstallation you acknowledge the next message with "Yes" to restart the computer.
	User Mode Process Dumper Setup ⊠ ❓ Setup must restart Windows to complete the removal of User Mode Process Dumper. Should Setup restart Windows now? | Yes | No
5.	Enter the command "drwtsn32 -i" in a DOS box just to make sure that the "Dr. Watson" tool is enabled again.
	C:\WINDOWS\system32\cmd.exe Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp. C:\Documents and Settings\Administrator>drwtsn32 -i

No.	Procedure
6.	You get the message below to confirm that the "Dr. Watson" tool has been installed again as the default application debugger. **Dr. Watson** ⓘ Dr. Watson has been installed as the default application debugger OK

2 Enabling and Using the "gflags" Tool

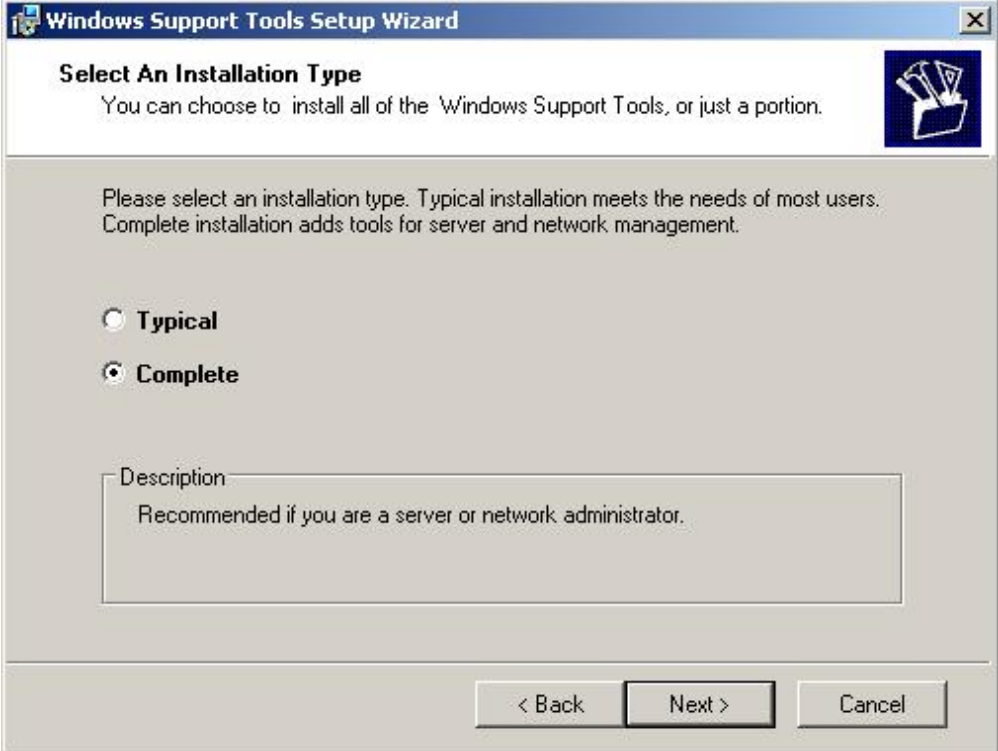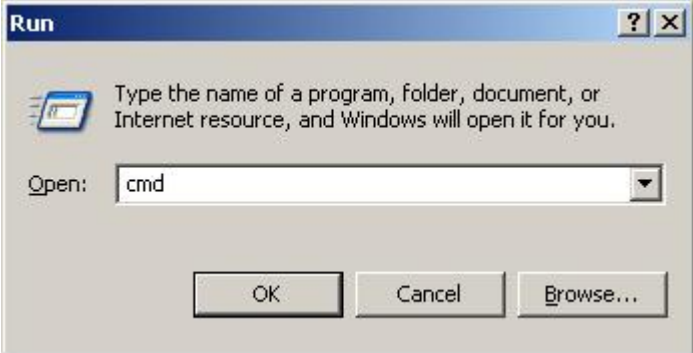| WARNING	**When you proceed as described below, there might be situations where performance is impaired as listed below:** • Loss of performance • Extremely high use of memory • Change of system timing • Inoperability of the plant **The procedures should only be executed if recommended by the service staff.**

General

This option writes additional information in the user dump. (This enables and configures "PageHeaps" in the operating system.)
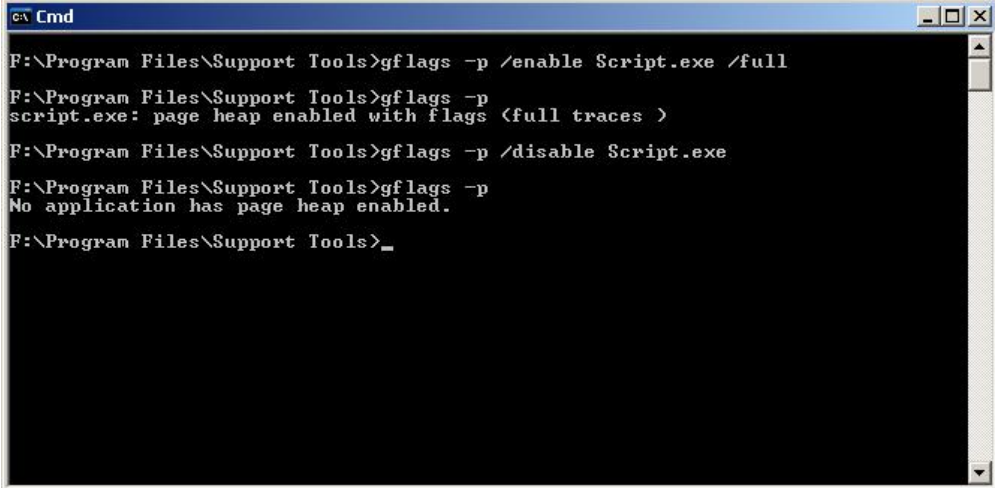
This information might be useful if you have memory swell or memory overflows on your system.

2.1 Enabling the "gflags" Tool

The Microsoft Support Tools must be installed in order to be able to use the "Global Flags Editor" (gflags.exe) utility. These are located in the "\Support\Tools" folder on your Windows CD.

Table 2-1

No.	Procedure
1.	Run the "Setup.exe" in the "\Support\Tools" folder and select "Complete" as the installation type.
2.	Under "Start > Run" you enter the "cmd" command to open a DOS box (command line interpreter).
3.	In the DOS box you select the path in which you have installed the Microsoft Support Tools and in which "gflags.exe" is located. (F:\Program Files\Support Tools in the example.)

No.	Procedure
4.	Now enter one of the commands below according to whether you want to enable or disable "gflags": The command for enabling "gflags" for the "script.exe": ***"gflags -p /enable script.exe /full"*** The command displaying the current settings of "gflags": ***"gflags -p"*** The command for disabling "gflags" for the "script.exe": ***"gflags -p /disable script.exe"*** The screenshot below shows how the commands given above are executed. In the first line "gflags" is enabled. In the second and third lines the change is queried. In the next line "gflags" is disabled and then the change is checked. **Note** In the case of memory overwrites you need the "/full" parameter. In the case of memory usage you do not need the "/full" parameter. Please check out the use of the "/full" parameter with our Technical Support.
5.	Restart the computer now to apply the settings in the Registry. As of now the additional information is written in the dumps. **Note** **It is mandatory to disable "gflags" after completing the examination**.