

# Sync Time from External Time Source

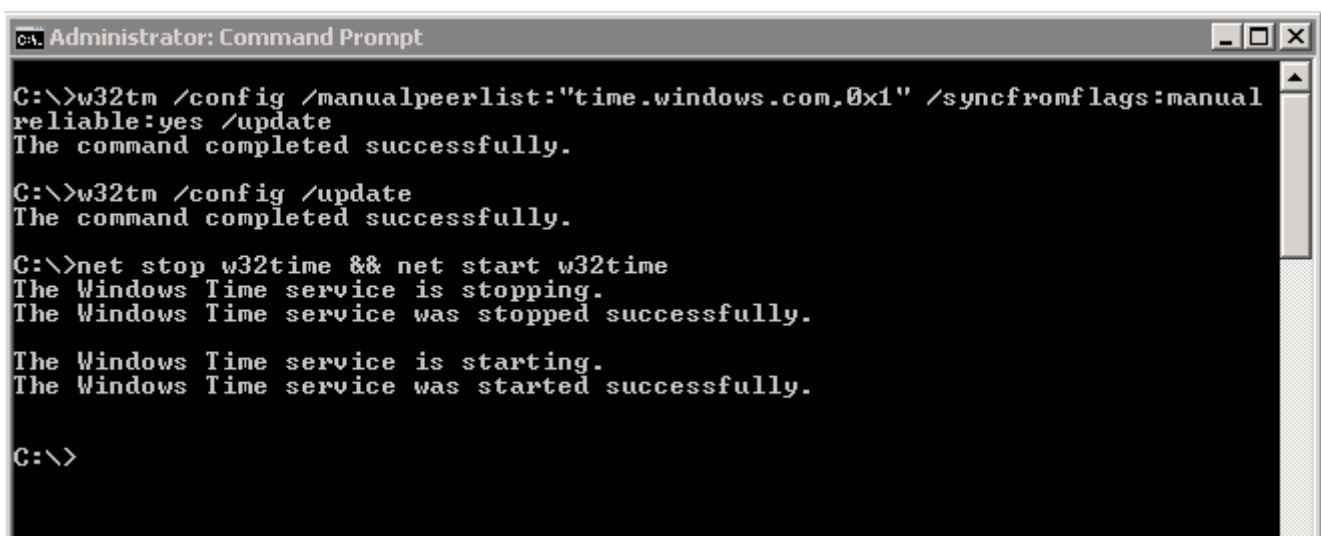
By default, all machines in the domain will sync time from the domain controller which is the internal time server - if you have more than one DC then time will sync from the DC that holds the PDC emulator FSMO role. To check which DC is PDC emulator in your domain you need to run **netdom /query fsmo** command like so:

```
C:\>netdom /query fsmo
Schema master                                192.168.1.100.0/24:100.0.0.100.COM
Domain naming master                         192.168.1.100.0/24:100.0.0.100.COM
PDC                                          192.168.1.100.0/24:100.0.0.100.COM
RID pool manager                            192.168.1.100.0/24:100.0.0.100.COM
Infrastructure master                       192.168.1.100.0/24:100.0.0.100.COM
The command completed successfully.

C:\>_
```

Once PDC emulator role is established there is few commands we need to run in order for time to sync, these are (run on PDC emulator):

1	w32tm /config /manualpeerlist:"time.windows.com,0x1"
2	/syncfromflags:manual /reliable:yes /update
3	w32tm /config /update
	net stop w32time && net start w32time



The screenshot shows a Windows Administrator Command Prompt window. The title bar reads "Administrator: Command Prompt". The command prompt shows the following sequence of commands and their outputs:

```
C:\>w32tm /config /manualpeerlist:"time.windows.com,0x1" /syncfromflags:manual  
reliable:yes /update  
The command completed successfully.  
  
C:\>w32tm /config /update  
The command completed successfully.  
  
C:\>net stop w32time && net start w32time  
The Windows Time service is stopping.  
The Windows Time service was stopped successfully.  
  
The Windows Time service is starting.  
The Windows Time service was started successfully.  
  
C:\>
```

If you need to add more than one NTP server then the peer list entries are space delimited, example:

Once completed Windows time service should begin synchronizing time on the domain controller(s) with external source. To view the time configuration you can use **w32tm /query /configuration** command. In my case, my time was not synced with external time server:

```
Administrator: Command Prompt

C:\>w32tm /query /configuration
[Configuration]

EventLogFlags: 2 <Local>
AnnounceFlags: 10 <Local>
TimeJumpAuditOffset: 28800 <Local>
MinPollInterval: 6 <Local>
MaxPollInterval: 10 <Local>
MaxNegPhaseCorrection: 172800 <Local>
MaxPosPhaseCorrection: 172800 <Local>
MaxAllowedPhaseOffset: 300 <Local>

FrequencyCorrectRate: 4 <Local>
PollAdjustFactor: 5 <Local>
LargePhaseOffset: 50000000 <Local>
SpikeWatchPeriod: 900 <Local>
LocalClockDispersion: 10 <Local>
HoldPeriod: 5 <Local>
PhaseCorrectRate: 7 <Local>
UpdateInterval: 100 <Local>

[TimeProviders]

NtpClient <Local>
DllName: C:\Windows\system32\w32time.dll <Local>
Enabled: 1 <Local>
InputProvider: 1 <Local>
CrossSiteSyncFlags: 2 <Local>
AllowNonstandardModeCombinations: 1 <Local>
ResolvePeerBackoffMinutes: 15 <Local>
ResolvePeerBackoffMaxTimes: 7 <Local>
CompatibilityFlags: 2147483648 <Local>
EventLogFlags: 1 <Local>
LargeSampleSkew: 3 <Local>
SpecialPollInterval: 3600 <Local>
Type: NT5DS <Local>

NtpServer <Local>
DllName: C:\Windows\system32\w32time.dll <Local>
Enabled: 1 <Local>
InputProvider: 0 <Local>
AllowNonstandardModeCombinations: 1 <Local>
```

and after I made the changes:

```
Administrator: Command Prompt
C:\>w32tm /query /configuration
[Configuration]
EventLogFlags: 2 <Local>
AnnounceFlags: 5 <Local>
TimeJumpAuditOffset: 28800 <Local>
MinPollInterval: 6 <Local>
MaxPollInterval: 10 <Local>
MaxNegPhaseCorrection: 172800 <Local>
MaxPosPhaseCorrection: 172800 <Local>
MaxAllowedPhaseOffset: 300 <Local>

FrequencyCorrectRate: 4 <Local>
PollAdjustFactor: 5 <Local>
LargePhaseOffset: 50000000 <Local>
SpikeWatchPeriod: 900 <Local>
LocalClockDispersion: 10 <Local>
HoldPeriod: 5 <Local>
PhaseCorrectRate: 7 <Local>
UpdateInterval: 100 <Local>

[TimeProviders]
NtpClient <Local>
DllName: C:\Windows\system32\w32time.dll <Local>
Enabled: 1 <Local>
InputProvider: 1 <Local>
AllowNonstandardModeCombinations: 1 <Local>
ResolvePeerBackoffMinutes: 15 <Local>
ResolvePeerBackoffMaxTimes: 7 <Local>
CompatibilityFlags: 2147483648 <Local>
EventLogFlags: 1 <Local>
LargeSampleSkew: 3 <Local>
SpecialPollInterval: 3600 <Local>
Type: NTP <Local>
NtpServer: time.windows.com,0x1 <Local>

NtpServer <Local>
DllName: C:\Windows\system32\w32time.dll <Local>
Enabled: 1 <Local>
InputProvider: 0 <Local>
AllowNonstandardModeCombinations: 1 <Local>
```

all was set to sync from **time.windows.com**. From workstation point of view to configure a client computer for automatic domain time synchronization:

1	w32tm /config /syncfromflags:domhier /update
---	--

and to check if its syncing:

1	w32tm /monitor
---	----------------

and to re-sync:

1	w32tm /resync
---	---------------

If there're any errors then these will be written to Event Viewer - please check if you're having issues.

