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TOM SEPE

# Show Machine Setup For Permanent and Temporary Art Installations (Windows 10)

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- 🏷 General (<https://tomsepe.com/sepeblog/category/general/>)

I've compiled this step-by-step guide of how to make tweaks to your Windows 10 system as a "Show Machine". When setting up a computer to use for a show, whether that is a just a single evening event or a permanent installation, steps need to be taken to assure that nothing in the computer is going to disrupt the show. There is nothing worse than having a system window pop up on the projection surface, or an unwanted notification sound chiming through the speakers, or worse to have the system automatically start updating itself and rebooting! In addition there are optimization settings that can help your computer run faster, and other settings that can make sure your computer is able to send and receive the data it needs depending on what you are doing. This is not necessarily a guide for your development environment, although many tips will be useful, it is for creating a fast and lean, purpose built machine for temporary or permanent art installations. I primarily use TouchDesigner but these tips also work for other Audio or Video programs, as well as gaming machines. There are some links at the bottom for additional guides and resources. I will update this periodically and please send me your comments or additional resources.

Some shortcuts and conventions I use in this document: Many settings are accessed by clicking on the Windows "Start" icon in the lower left of the task bar. Which of course can also be accessed by pressing the Windows icon on the keyboard between the CTRL and ALT keys. In this guide I will just be writing the full way to access a setting with "Start > Control Panel > Turn Windows Features On Or Off" etc. etc. But sometimes you can just press the Start key and begin typing the name of the setting and get there faster. Microsoft is getting rid of the familiar "Control Panel" in favor of the Windows Settings App, but both are referenced in this document. Some settings are accessed by running commands such as "netplwiz" which bring up settings that are not easily found through the new Windows 10 control panel. There are also instructions for editing Windows Registry keys, which is kind of like getting under the hood of the car a bit more, and you should always be careful when messing with these. Also your registry key edits may get deleted if you update Windows. You can find more info about registry keys here:

<https://windowsmaximizer.com/blog/about-windows-registry-keys/> There are also other optimization settings further in the list that may or may not make much of a difference, or may not be necessary, your mileage may vary, experiment at your own risk.

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## Basic Setup:

### Update Windows and Drivers:

The first thing you will want to do when setting up a new system or if you are just about to prep an old machine is make sure that Windows and any special drivers you need are up to date. “New” computers out of the box may still be months behind current OS updates. Most importantly your graphics card driver, your network adaptor and any audio device drivers, or specialty hardware drivers should be up to date.

You may also choose to wipe the drive and do a clean install on Windows 10, just to make sure there aren’t any strange things hiding on your drive (such as malware), or previous system tweaks you forgot about.

#### 1. Start > Update & Security > Windows Update

- Manually Check for Updates, let them download and install.
- Reboot
- Manually Check for updates again!
- Continue this process of updating and rebooting until you are 100% up-to-date.
- You’ll want to turn off auto-updates after this (see further down below).

## User Account:

It is a good idea to start with a brand new User Account, perhaps something more generic that does not have any of your personal information associated with it. This might be an account that museum staff or any other technicians will also have access to. It is also a

good way to free up hard drive space because you can delete any other accounts and files that are not needed. There are some default accounts that you cannot or should not delete, but they can be disabled.

### 1. Create a New User:

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- Windows key + R to open the Run command
- Type: lusrmgr.msc
  - Action > New User...
  - Add new user, name, password
  - Uncheck “User must change password at the next logon”
  - Check “Password never expires”
  - Click on “Create”
  - Right click on user, select *Properties* > Member Of Tab
    - 1. Click Add Button, enter “Administrators”
    - 2. Click “Check Names” button
    - 3. Click OK
- Logout and back in again as the new user
  - Windows login SETUP will begin and you can pretty much say no to everything Windows wants to activate:
    - Cortana: No
    - Find my device: NO
    - Inking and typing: No
    - Advertising ID: No
    - JUST SAY NO!!!!
- Open lusrmgr.msc again and disable unused Windows 10 Default Accounts (such as WDAGUtility, Guest and DefaultAccount), by right clicking on them and setting them as disabled.
- Delete Any other Users you have created previously to free up hard drive space, or at least disable them.

## Turn on Auto Log-in:

You will want your machine to automatically login on startup so that your application can begin playing immediately.

1. Start > type in: `netplwiz.msc`

- Uncheck “Users must enter name and password to use this computer” if not visible, edit the registry key as detailed below (from <https://winaero.com/blog/sign-in-automatically-to-user-account-in-windows-10-version-2004/>)  
[https://winaero.com/blog/sign-in-automatically-to-user-account-in-windows-10-version-2004/\(\)](https://winaero.com/blog/sign-in-automatically-to-user-account-in-windows-10-version-2004/)
- Start > run > `regedit.msc`
  - Go to the following Registry key.  
`HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion>PasswordLess\Device`. See how to go to a Registry key with one click.
  - On the right, modify or create a new 32-Bit DWORD (Note: Even if you are running 64-bit Windows you must still create a 32-bit DWORD value)
    - Value name: `DevicePasswordLessBuildVersion`
    - Change its value to 0. Normally, it is set to 2 by default, but this may vary from build to build. Set it to 0 anyway.
  - Now, run `netplwiz` again. The checkbox will be there!

## Auto launch an application at system start up:

This is necessary for your project to automatically run from a restart or on powerup. It also allows you to tell the client to just “turn it off and then on again” to handle most intermittent or sporadic problems. There are different ways to accomplish this.

1. **Use Task Scheduler:** <https://www.windowscentral.com/how-create-automated-task-using-task-scheduler-windows-10> (<https://www.windowscentral.com/how-create-automated-task-using-task-scheduler-windows-10>)
  - Start > Task Scheduler > Action > Create Basic Task

- Name Your Task
- Set for “When I log on” for TD toes files.
- Select Start a Program.
- In Program/script, enter C:\Program Files\Derivative\TouchDesigner\bin\TouchDesigner.exe (<https://tomsepe.com>)
- In Add Arguments type the path to your TOE file:  
C:\projects\my\_amazing\_project\final\_project.toe
- After you have created the task, in the properties on the “Triggers” Tab. I recommend 30 seconds minimum before opening TD as I have had issues with TD not launching without a delay.

## 2. Auto relaunch an application on crash:

- RestartOnCrash app: This is a great tool that you can use to restart any application automatically in the event of a crash or hang. it can also be used to launch an application at startup.
- <http://www.softpedia.com/get/System/File-Management/R...> Crash.shtml ([http://www.softpedia.com/get/System/File-Management/R...Crash.shtml](http://www.softpedia.com/get/System/File-Management/R...))

## 3. nVoid Stalker App:

- This is a specific app written in C++ for Touchdesigner TOE files
- you can read more about it here:  
<https://interactiveimmersive.io/blog/deployment/touchdesigner-monitoring/> (<https://interactiveimmersive.io/blog/deployment/touchdesigner-monitoring/>)
- Download here: [h](https://github.com/nVoid/Stalker) (<https://github.com/nVoid/Stalker>)<https://github.com/nVoid/Stalker> (<https://github.com/nVoid/Stalker>)

# Configure Task Scheduler to reboot the machine daily:

I think it is a good idea to schedule a daily reboot of Windows. Some people may not find this necessary... But consider that if an application or the system does hang, then this program will force reboot the whole computer. Which could save you a visit from a technician. (In addition to this you can use a managed PDU so you can either cycle power to the computer from any computer on the network in the event of a crash or hang. but that requires additional hardware and is outside the scope of this article.)

## 1. Open Sublime Text

- and save the following contents as a Batch file named “reboot.bat” (this script will force reboot the computer).
- **shutdown.exe /r /t 00 /f**
- Configure this batch file to run via Task Scheduler once per day, generally a couple hours before opening.

## 1. Bios Settings:

- Boot into the BIOS (generally pressing F2 at startup but could be F8 or F10 or F12 depending on the manufacturer)  
[\(https://www.pcworld.com/article/241032/how-to-enter-your-pcs-bios.html\)](https://www.pcworld.com/article/241032/how-to-enter-your-pcs-bios.html)

- Disable OEM LOGO splash screen if possible.
- Enable Wake On Lan
- *Power options > enable Power On After Power Loss*
  - This is so important! This allows the client to power cycle the computer and the machine will just auto boot, or if there is a power outage, you don't have to go and turn on the machine manually!
- This is also where you can select a different boot device such as a USB thumb drive, for instance if you wanted to colon your computer using Clonezilla: [\(https://clonezilla.org/clonezilla-live.php\)](https://clonezilla.org/clonezilla-live.php)
- If you are going to clone your computer, make sure you DISABLE YOUR TOUCHDESIGNER LICENSE FIRST. Otherwise your license becomes

trapped, and you won't be able to disable it or transfer it to another computer.

## 2. Create Power Plan:

- Another important one! You don't want the computer going to sleep and shutting off the projectors, touchscreens, or whatever! (<https://tomsepe.com>)
- Start > Control Panel > Power Plan
  - Select "High Performance"
  - Click "Change Plan Settings"
    - Turn Off display: Never
    - Sleep: Never

## 3. General:

- Before leaving the job site, be sure to Logout of your gmail, delete browser history, cookies, cache, log out of any other services (gmail, github, evernote, etc.) and delete any login accounts or personal information.
- Set the time to the correct timezone for the installation location!

## 4. Software Installs: (this depends on your installation of course)

- Download Chrome make default browser
- Install Text Editor of choice:
  - Sublime Text
  - Visual Studio Code
  - Notepad++
- Install Github Desktop or Command line
- Install VNC software (ultraVNC):
  - Double-click on installer
  - Accept EULA and click NEXT
  - Install location:
    - keep DEFAULT Location and click NEXT
  - Select Components (make sure these are selected):
    - UltraVNCServer, UltraVNC Viewer, UltraVNC Repeater
  - Select Start Menu Folder:

- Keep Default and Click NEXT
  - Select Additional Tasks (make sure these are selected):
    - Register UltraVNC and a service
    - Start or restart UltraVNC service
    - Associate UltraVNC Viewer with the .vnc file extension (<https://tomsepe.com>)
    - Add Virtual monitor driver
  - Click NEXT, then click INSTALL
  - When finished, the blue UltraVNC icon should appear in the task bar tray (click on the small up arrow in bottom right of task bar to reveal).
  - Right-click on the Icon and select “Admin Properties”
  - Set VNC Password to be “redondo123”
  - Click “Apply” then “OK”
- 
- I want to add some insights about Windows 10 VNC viewing. If you have trouble seeing a mouse cursor on a Windows 10 machine with no mouse attached, you can enable the “mouse control using Numpad keys” feature:
1. Open start menu.
  2. Click the “Settings” cog
  3. Click the “Ease of Access” menu item
  4. Select “Mouse” in the left pane
  5. Enable “Use numeric pad to move mouse around the screen”
- This forces Windows to show a mouse cursor even with no physical mouse attached thus VNC life much easier. Bonus: you can actually see “Resize window” cursors on the windows!
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5. Install Touchdesigner
  6. Install TExt Editor (I prefer Sublime Text 3 (<https://sublimetext.com/3>))
  7. Install Remote Viewing Software
    - LogMeIn host

- Teamviewer
  - AnyDesk
8. Install Python 3.7.9 <https://www.python.org/downloads/release/python-379/>  
(<https://www.python.org/downloads/release/python-379/>)
9. Download and install Node.js <https://nodejs.org/en/> (<https://nodejs.org/en/>)
10. Install node-red <https://nodered.org/docs/getting-started/windows>  
(<https://nodered.org/docs/getting-started/windows>)
- run Windows Powershell as administrator
  - npm install -g --unsafe-perm node-red
11. Max MSP
12. Arduino IDE
13. Adobe Acrobat (for reading PDFs)
14. VLC
15. Audio Equipment Drivers
16. Video Camera Drivers
17. Etc Etc Etc as needed.

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## Windows Optimizations:

### 1. Disable Automatic Windows Software Updates:

<https://www.windowscentral.com/how-stop-updates-installing-automatically-windows-10> (<https://www.windowscentral.com/how-stop-updates-installing-automatically-windows-10>)

- Disable automatic updates on Windows 10 permanently **Group Policy**

#### Method

- Start > gpedit.msc and select the top result to launch the Group Policy Editor.
- Navigate to the following path: Computer Configuration > Administrative Templates > Windows Components > Windows Update
- Double-click the Configure Automatic Updates policy on the right side.
- Check Disable to turn off the Policy

- Click Apply, then OK.
- Disable automatic updates on Windows 10 permanently **Registry Method:**
  - Start > regedit and select the top result to launch the Registry Editor.
  - Navigate to the following path:  
*HKEY\_LOCAL\_MACHINE\SOFTWARE\Policies\Microsoft\Windows*
  - Right-click the Windows (folder) key, select New, and then click the Key option.
  - Name the new key **WindowsUpdate** and press **Enter**.
  - Right-click the newly created key, select New, and click the Key option.
  - Name the new key AU and press Enter.
  - Right-click on the right side, select New, and click the DWORD (32-bit) Value option.
  - Name the new key: NoAutoUpdate and press Enter.
  - Double-click the newly created key and change its value from 0 to 1.
  - Click OK, and Restart.

## 2. Turn off Windows Notifications:

- Settings Method:
  - Start > Settings System > Notifications and Actions
    - Turn Off Get notifications from apps and other senders
    - Turn Off Show me the Windows welcome experience after updates...
    - Turn Off Get tips, tricks, and suggestions as you use Windows
- Registry Editor:
  - Open regedit.msc
  - Goto:  
*HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\PushNotifications*
  - Double-click the “ToastEnabled” DWORD and change the “Value data” to “0”

## 3. Disable “Get Even More Out of Windows” in Windows 10:

- WINDOWS 10 VERSION 2004 and later adds a check box on the Notifications and Actions settings page that will allow you to disable this.

Otherwise try some of the regedit solutions below to make sure this is off. It will ruin your projection installation randomly one morning otherwise!

- <https://winaero.com/blog/disable-get-even-more-out-of-windows-10> (<https://winaero.com/blog/disable-get-even-more-out-of-windows-in-windows-10>) (<https://tomsepe.com>)
  - Start > regedit.msc
  - Go to the Registry key:  
 HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\UserPr
    - On the right, modify or create a new 32-Bit DWORD (Note: Even if you are running 64-bit Windows you must still create a 32-bit DWORD value.)
      - set Value Name = *ScoobeSystemSettingEnabled*
      - Set its value data to 0 to disable the screen.
      - A value data of 1 will enable the feature.
    - Sign Out and Sign in again to take effect.
- **2nd option:** <https://docs.google.com/document/d/1dGcHNXCyniFtobTLg-5dlmuQWlsS6nbMF-twUwrp3eY/edit> (<https://docs.google.com/document/d/1dGcHNXCyniFtobTLg-5dlmuQWlsS6nbMF-twUwrp3eY/edit>)
- **3rd option:** <https://answers.microsoft.com/en-us/windows/forum/all/disable-get-even-more-out-of-windows/3193a082-09b9-416a-843b-0d192b20ffed> (<https://answers.microsoft.com/en-us/windows/forum/all/disable-get-even-more-out-of-windows/3193a082-09b9-416a-843b-0d192b20ffed>)
  - :: Request admin CMD prompt, needed for the next line:
  - Net session >nul 2>&1 || (PowerShell start -verb runas '%~0' &exit /b)
  - REG ADD  
 "HKEY\_LOCAL\_MACHINE\Software\Policies\Microsoft\Windows\CloudCo  
 /v DisableWindowsConsumerFeatures /t REG\_DWORD /d 1 /f

**4. Enable TCIP Services & Turn off unused Features:** <https://teckangaroo.com/tcpip-services-how-to-enable-tcp-ip-services-on-windows-10/>

(<https://teckangaroo.com/tcpip-services-how-to-enable-tcp-ip-services-on-windows-10/>)

- Start > Control Panel
  - Switch view to Category
  - Click Programs > Turn Windows Features On or Off (<https://tomsepe.com>)
    - Enable:
      - Simple TCPIP Services
      - Telnet
    - Disable:
      - Internet Explorer
      - Media Features (windows media player)
      - Print and Document services
      - Microsoft XPS Document Writer
      - Microsoft Print to PDF

## 5. Allow auto sign-in from sleep (just in case):

- Windows > Settings > Accounts > Sign in Options:
  - Require sign in from sleep: Never
  - Allow Windows to automatically lock your device: Off
  - Use my sign in to automatically finish updates: On

## 6. Privacy etc:

- Windows:
  - Windows Settings > Privacy > General
    - Turn Off: Let apps use advertising ID to make ads more interesting...
    - Turn Off: Let Windows track app launches to improve Start and search results
  - Windows Settings > Privacy > Location
    - Turn Off location services.
  - Windows Settings > Privacy > Notifications
    - Let apps access my notifications: Off
  - Windows Settings > Privacy > Inking and typing personalization

- This is a Windows keylogger and handwriting recognition spyware.
- Windows Settings > Voice Activation
  - Turn OFF

## 7. Disable edge swipes (touchscreen only): [\(https://tomsepe.com\)](https://tomsepe.com)

[\(https://www.tenforums.com/tutorials/48507-enable-disable-edge-swipe-screen-windows-10-a.html\)](https://www.tenforums.com/tutorials/48507-enable-disable-edge-swipe-screen-windows-10-a.html)

- Open Local Group Policy Editor
- On Left Pane Navigate to: Computer Configuration / Administrative Templates / Windows Components / Edge UI
- Double Click on Allow Edge Swipe policy to edit
- Select “Disabled”

## 8. Allow Remote Connections:

- Start > Control Panel > System > Advanced system settings > Remote Tab
  - Allow Remote Assistance
  - Allow Remote Connections
  - Uncheck “Only Allow NLA”

## 9. Turn Off Windows Defender: (this may be controversial for some)

- Start > Windows Defender
  - Turn it all off. Best Option.
  - You can also opt to leave it on and add Touchdesigner or other software such as any remote login software to a whitelist of programs you will allow connections from. If you have multiple computers in your installation that you are talking between you don't want a firewall blocking your comms. <https://www.digitalcitizen.life/how-change-windows-firewalls-list-allowed-blocked-apps/>
- Anti-Virus Software may also need to be turned off if it is blocking any ports.

## 10. Turn Off System Protection:

- Control Panel > System > Advanced System Settings > System Protection Tab
  - If System Protection is turned on for any drive then turn it OFF.
  - More info here: <https://www.tenforums.com/tutorials/4533-turn-off-system-protection-drives-windows-10-a.html>

11. Appearance: (https://tomsepe.com)

- Show file extensions and hidden files:
  - Open File Explorer: Select View
  - Or Control Panel > File Explorer Options > View Tab
    - Check Always Show Menus
    - Check Show hidden Files, Folders and Drives
    - Check Hide Empty Drives
    - Uncheck Hide extensions for known file types
- Taskbar:
  - Unpin unnecessary apps from taskbar and add your own
    - Right click on taskbar
      - Unclick "show people"
      - Goto Settings
        - Automatically hide all modes
        - Lock the Taskbar
- Visual Effects Performance:
  - Control Panel > System > Advanced System Settings > Performance Options > Visual Effects
    - Uncheck everything, Keep these three enabled:
      - Show thumbnails instead of icons
      - Show window contents while dragging
      - Smooth edges of screen fonts
- Desktop:
  - Right Click on desktop
    - Uncheck Show Desktop Icons
- Displays:
  - Scale and layout 100%

## 12. Turn off unneeded Task Scheduler items:

### 1. Open Task Scheduler

- Disable Nvidia telemetry
- Turn off Google Updates
- Acrobat updates (https://tomsepe.com)
- Basically turn off everything except your task for starting your Program File

## 13. Disable Startup Programs:

- Start > Task Manager > Startup Tab
- Right Click and select disable for any programs you don't want or need:
  - Cortana
  - Windows Security Notification Icon
  - Skype
  - Spotify
  - etc. etc.
  - Search for info about programs you could disable here:  
<http://www.shouldiblockit.com/> (<http://www.shouldiblockit.com/>)

## 14. Disable Gui Boot and shorten boot timeout:

- Start > Cmd > msconfig.exe
  - Check "No GUI boot"
  - Change Timeout to 5 seconds or even Zero.
  - Click apply then ok

## 15. GAME MODE: (tells windows that app is a game, & throttles other processes)

- Get windows version: Cmd: winver
- Open new control panel: settings: gaming
- Open TD. Windows key + G (open gamebar)
- Turn game mode on click button

## 16. Delete the Windows.old Folder:

- If you upgraded from Windows 7 or 8 to 10 then you can delete the old system files if you have no intention of going back:
- Start > Control Panel > Administrative Tools > Disk Cleanup

- Select Drive C
  - Click “Cleanup System Files”
  - Click Ok again
  - Make Sure “Previous Windows Installations” and “Temporary Windows Installation Files” are checked, plus anything else you want to delete. (<https://tomsepe.com>)
  - Click “OK” and “Delete Files”
- 

## ADDITIONAL TWEAKS:

### 1. Turn off Focus Assist:

- Start > Settings icon > System > Focus Assist
- Turn it to Alarms only
- Select “during these times” and set the hours to be the show hours when you don’t want to get notifications

### 2. Disable Mouse Acceleration:

- Start > Control Panel > Mouse > Pointer Options
- Untick Enhance Pointer Precision (this is mouse acceleration)
- Also try adjusting the Pointer Speed slider here till you are happy

### 3. Disable Windows Update Delivery Optimization:

- Do this if you did not edit the Group Policy for Automatic Updates
- Start > Settings > Update & Security > Windows Update
  - open Advanced Options
  - Click Choose How Updates are Installed, select Choose how updates are delivered
  - Disable the toggle under Updated from More than One Place

### 4. Disable or just Uninstall OneDrive:

- Start > Add or Remove Programs
- Under Apps and Features
  - Select Microsoft OneDrive
  - Click on Uninstall

- You may also find some OneDrive related stuff in Task Scheduler even after Uninstalling. You can disable those.

## 5. Optimize Processor Scheduling:

- Start > Control Panel > System > Advanced System Settings > Advanced Tab >
  - Under Performance Click Settings > Advanced Tab (<https://tomsepe.com>)
  - Set Processor Scheduling to Programs
  - Click Apply then OK

## 6. HDD & SSD service optimizations:

- Turn Off Search indexing <https://www.howtogeek.com/howto/10246/how-to-disable-search-in-windows-7/>
  - (<https://www.howtogeek.com/howto/10246/how-to-disable-search-in-windows-7/>)
    - Open services.msc
      - Scroll to either Indexing Service or Windows Search and double click
      - Set Startup Type to: Disable
      - Click "Stop"
      - Hit Apply and OK
      - Reboot to take effect
- Disable Hibernate:
  - Hibernate mode is set up by default to allow the hard drive disk to load the programs faster instead of booting the system, but it is unnecessary for an SSD system drives.
  - Search for CMD in the start menu search bar
  - Right click CMD and Run as Admin & Type:
    - **powercfg -h off**
    - Press Enter
- Set Page File: <https://www.boredgamer.co.uk/2018/03/20/windows-10-ultimate-gaming-tweak-guide/>
  - (<https://www.boredgamer.co.uk/2018/03/20/windows-10-ultimate-gaming-tweak-guide/>)

- Start > Control Panel > System > Advanced System Settings > Advanced Tab
  - Under Performance, Click Settings
  - Under the Advanced Tab, Virtual Memory Click: Change
  - Uncheck Automatically manage
  - PLEASE NOTE THAT I RECOMMEND SETTING THIS TO AN SSD  
(<https://tomsepe.com/>)  
DRIVE, however this may shorten the lifespan of the Drive, I believe it's minimal though (<https://superuser.com/questions/1085806/what-exactly-is-the-negative-impact-of-placing-page-file-on-ssd>).
  - Set a single one of your Drives to **SYSTEM MANAGED SIZE**
  - Click Set
  - All other Drives should be set to None (unless if the pagefile you set wasn't on your OS drive & you want to leave 300mb on your main boot drive for "crash info & recovery")
- **Disable Entire Hard Drive Indexing** (If you completely disabled indexing by disabling the Windows Search Service above then this step is unnecessary and the other method is much faster anyways!):
    - File Explorer > This PC > Right Click on "C" Disk > Select: Properties
      - Make sure "Compress this Drive to save space" is unchecked
      - Under General Tab uncheck "Allow files on this drive to have contents indexed in addition to file properties"
      - Click Apply
        - Select "Apply to subfolders" option
      - This will take time to run, you can let it do its thing in the background.

**7. Disable USB Power Management:** (this can really help with USB audio devices, but it is also just one less thing the computer has to do)

- Start > Device Manager > Universal Serial Bus Controllers
  - Doubleclick on each USB Root Hub heading
    - Click on Power Management Tab and uncheck "Allow the Computer to turn off this device to save power"

**8. Disable Windows Background Apps:**

- Start > Settings > Privacy > Background Apps
  - Switch off apps you are not using and do not wish to run in background when not using

## 9. Disable Windows Telemetry Diagnostic Data:

- First Delete Windows 10 Diagnostic data (<https://tomsepe.com/how-to-disable-windows-10-diagnostics-and-feedback-connected-user-experiences-and-telemetry> (<https://endurtech.com/how-to-disable-windows-10-diagnostics-and-feedback-connected-user-experiences-and-telemetry>))
  - We begin by deleting the data that has already been collected. To do this, press “Windows Key + S” and type “privacy” and click on “Privacy settings”.
  - On the left side, click on “Diagnostics & feedback” then scroll down to the “Delete diagnostic data” section and press the “Delete” button there.
- Disable the Connected User Experiences and Telemetry Service:
  - Now that you have deleted the previously collected data we can disable the Connected User Experiences and Telemetry service so that it no longer runs. To do this, press the “Windows Key + R” and type “services.msc”. Scroll down and locate the “Connected User Experiences and Telemetry” service and double click on it to open its properties. Change the “Startup type” from “Automatic” to “Disabled”.
  - If the service is still running you may click on “Stop”, then “Apply”, then “OK”. Note, you may need to restart your computer to have these changes take effect.

## 10. Update Network Adapter Driver:

- Start > Device Manager
  - Click triangle next to Network Adaptors
  - Right Click on Device Right click and goto Update Driver
  - Search Automatically For Driver

## 11. Disable Restrictive Services:

- Press Windows Key + R

- Type **services.msc**
- Look for the Service you want to disable and right click on it.
  - Click properties then click Startup type, Select Disabled, click 'OK'. Stop service if running
- You can turn these off if you don't use them: (https://tomsepe.com)
  - Windows Search (This will disable Windows Search too, keep it if you use it)
  - All Xbox Services
  - Fax service
  - Games
  - Internet Explorer (any #) OR Edge
  - Print and Document services
  - Tablet PC (unless using a touchscreen)

## 12. Data Mining & Bloatware Removal:

- There are a lot of Microsoft apps that send telemetry that can be turned off and there are a lot of applications you can probably delete to save hard drive space if you need to.

## 13. Uninstall pre-installed apps and bloatware:

- Control Panel > All Control Panel Items > Programs and Features
- Uninstall anything that you know you don't need
- To remove windows apps that can't be uninstalled from the control panel:
  - Start > Powershell
  - Right Click: Run as Admin
    - Enter the following commands to remove one or more apps of your choice. Some possible examples to remove:
      - powershell "Get-AppxPackage \*BingFinance\* | Remove-AppxPackage"
      - powershell "Get-AppxPackage \*BingNews\* | Remove-AppxPackage"
      - powershell "Get-AppxPackage \*BingSports\* | Remove-AppxPackage"

- powershell "Get-AppxPackage \*BingWeather\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*Getstarted\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*(https://tomsepe.com/MicrosoftOfficeHub)\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*MicrosoftSolitaireCollection\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*Office.OneNote\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*People\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*SkypeApp\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*Windows.Photos\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*WindowsAlarms\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*WindowsCalculator\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*WindowsCamera\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*windowscommunicationsapps\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*WindowsMaps\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*WindowsPhone\* | Remove-AppxPackage"
- powershell "Get-AppxPackage \*WindowsSoundRecorder\* | Remove-AppxPackage"

- powershell "Get-AppxPackage \*XboxApp\* | Remove-AppxPackage"
  - powershell "Get-AppxPackage \*ZuneMusic.\* | Remove-AppxPackage"
  - powershell "Get-AppxPackage \*ZuneVideo.\* | Remove-AppxPackage"
  - powershell "Get-AppxPackage \*3DBuilder\* | Remove-AppxPackage"
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## OTHER RESOURCES AND GUIDES:

### HQPRO Creating Flawless Installations

<https://learn.elburz.io/creating-flawless-installations/>

### Prepping a Windows 10 Machine to Run an Art Installation 24/7

<https://github.com;brangerbriz/up-4evr-windows-10>

(<https://github.com;brangerbriz/up-4evr-windows-10>)

### Same as above but for Mac Info:

[https://github.com/laserpilot/Installation\\_Up\\_4evr](https://github.com/laserpilot/Installation_Up_4evr)

([https://github.com/laserpilot/Installation\\_Up\\_4evr](https://github.com/laserpilot/Installation_Up_4evr))

### Watchout Windows 10 tweaking guide:

[https://cdn.dataton.com/Files-PDF-etc/content\\_offers/WATCHOUT-Windows\\_10\\_Enterprise\\_Tweaking\\_Guide.pdf?mtime=20180615134405](https://cdn.dataton.com/Files-PDF-etc/content_offers/WATCHOUT-Windows_10_Enterprise_Tweaking_Guide.pdf?mtime=20180615134405)  
([https://cdn.dataton.com/Files-PDF-etc/content\\_offers/WATCHOUT-Windows\\_10\\_Enterprise\\_Tweaking\\_Guide.pdf?mtime=20180615134405](https://cdn.dataton.com/Files-PDF-etc/content_offers/WATCHOUT-Windows_10_Enterprise_Tweaking_Guide.pdf?mtime=20180615134405))

### Ultimate Gamers Guide to Windows 10 Tweaks:

<https://www.boredgamer.co.uk/2018/03/20/windows-10-ultimate-gaming-tweak-guide/>  
(<https://www.boredgamer.co.uk/2018/03/20/windows-10-ultimate-gaming-tweak-guide/>)

**How To Stop Automatic Updates on Windows 10:** (<https://tomsepe.com>)

<https://www.windowscentral.com/how-stop-updates-installing-automatically-windows-10> (<https://www.windowscentral.com/how-stop-updates-installing-automatically-windows-10>)

**14 Ways to Speed up Windows 10:**

<https://www.computerworld.com/article/3029168/14-ways-to-speed-up-windows-10.html> (<https://www.computerworld.com/article/3029168/14-ways-to-speed-up-windows-10.html>)

**Should I Block It?:**

<https://www.shouldiblockit.com/> (<https://www.shouldiblockit.com/>)





(<https://tomsepe.com>)