

How to configure daylight saving time for Microsoft Windows operating systems

Contributed by David Noel-Davies

Daylight saving time implementation varies from country to country. Some countries may not observe daylight saving time, while other countries may change the start dates and end dates for daylight saving time every year. This article describes how to update a Windows-based computer to use the latest global time zone rules as of August 2007. Thanks to Microsoft for this reg hack rather than sticking with the NZ\$5500 charged for a specific fix!•Microsoft Windows XP Home Edition•Microsoft Windows XP Professional•Microsoft Windows 2000 Professional Edition•Microsoft Windows 2000 Server•Microsoft Windows 2000 Advanced Server

INTRODUCTIONIn many countries, the start dates and end dates for daylight saving time (DST) change from year to year. Additionally, countries may change their policy of recognizing daylight saving time, or they may change the local time offset from Coordinated Universal Time (UTC). This article contains information about how to update the registry in Microsoft Windows so that it accommodates these types of ongoing changes. All computers should be updated with these time zone updates, regardless of whether they are located in a changing time zone, because some applications may use the local time zone database to perform date and time calculations for events elsewhere in the world.

The samples in this article update a Windows-based computer to the global time zone rules that are used in Windows as of August 2007. This article discusses how to configure the changes that are described in the following Microsoft Knowledge Base article: 933360 (<http://support.microsoft.com/kb/933360/>) August 2007 cumulative time zone update for Microsoft Windows operating systems

For more information about how daylight saving time changes may affect other Microsoft products, visit the following Microsoft Web site: http://support.microsoft.com/gp/cp_dst (http://support.microsoft.com/gp/cp_dst)Notes •This article does not apply to Windows Vista or to a future release of Windows Server Code name "Longhorn." These operating systems already contain the 2007 time zone information or will receive an update to the time zone information.•This article does not apply to Microsoft Windows Server 2003 because all service pack levels are currently supported. Also, an update is available that contains the 2007 time zone changes.Windows time zonesWindows stores time zone information in two locations in the registry. The first location is the time zone database in the following registry subkey: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time ZonesThe time zone database contains the configuration data for all time zones in Windows. Windows and other applications use the data to calculate local times.

The second location for time zone information is the following registry subkey:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformationControl sets in Windows store system configuration information such as drivers and services. The TimeZoneInformation registry subkey in the current control set contains the configuration data for the time zone that Windows is currently using. Windows copies this information from the time zone database when the time zone is selected. For more information about registry control sets and the current control set, click the following article number to view the article in the Microsoft Knowledge Base: 100010 (<http://support.microsoft.com/kb/100010/>) What are Control Sets? What is CurrentControlSet? When the time zone information is changed, both locations in the registry must be updated. The database must be updated to make sure that Windows and other applications have the most accurate time zone information available. Additionally, the TimeZoneInformation registry subkey in the current control set must be reloaded to make sure that the time zone information is the same as the information that is in the time zone database. We recommend that you update the time zone database first. Then, reload the TimeZoneInformation registry key. This procedure forces Windows to read the updated information in the database. The two methods that are explained in this article use this approach.Windows time zonesWindows stores time zone information in two locations in the registry. The first location is the time zone database in the following registry subkey: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time ZonesThe time zone database contains the configuration data for all time zones in Windows. Windows and other applications use the data to calculate local times.

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describes both methods.

Important Before you make any changes to the time zone settings, export the registry keys that are used for Windows time zones. Then, you can restore the time zone registry keys to their original state if it is necessary. To export the registry keys that used for Windows time zones, follow these steps: 1. Click Start, click Run, type regedit, and then press ENTER. 2. Locate and then click the following registry key: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones. 3. On the File menu, click Export. 4. In the File name box, type OriginalTZDatabase.reg, and then click Save. 5. Locate and then click the following registry key: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation. 6. On the File menu, click Export. 7. In the File name box, type OriginalTZInfo.reg, and then click Save. To import the registry keys to restore the default values, follow these steps: 1. Click Start, click Run, type notepad, and then press ENTER. 2. On the File menu, click Open. 3. In the Files of type box, click All Files. 4. Locate where you saved the OriginalTZDatabase.reg file, and then click Open. 5. Copy and paste the following line to the beginning of the file immediately after the line Windows Registry Editor Version 5.00: [-HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones] Note The minus sign at the beginning of this registry key name causes the deletion of this registry key and all its subkeys. The import process then uses the rest of the file to re-create the registry key and to populate it with the default values. For example, the beginning of the file should resemble the following: Windows Registry Editor Version 5.00 [-HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones] 6. On the File menu, click Save. 7. In the Save as type box, click All Files. 8. Click OriginalTZDatabase.reg, and then click Save. 9. Click Yes when you are prompted to replace the file. 10. Repeat the previous steps for the OriginalTZInfo.reg file. In step 5, add the following line to the beginning of the file immediately after the line Windows Registry Editor Version 5.00: [-HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation] Note For example, the beginning of the file should resemble the following: Windows Registry Editor Version 5.00 [-HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation] 11. To import the registry files, follow these steps: a. Click Start, click Run, type cmd, and then press ENTER. b. Type the following command, and then press ENTER: Regedit /s OriginalTZDatabase.reg_Path Note In this command, OriginalTZDatabase.reg_Path represents where the OriginalTZDatabase.reg file is located. c. Type the following command, and then press ENTER: Regedit /s OriginalTZInfo.reg_Path Note In this command, OriginalTZInfo.reg_Path represents where the OriginalTZInfo.reg file is located. 12. Restart the computer. Method 1: Change the time zone settings on multiple networked computers To change the time zone settings on multiple networked computers, create and import a registry file that contains all the updated time zone registry changes. Then, use Group Policy or another distribution mechanism to deploy the registry file to the computers. To do this, follow these steps. Step 1: Use Registry Editor to import the time zone updates

Warning Serious problems might occur if you modify the registry incorrectly by using Registry Editor or by using another method. These problems might require that you reinstall the operating system. Microsoft cannot guarantee that these problems can be solved. Modify the registry at your own risk.

Do one of the following, depending on whether you have English builds of Windows or non-English builds of Windows:
 • Create a registry file for English builds of Windows
 • Create a registry file for non-English builds of Windows
 Create a registry file for English builds of Windows

Note The following time zone registry file is for use only on English builds of Windows. Several of the values in registry keys have been localized. Therefore, these steps will only work on English builds of Windows. To create a registry file for non-English builds of Windows, go to the "Create a registry file for non-English builds of Windows" section.

To use Registry Editor to create a registry file that contains the time zone updates for English builds of Windows, follow these steps: 1. Click Start, click Run, type notepad, and then click OK. 2. Copy the following registry information, and then paste it into the Notepad document. [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Alaskan Standard Time] "Display"="(GMT-09:00) Alaska" "Dlt"="Alaskan Daylight Time" "Std"="Alaskan Standard Time" "MapID"="30,31" "Index"=dword:00000003 "TZI"=hex:1c,02,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,00,00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00,00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Alaskan Standard Time\Dynamic DST] "FirstEntry"=dword:000007d6 "LastEntry"=dword:000007d7 "2006"=hex:1c,02,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,00,00,00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00,00 "2007"=hex:1c,02,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,00,00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00,00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Armenian Standard Time] "TZI"=hex:10,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,03,00,00,00,00,00,00,00,00,03,00,00,00,05,00,02,00,00,00,00,00,00,00,00 "Std"="Armenian Daylight Time" "Display"="(GMT+04:00) Yerevan" "Index"=dword:8000004a [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Atlantic Standard Time] "Display"="(GMT-04:00) Atlantic Time (Canada)" "Dlt"="Atlantic Daylight Time" "Std"="Atlantic Standard Time" "MapID"="40,41" "Index"=dword:00000032

"TZI"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Atlantic Standard
Time\Dynamic DST] "FirstEntry"=dword:000007d6 "LastEntry"=dword:000007d7
"2006"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,\
00,00,00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2007"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,\
00,00,00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\AUS Eastern Standard
Time] "Display"="(GMT+10:00) Canberra, Melbourne, Sydney" "Dlt"="AUS Eastern Daylight Time" "Std"="AUS Eastern
Standard Time" "MapID"="20,21" "Index"=dword:000000ff
"TZI"=hex:a8,fd,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,03,00,00,00,05,00,03,00,00,\
00,00,00,00,00,00,0a,00,00,00,05,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Azerbaijan Standard Time]
"TZI"=hex:10,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,05,00,00,\
00,00,00,00,00,00,03,00,00,00,05,00,04,00,00,00,00,00,00,00 "Std"="Azerbaijan Standard Time" "Dlt"="Azerbaijan
Daylight Time" "Display"="(GMT+04:00) Baku" "Index"=dword:80000040
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Caucasus Standard Time]
"Display"="(GMT+04:00) Caucasus Standard Time" "Dlt"="Caucasus Daylight Time" "Std"="Caucasus Standard Time"
"MapID"="8,9" "Index"=dword:000000aa "TZI"=hex:10,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,00,00,00,00,00,00,00,00,\
00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Cen. Australia Standard
Time] "Display"="(GMT+09:30) Adelaide" "Dlt"="Cen. Australia Daylight Time" "Std"="Cen. Australia Standard Time"
"MapID"="-1,76" "Index"=dword:000000fa "TZI"=hex:c6,fd,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,03,00,00,00,05,00,03,00,00,\
00,00,00,00,00,00,0a,00,00,00,05,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Brazilian Standard
Time] "TZI"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,02,00,00,00,05,00,00,00,00,\
00,00,00,00,00,00,0b,00,00,00,01,00,00,00,00,00,00,00,00,00 "Std"="Central Brazilian Standard Time" "Dlt"="Central
Brazilian Daylight Time" "Display"="(GMT-04:00) Manaus" "Index"=dword:80000048
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Brazilian Standard
Time\Dynamic DST] "FirstEntry"=dword:000007d6 "LastEntry"=dword:000007d7
"2006"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,02,00,00,00,02,00,02,00,\
00,00,00,00,00,00,0b,00,00,00,01,00,00,00,00,00,00,00,00,00
"2007"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,02,00,00,00,05,00,00,00,\
00,00,00,00,00,00,0b,00,00,00,01,00,00,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Standard Time]
"Display"="(GMT-06:00) Central Time (US & Canada)" "Dlt"="Central Daylight Time" "Std"="Central Standard Time"
"MapID"="36,37" "Index"=dword:00000014
"TZI"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Standard
Time\Dynamic DST] "FirstEntry"=dword:000007d6 "LastEntry"=dword:000007d7
"2006"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2007"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Standard Time
(Mexico)] "TZI"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00 "Std"="Central Standard Time (Mexico)" "Dlt"="Central
Daylight Time (Mexico)" "Display"="(GMT-06:00) Guadalajara, Mexico City, Monterrey - New" "Index"=dword:80000043
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\E. Europe Standard Time]
"Display"="(GMT+02:00) Minsk" "Dlt"="E. Europe Daylight Time" "Std"="E. Europe Standard Time" "MapID"="4,5"
"Index"=dword:00000073 "TZI"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,03,00,00,\
00,00,00,00,00,00,03,00,00,00,05,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\E. South America Standard
Time] "Display"="(GMT-03:00) Brasilia" "Dlt"="E. South America Daylight Time" "Std"="E. South America Standard Time"
"MapID"="-1,80" "Index"=dword:00000041
"TZI"=hex:b4,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,02,00,00,00,05,00,00,00,00,\
00,00,00,00,00,00,0b,00,00,00,01,00,00,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\E. South America Standard
Time\Dynamic DST] "FirstEntry"=dword:000007d6 "LastEntry"=dword:000007d7
"2006"=hex:b4,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,02,00,00,00,02,00,02,00,\
00,00,00,00,00,00,0b,00,00,00,01,00,00,00,00,00,00,00,00,00
"2007"=hex:b4,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,02,00,00,00,05,00,00,00,\
00,00,00,00,00,00,0b,00,00,00,01,00,00,00,00,00,00,00,00,00


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00,00,00,00,00,00,de,07,03,00,00,00,1c,00,02,00,00,00,00,00,00
"2015"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,df,07,09,00,00,00,14,00,02,00,\
00,00,00,00,00,00,df,07,03,00,00,00,1b,00,02,00,00,00,00,00,00,00
"2016"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e0,07,0a,00,00,00,09,00,02,00,\
00,00,00,00,00,00,e0,07,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2017"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e1,07,09,00,00,00,18,00,02,00,\
00,00,00,00,00,00,e1,07,03,00,00,00,1f,00,02,00,00,00,00,00,00,00
"2018"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e2,07,09,00,00,00,10,00,02,00,\
00,00,00,00,00,00,e2,07,03,00,00,00,1e,00,02,00,00,00,00,00,00,00
"2019"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e3,07,0a,00,00,00,06,00,02,00,\
00,00,00,00,00,00,e3,07,03,00,00,00,1d,00,02,00,00,00,00,00,00,00
"2020"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e4,07,09,00,00,00,1b,00,02,00,\
00,00,00,00,00,00,e4,07,03,00,00,00,1b,00,02,00,00,00,00,00,00,00
"2021"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e5,07,09,00,00,00,0c,00,02,00,\
00,00,00,00,00,00,e5,07,03,00,00,00,1a,00,02,00,00,00,00,00,00,00
"2022"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,e6,07,0a,00,00,00,02,00,02,00,\
00,00,00,00,00,00,e6,07,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2023"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,00,00,00,00,00,00,00,\
00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Jordan Standard Time]
"TZI"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,05,00,05,00,01,00,00,\
00,00,00,00,00,00,03,00,04,00,05,00,17,00,3b,00,3b,00,e7,03 "Std"="Jordan Standard Time" "Dlt"="Jordan Daylight
Time" "Display"="(GMT+02:00) Amman" "Index"=dword:80000042
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Mexico Standard Time]
"Display"="(GMT-06:00) Guadalajara, Mexico City, Monterrey - Old" "Dlt"="Mexico Daylight Time" "Std"="Mexico
Standard Time" "MapID"="-1,85" "Index"=dword:0000001e
"TZI"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Mexico Standard Time 2]
"Display"="(GMT-07:00) Chihuahua, La Paz, Mazatlan - Old" "Dlt"="Mexico Daylight Time 2" "Std"="Mexico Standard
Time 2" "MapID"="34,35" "Index"=dword:00000000
"TZI"=hex:a4,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Middle East Standard Time]
"TZI"=hex:88,ff,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,06,00,05,00,17,00,3b,\
00,3b,00,e7,03,00,00,03,00,00,00,05,00,00,00,00,00,00,00,00,00,00,00,00
"Std"="Middle East Standard Time" "Dlt"="Middle East
Daylight Time" "Display"="(GMT+02:00) Beirut" "Index"=dword:80000041
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Montevideo Standard Time]
"TZI"=hex:b4,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,03,00,00,00,02,00,02,00,00,\
00,00,00,00,00,00,0a,00,00,00,01,00,02,00,00,00,00,00,00,00,00
"Std"="Montevideo Standard Time" "Dlt"="Montevideo
Daylight Time" "Display"="(GMT-03:00) Montevideo" "Index"=dword:80000049
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Mountain Standard Time]
"Display"="(GMT-07:00) Mountain Time (US & Canada)" "Dlt"="Mountain Daylight Time" "Std"="Mountain Standard
Time" "MapID"="34,35" "Index"=dword:0000000a
"TZI"=hex:a4,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Mountain Standard
Time\Dynamic DST] "FirstEntry"=dword:000007d6 "LastEntry"=dword:000007d7
"2006"=hex:a4,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2007"=hex:a4,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Mountain Standard Time
(Mexico)] "TZI"=hex:a4,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"Std"="Mountain Standard Time (Mexico)"
"Dlt"="Mountain Daylight Time (Mexico)" "Display"="(GMT-07:00) Chihuahua, La Paz, Mazatlan - New"
"Index"=dword:80000044 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time
Zones\Myanmar Standard Time] "Display"="(GMT+06:30) Yangon (Rangoon)" "Dlt"="Myanmar Daylight Time"
"Std"="Myanmar Standard Time" "MapID"="-1,74" "Index"=dword:000000cb
"TZI"=hex:7a,fe,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,00,00,00,00,00,00,00,00,\
00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Namibia Standard Time]
"TZI"=hex:88,ff,ff,ff,00,00,00,00,3c,00,00,00,00,00,09,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"Std"="Namibia Standard Time" "Dlt"="Namibia
Daylight Time" "Display"="(GMT+02:00) Windhoek" "Index"=dword:80000046
```


00,00,00,00,00,00,d6,07,0c,00,05,00,01,00,02,00,00,00,00,00,00,00
 "2007"=hex:20,fe,ff,ff,00,00,00,00,c4,ff,ff,ff,00,00,03,00,00,00,05,00,03,00,
 00,00,00,00,00,00,00,0a,00,00,00,05,00,02,00,00,00,00,00,00,00,00 3. On the File menu, click Save As. 4. Select a destination, and then type TZupdate.reg in the File name box. 5. In the Save as type box, click All Files, and then click Save. Create a registry file for non-English builds of Windows

To use Registry Editor to create a registry file that contains the time zone updates for non-English builds of Windows, follow these steps: 1. Use one client computer as a baseline for the registry file that you want to create or export in your environment. On that client computer, click Start, click Run, type notepad, and then click OK. 2. Copy the following registry information, and then paste it into the Notepad document.

Windows Registry Editor Version 5.00

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Alaskan Standard Time]
"MapID"="30,31"
"Index"=dword:00000003
"TZI"=hex:1c,02,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Alaskan Standard
Time\Dynamic DST]
"FirstEntry"=dword:000007d6
"LastEntry"=dword:000007d7
"2006"=hex:1c,02,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2007"=hex:1c,02,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Atlantic Standard Time]
"MapID"="40,41"
"Index"=dword:00000032
"TZI"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Atlantic Standard
Time\Dynamic DST]
"FirstEntry"=dword:000007d6
"LastEntry"=dword:000007d7
"2006"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2007"=hex:f0,00,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Standard Time]
"MapID"="36,37"
"Index"=dword:00000014
"TZI"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Central Standard
Time\Dynamic DST]
"FirstEntry"=dword:000007d6
"LastEntry"=dword:000007d7
"2006"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0a,00,00,00,05,00,02,00,\
00,00,00,00,00,00,04,00,00,00,01,00,02,00,00,00,00,00,00,00
"2007"=hex:68,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Eastern Standard Time]
"MapID"="38,39"
"Index"=dword:00000023
"TZI"=hex:2c,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,00,02,00,00,\
00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,00,00,00,00
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones\Eastern Standard
```


reload the TimeZoneInformation registry key

The registry must be updated in two locations. Importing the TZupdate.reg file updates the time zone database in the registry. Next, you must create a script that updates the TimeZoneInformation registry key in the current control set. You can deploy this script by using Group Policy or another deployment mechanism.

The script identifies the current time zone of the client computer and then reloads the TimeZoneInformation registry key with the updated information from the time zone database. Then, the script writes an event to the Application log of the client computer where the script was run.

To create the script file, follow these steps.

Note Microsoft provides programming examples for illustration only, without warranty either expressed or implied. This includes, but is not limited to, the implied warranties of merchantability or fitness for a particular purpose. This article assumes that you are familiar with the programming language that is being demonstrated and with the tools that are used to create and to debug procedures. Microsoft support engineers can help explain the functionality of a particular procedure. However, they will not modify these examples to provide added functionality or construct procedures to meet your specific requirements. 1.Click Start, click Run, type notepad, and then press ENTER.2.Copy the following code, and then paste it into the Notepad document.Set objSh = CreateObject("WScript.Shell")

```
'Get the StandardName key of the current time zone
szStandardName = objSh.RegRead("HKLM\SYSTEM\CurrentControlSet\Control\TimeZoneInformation\StandardName")

'Enumerate the subkeys in the time zone database
const HKEY_LOCAL_MACHINE = &H80000002
Set objReg=GetObject("winmgmts:{impersonationLevel=impersonate}!\.\root\default:StdRegProv")
szTzsKeyPath = "SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones"
objReg.EnumKey HKEY_LOCAL_MACHINE, szTzsKeyPath, arrTzSubKeys

'Step through the time zones to find the matching Standard Name
szTzKey = "<Unknown>"
For Each subkey In arrTzSubKeys
    If (objSh.RegRead("HKLM\" & szTzsKeyPath & "\" & subkey & "\Std") = szStandardName) Then
        'Found matching StandardName, now store this time zone key name
        szTzKey = subkey
    End If
Next

If szTzKey = "<Unknown>" Then
    'Write entry to the Application event log stating that the update has failed to execute
    objSh.LogEvent 1, "DST 2007 Registry Update and Refresh failed to execute on this computer. Time zones failed to
    enumerate properly or matching time zone not found."
    Wscript.Quit 0
End If

Dim process, processid, result, strUpdateCommand
Set process = GetObject("winmgmts:{impersonationLevel=impersonate}!\.\root\cimv2:Win32_process")

'Add time change privilege to the process object
process.Security_.Privileges.AddAsString "SeSystemTimePrivilege",True
strUpdateCommand = "control.exe timedate.cpl,/Z" & szTzKey

'Launch control.exe to refresh time zone information using the TZ key name obtained above
result = process.create(strUpdateCommand,Null,Null,processid)
If result <> 0 Then
objSh.LogEvent 1, "DST 2007 Registry Update and Refresh failed to execute on this computer. Unable to refresh the
Timezone database."
    Wscript.Quit 0
End If

'Get current display name of refreshed time zone
szCurrDispName = objSh.RegRead("HKLM\" & szTzsKeyPath & "\" & szTzKey & "\Display")

'Write entry to the Application event log stating that the update has executed
objSh.LogEvent 4, "DST 2007 Registry Update and Refresh has been executed on this computer." & chr(13) & chr(10) &
```

chr(13) & chr(10) & "Current time zone is: " & szCurrDispName & ". "3. On the File menu, click Save As. 4. Select a destination, and then type refreshTZinfo.vbs in the File name box. 5. In the Save as type box, click All Files, and then click Save. Step 3: Deploy the registry file and script by using Group Policy

The following example demonstrates how to create a startup script, copy files to a common location in the domain, and then create a Group Policy object (GPO). The GPO assigns the startup script to an organizational unit (OU). This example uses an Active Directory deployment together with the sample domain name contoso.com. 1. Click Start, click Run, type notepad, and then press ENTER. 2. Copy the following code, and then paste it into the Notepad document. @echo off

```
regedit /s \\contoso.com\NETLOGON\TZupdate.reg
```

```
cscript \\contoso.com\NETLOGON\refreshTZinfo.vbs
```

3. On the File menu, click Save As. 4. Select a destination, and then type DST2007Update_Win2k.cmd in the File name box. 5. In the Save as type box, click All Files, and then click Save. 6. Copy the following files to the Netlogon share folder of the domain controller that holds the PDC emulator role in the domain: •TZupdate.reg•refreshTZinfo.vbs•DST2007Update_Win2K.cmd 7. Wait until Active Directory replication occurs. Also, wait until the files and folders in the system volume (SYSVOL) shared folder replicate to domain controllers in the domain. 8. Click Start, click Run, type control admintools, and then click OK. 9. Double-click Active Directory Users and Computers. 10. Select an OU that contains the computers that you want to apply this script to. In this example, we will use an OU that is named DST2007-W2K. This example also assumes that this OU contains all computer accounts. 11. Right-click the DST2007-W2K OU, and then click Properties. 12. Click the Group Policy tab, click New, type DST Registry Update and Refresh, and then press ENTER. 13. Click Edit. The Group Policy Object Editor tool starts. 14. Expand Computer Configuration, expand Windows Settings, and then click Scripts (Startup/Shutdown). 15. Double-click Startup, and then click Add. 16. In the Script Name box, type the universal naming convention (UNC) path of the DST2007Update_Win2K.cmd file that is located in the Netlogon share. For example, type \\contoso.com\NETLOGON\DST2007Update_Win2K.cmd. 17. Click OK two times. Client computers that are within the DST2007-W2K OU will run the startup script the next time that they start. Method 2: Change the time zone settings on a single computer To change the time zone settings on a single computer, use the Time Zone Editor (Tzedit.exe). This tool lets you create and edit time zone entries for the date and time settings in Control Panel.

Notes •You must have local administrative credentials to change time zone registry information by using the Time Zone Editor. •We recommend this method to end-users. The Time Zone Editor does not provide the capabilities to add the Dynamic DST registry subkeys. •To obtain the list of time zones that have changed together with their DST start dates and end dates, use the information in the following Knowledge Base article: 933360 (<http://support.microsoft.com/kb/933360/>) August 2007 cumulative time zone update for Microsoft Windows operating systems The following file is available for download from the Microsoft Download Center:

Download the Tzedit.exe utility package now. (<http://download.microsoft.com/download/5/8/a/58a208b7-7dc7-4bc7-8357-28e29cdac52f/tzedit.exe>)

For more information about how to download Microsoft support files, click the following article number to view the article in the Microsoft Knowledge Base: 119591 (<http://support.microsoft.com/kb/119591/>) How to obtain Microsoft support files from online services Microsoft scanned this file for viruses. Microsoft used the most current virus-detection software that was available on the date that the file was posted. The file is stored on security-enhanced servers that help prevent any unauthorized changes to the file. Manually configure daylight saving time dates by modifying an existing time zone To manually modify time zone settings by using the Time Zone Editor, follow these steps: 1. Start Time Zone Editor. 2. In the Time Zones list, select a time zone, and then click Edit. For example, click (GMT-08:00) Pacific Time (US & Canada); Tijuana, and then click Edit. 3. In the Edit Time Zone dialog box, click to select the Automatically set Daylight Saving Time check box. 4. Specify the correct daylight saving time start date and end date. To do this, follow these steps: a. In the Start Day box, click the number of the day, the corresponding day of the week, and the month that you want. For example, click Second, click Sunday, and then click March. b. Select the time that you want to start daylight saving time. For example, select 2:00 A.M. c. In the Last Day box, click the number of the day, the corresponding day of the week, and the month that you want. For example, click First, click Sunday, and then click November. d. Select the time that you want to end daylight saving time. For example, select 2:00 A.M. e. In the Daylight Bias list, select how long you want the time to change when daylight saving time is in effect. For example, to set the clock forward 1 hour, leave the default setting of +1:00. f. Click OK. g. Select another time zone that has changed, and then repeat steps a-e. For more information about the time zones that have changed, click the following article number to view the article in the Microsoft Knowledge Base: 933360 (<http://support.microsoft.com/kb/933360/>) August 2007 cumulative time zone update for Microsoft Windows operating systems Repeat steps a through f for every time zone that has changed. When you have finished, click Close. h. Click Start, point to Settings, point to Control Panel, and then double-click Date/Time. i. Click the Time Zone tab. j. Select a different time zone than the (GMT-08:00) Pacific Time (US & Canada); Tijuana time zone, and then click Apply. k. Click (GMT-08:00) Pacific Time (US & Canada); Tijuana, and then click OK.

Note Steps j and k are required for the new changes to take effect. In this example, steps a through f update the time zone database. Steps h through k force Windows to read the time zone database and copy the updated information into the TimeZoneInformation registry key in the current control set. Manually configure daylight saving time dates by adding

a new time zone To manually add a new time zone by using the Time Zone Editor, follow these steps: 1. Start Time Zone Editor. 2. Click New. In the Time Zone Name box in the Edit Time Zone dialog box, type the time zone name in the following format: (GMT +/- 0x:00) TimeZone DisplayName For example, type (GMT-10:00) MyCountry1, MyCity1, MyCity2.

Note The maximum number of characters that you can type for the time zone name is 63 characters. 3. In the Abbreviation box, type the common name for the time zone. For example, type MyCountry Time Zone. 4. In the Offset from GMT box, select the appropriate offset from GMT time. 5. Click to select the Automatically set Daylight Saving Time check box. 6. Specify the correct daylight saving time start date and end date. To do this, follow these steps: a. In the Start Day box, click the number of the day, the corresponding day of the week, and the month that you want. For example, click Second, click Sunday, and then click March. b. Specify the time that you want to start daylight saving time. For example, select 2:00 A.M. c. In the Last Day box, click the number of the day, the corresponding day of the week, and the month that you want. For example, click First, click Sunday, and then click November. d. Specify the time that you want to end daylight saving time. For example, select 2:00 A.M. e. In the Abbreviation box at the bottom of the Edit Time Zone dialog box, type the name that you specified in step 3 f. In the Daylight Bias box, specify how long that you want the time to change when daylight saving time is in effect. For example, to set the clock forward by 1 hour, leave the default setting of +1:00. g. Click OK. h. Click Start, point to Settings, point to Control Panel, and then double-click Date/Time. i. Click the Time Zone tab. j. Select the new time zone you created, and then click Apply. How to confirm that the time zone changes have been applied By making sure that the changes have been applied to the TimeZoneInformation registry key, you can confirm that the time zone database and the current control set have been updated correctly. To verify that the time zone updates have been successfully applied to the computer, use one of the following methods. Method 1: Use the Date and Time item in Control Panel You can use the Date and Time item in Control Panel to make sure that the DST rule that is in effect on the computer matches the start dates and end dates that are described in the following Knowledge Base article: 933360 (<http://support.microsoft.com/kb/933360/>) August 2007 cumulative time zone update for Microsoft Windows operating systems This example uses Pacific Standard Time. The following configuration details for this time zone are copied from article 931836. Registry subkey name Display name Daylight name Standard name DST start DST end Value of TZI subkey Pacific Standard Time (GMT-08:00) Pacific Time (US & Canada) Pacific Daylight Time Pacific Standard Time Second Sunday in March at 02:00:00 First Sunday in November at 02:00:00

```
TZI=hex:e0,01,00,00,00,00,00,00,c4,ff,ff,ff,00,00,0b,00,00,00,01,
00,02,00,00,00,00,00,00,00,00,03,00,00,00,02,00,02,00,00,00,
00,00,00,00
```

Important Close all open applications before you start this test.

To verify the changes by using the Date and Time item in Control Panel, follow these steps: 1. Click Start, click Run, type control timedate.cpl, /Z, and then press ENTER. 2. Click the Time Zone tab, click to select the (GMT-08:00 Pacific Time (US & Canada) time zone, and then click Apply. 3. Click the Date & Time tab. 4. Set the date and time to one minute before the start of DST. For example, change the date and time to March 11, 2007 at 1:59 A.M. 5. Wait one minute. Confirm that the clock moves to 3:00 A.M. instead of 2:00 A.M. 6. Set the date and time to one minute before the end of DST. For example, change the date and time to November 4, 2007 at 1:59 A.M. 7. Wait one minute. Confirm that the clock moves to 1:00 A.M. instead of 2:00 A.M. 8. Set the date and time back to the correct setting. Method 2: Use the event log and the EventCombMT tool

You can use Method 1 if you used the registry file and the script methods. However, Method 1 is not practical in a network environment that contains multiple computers. Because the refreshTZinfo.vbs script writes an event to the Application log of the computer that is running the script, administrators can verify that the computer time zone information has been updated by determining if the following event is present: Event Type: Information
Event Source: WSH
Event Category: None
Event ID: 4
Date: Date
Time: Time
User: N/A
Computer: Computer_Name
Description: DST 2007 Registry Update and Refresh has been executed on this computer. Current time zone is: Time_zone_name

Additionally, administrators can determine whether the computer time zone information update has failed by determining

if the following event is present: Event Type: Information

Event Source: WSH

Event Category: None

Event ID: 1

Date: Date

Time: Time

User: N/A

Computer: Computer_Name

Description: DST 2007 Registry Update and Refresh failed to execute on this computer. Time zones failed to enumerate properly or matching time zone not found.

To search for these event entries in networked environments, administrators can use a tool such as EventCombMT. This tool searches for particular events on a computer.

The following file is available for download from the Microsoft Download Center:

Download the EventCombMT utility package now.

(<http://www.microsoft.com/downloads/details.aspx?familyid=7AF2E69C-91F3-4E63-8629-B999ADDE0B9E>)

For more information about how to download Microsoft support files, click the following article number to view the article in the Microsoft Knowledge Base: 119591 (<http://support.microsoft.com/kb/119591/>) How to obtain Microsoft support files from online services

Microsoft scanned this file for viruses. Microsoft used the most current virus-detection software that was available on the date that the file was posted. The file is stored on security-enhanced servers that help prevent any unauthorized changes to the file.

For more information about the EventCombMT tool, visit the following Microsoft Web site:

<http://www.microsoft.com/technet/security/prodtech/windows2000/secwin2k/swin2k09.msp>

(<http://www.microsoft.com/technet/security/prodtech/windows2000/secwin2k/swin2k09.msp>)

When you run the EventCombMT utility, use the following parameters to run the search and find the event that is generated by the Visual Basic script when the script successfully updates the time zone information.

ParameterValueDomainDomain nameLog Files to SearchApplicationEvent TypesInformationalEvent

ID4SourceWSHTextDSTWhen you run the EventCombMT utility, use the following parameters to run the search and find the event that is generated by the Visual Basic script if it fails. ParameterValueDomainDomain nameLog Files to

SearchApplicationEvent TypesErrorEvent ID1SourceWSHTextDSTREFERENCESFor more information, click the following article numbers to view the articles in the Microsoft Knowledge Base: 256986

(<http://support.microsoft.com/kb/256986/>) Description of the Microsoft Windows registry 933360

(<http://support.microsoft.com/kb/933360/>) August 2007 cumulative time zone update for Microsoft Windows operating

systems 310516 (<http://support.microsoft.com/kb/310516/>) How to add, modify, or delete registry subkeys and values by using a registration entries (.reg) file