## Installing and configuring NTP in Windows 10/11

There have been many discussions about time synchronization on Windows computer systems and WSJTX. Some are using no synchronization, others various SNTP (Simple Network Time Protocol) applications (e.g. Dimension4, TimeSyncTool, etc.). However, a full NTP installation is available, simple and free and is recommended by the developers of WSJTX.

The reference NTP application ported to Windows is available from Meinberg Global (makers of network time appliances):

Downloaded Meinberg NTP from:

<<u>https://www.meinbergglobal.com/english/sw/ntp.htm#ntp\_stable</u>> as of this writing, the current version is ntp-4.2.8p15a-win31-setup.exe.

1) Run the installer.

Network Time Protocol Setup					
Choose Install Location					-
Choose the folder in which to install Network				1	
Setup will install Network Time Protocol in th click Browse and select another folder. Click	e following folder Next to continue	To install	in a diffe	erent fold	ler,
Destination Folder					
Destination Folder C:\Ham Programs\VITP\			Brov	NSE	
Destination Folder C:  Ham Programs  \\TP\ Space required; 5.6MB			Brow	NSE	
Destination Folder <u>C:\Ham Programs\\\TP\</u> Space required: 5.6MB Space available: 183.7GB		),	Brow	wse	
Destination Folder C: \Ham Programs\VTP\ Space required: 5.6MB Space available: 183.7GB Ilsoft Install System v2.46			Brow	WSE	

Because NTP stores user editable files in its directory, it should <u>not be</u> installed in C:\Program Files (x86). I typically install all of my amateur applications in C:\Ham Programs.

2) Select all of the components. The documentation is optional - it is links to web documents.

Con	figuration File Settings		
Loc	ation of configuration file:		
С	:\Ham Programs\NTP\etc\ntp.conf		
	United States of America You can specify up to 9 NTP servers (comma separated) you time.windows.com, time.apple.com, time.dol/dfare.com	want to use:	~
	Use fast initial sync mode (iburst)		

3) When presented with the "Setup Config Options", select "Create and initial configuration with the following settings" and then pick your country or region.

Because the installer only creates three servers, you will want to specify at least three additional servers to allow NTP to detect "false tickers". A good choice of public servers is: time.cloudflare.com, time.apple.com, and time.windows.com



4) Install NTP as a service in the System account. Other options will result in difficulties starting NTP.

5) Click "Next" to complete the installation.

6) "Finish" will close the installer and start NTP.

7) To verify NTP is running, click on the "Quick NTP Status" shortcut in the Meinberg Program Group and allow it to run for a few minutes:

remote	refid	st t	when	poll	q -p reach	delay	offset	jitter	
+lax2.us.ntp.li	131.215.220.143	2 u	24	64		58.790	+2.062	====== 3.398	
-64.44.115.65	149.56.19.163	3 u	26	64	377	42.373	+0.129	2.542	
-192.189.65.187	217.180.231.4	3 u	30	64	377	36.078	+1.226	1.219	
+time.cloudflare	10.103.8.17	3 u	34	64	377	6.407	+2.643	2.788	
<pre>*usmial-ntp-002.</pre>	.GPSs.	1 u	45	64	337	10.955	+0.826	1.900	
-40.119.6.228	10.0.6.24	3 u	36	64	377	40.713	+0.311	1.808	
(Auto-Refresh eve 	ery 10s CTR	L+C t	o Can	cel)					

This shows the three pool servers plus the three additional servers. NTP is "peered" to the server with the "\*" in front (in this case time.apple.com) and has two other valid "backup" servers (those with the "+"). The display shows that each server is being polled every 64 seconds and that five of the six servers was successfully polled each of the last eight minutes.

7) There are a some other refinements that will make it easier to work with NTP things ... Navigate to the Meinberg program group in the Windows Menu, right click on "Edit NTP configuration", select More, and Open file location. Right click on the Edit NTP configuration shortcut, select Properties, Advanced and check Run as Administrator. Then navigate to "Service Control" and set each of those (three) shortcuts to also Run as Administrator.

Optional: Meinberg offer a Windows GUI application for monitoring and controlling NTP. Meinberg Time Server Monitor can be dowloaded from: <<u>https://www.meinbergglobal.com/english/sw/ntp-server-monitor.htm</u>>