

OPTIMIZING WS 2019 IN A JPLAY FEMTO-BASED DUAL OR SINGLE PC SYSTEM

This guide was prepared for anyone who cannot, or prefers not to, run WS 2019 in core mode on their system, but would still like to reduce the number of services and processes to improve sound quality in GUI mode. It is to be used for a dual or single PC system with a smart phone, tablet or additional PC functioning as a remote control device.

To avoid confusion with the dual PC designations, I will hereafter refer to the Audio-PC of a single PC system as a Single PC.

The directions provided are applicable to both the Audio-PC and the Control-PC, or a Single PC, with Audio-PC-specific, Control-PC-specific or Single PC-specific differences clearly indicated.

The guide does not deal with the installation/activation of JPLAY FEMTO nor with setting up remote control via a WiFi-enabled smart phone, tablet or additional PC. Those topics are covered in the JPLAY FEMTO manual (available on the JPLAY website) and are discussed thoroughly on the JPLAY Forum.

The settings recommended for various steps are just that, recommendations. I suggest that you start with these and then, if necessary or you like to experiment, readjust the settings where appropriate to suit your personal preferences.

The procedures for optimizing WS 2019 are forgiving in that one can generally recover from errors made (depending on the nature of the error of course) without needing to reinstall WS 2019. Nonetheless, as a safety measure it is advisable to make a system image and a recovery disk/USB stick before starting.

I have repeated these procedures numerous times with no difficulties resulting. However, it is not possible to guarantee that everything described here will work perfectly with no repercussions on different systems with different hardware and software configurations. So use this guide at your own risk. However, I have never had to reimage my systems as a consequence of optimizing WS 2019 this way.

Finally, I strongly advise that you **read through the guide carefully before you start, and take your time if you reach points where your system differs from that described here.** If you have any questions, you can contact me through the [JPLAY Forum](#).

Cheers,

BernieK

PREAMBLE

This procedure for optimizing WS 2019 Standard Edition Desktop Mode is designed for Control and Audio-PCs, or a Single PC, operating as follows:

1. The PCs are running JPLAY FEMTO with the Control-PC or Single PC using FemtoServer.
NOTE: JPLAYFemto.exe is running only on the Control-PC, JPLAY.exe is running only on the Audio-PC, both JPLAYFemto.exe and JPLAY.exe are running on the Single PC.
2. Static IP addresses have been set for the ethernet adapters in the Control-PC and Audio-PC and the two PCs are directly connected via an Ethernet cable.
3. The Audio-PC and Control-PC, or a Single PC, are already running WS 2019 trouble-free.
4. WiFi is enabled on the Control-PC, or a Single PC, and is set to start automatically when the PC starts up.
5. JPLAY FEMTO is activated on the PCs, works properly and there are no issues with music playback.
6. Music playback is remotely controlled from a smart phone, a tablet or additional PC using an app specific to the control point device.
7. Remote control of music playback works properly.

This guide describes optimization of the Audio-PC and Control-PC, or a Single PC, using (in alphabetical order) Audiophile Optimizer (AO), ExerciseStabilizer, Fidelizer Pro, LemonadeElitest, MajorityClean, Process Lasso Server Edition, and a modified CAD Desktop Services Killer script as well as manually disabling or stopping additional services and Background/Windows Processes. If you use other software, you will have to carefully test which services/processes you can stop and which must remain active for music playback, remote control, etc. The guide is overly detailed to make the process as easy to follow and implement as possible. Nonetheless, I recommend you read carefully through the entire guide before beginning.

STAGE 1. INITIAL PREPARATION FOR THE AUDIO-PC, CONTROL-PC AND SINGLE PC

1. Create Command Prompt, Control Panel, Registry Editor, Task Manager and Windows Services Shortcuts

I find it convenient to initially use shortcuts rather than having to access these items through the Start Menu or Task Manager. Create shortcuts to Command Prompt, Control Panel, Registry Editor, Task Manager and Windows Services as follows.

- a. Right-click on the desktop, left-click on **New**, left-click on **Shortcut**, left-click on **Browse**.
- b. Navigate to **C:\Windows\System 32\cmd.exe**, **C:\Windows\System32\control.exe**, **C:\Windows\regedit.exe**, **C:\Windows\System 32\Taskmgr.exe**, or **C:\Windows\System 32\Services.msc**.
- c. Left-click on **cmd.exe**, **control.exe**, **regedit.exe**, **Taskmgr.exe**, or **Services.msc** to highlight it, left-click on **OK**, left-click on **Next**.
- d. Type an easily remembered name (eg Command) for the shortcut, left-click on **Finish**, and leave the shortcut on the desktop or, alternatively, right-click on the shortcut and left-click on **Pin to taskbar**. **I strongly suggest creating shortcuts for JPLAYmini and JPLAY Settings as well for checking music playback.**

Command Prompt, Task Manager and Windows Services also can be opened via the Start Menu under Windows Administrative Tools or Windows System. The Control Panel also can be accessed via the Start menu. Task Manager can also be opened using Ctrl+Alt+Del and Windows Services can also be accessed via Task Manager (left-click on **Services** in Task Manager).

The Command Prompt and Registry Editor also can be accessed via Task Manager (left-click on **File** in Task manager, left-click on **Run new task** in the menu that appears, type **cmd** or **regedit** in the **Open** box of the **Create new task** window that appears, left-click on **OK**. Close the Task Manager window.

When you are required to access a Command Prompt, the Control Panel, Registry Editor, Task Manager, or Windows Services, it is simpler to use one of the shortcuts on the desktop or taskbar.

2. Reverse the Optimizations Made by Audiophile Optimizer and Fidelizer Pro

- a. If the Audio-PC, Control-PC or Single PC is already running Audiophile Optimizer and Fidelizer Pro, run the Audiophile Optimizer Service Tool (**ST -r**) to fully reset the drivers and services.
- b. To uninstall Fidelizer Pro navigate in Explorer to **C:\Fidelizer Pro\Fidelizer Pro 8.x (Your Name).exe**, right-click on **Fidelizer Pro 8.x (Your Name).exe**, and left-click on **Open** or **Run as administrator**. When the Fidelizer Pro window appears, left-click on **Uninstall** at the bottom.

3. Disable Windows Defender

If you use Audiophile Optimizer 2.20 or 3.0 to remove Windows Defender, skip to Step e. If not, or you use an earlier version of the Audiophile Optimizer, disable Windows Defender as follows.

- a. On a PC with internet access left-click on the following links (left-click on **Allow** if prompted) to download **Turn_Off_Windows_Defender_Antivirus.reg** and **Turn_On_Windows_Defender_Antivirus.reg** files:
[Turn off Windows Defender](#) [Turn on Windows Defender](#)
- b. Copy the downloaded files to a USB stick, and from the USB stick to the desktop on your Audio-PC and Control-PC or Single PC.
- c. To disable Windows Defender, right-click on the **Turn_Off_Windows_Defender_Antivirus.reg** file on the desktop, and left-click on **Merge** in the menu that opens. If prompted, left-click on **Run, Yes** and/or **OK**.
- d. To restore Windows Defender right-click on the **Turn_On_Windows_Defender_Antivirus.reg** file on the desktop, and left-click on **Merge** in the menu that opens. If prompted, left-click on **Run, Yes** and/or **OK**.
- e. If any of the four Windows Defender services are still running (check using your shortcut to Windows Services), they can be disabled in the registry as follows.
 - i. Open the Registry Editor using your shortcut.
 - ii. Navigate to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services**.
 - iii. Left-click on the caret adjacent to **Services** and sequentially navigate to the keys for Windows Defender Advanced Threat Protection Service (**Sense**), Windows Defender Antivirus Network Inspection Service (**WDNisSvc**), Windows Defender Antivirus Service (**WinDefend**), and Windows Defender Firewall (**mpssvc**). Do the following for each one in turn.
 - iv. Left-click on the service name, then in the right panel right-click on **Start**.
 - v. In the box that opens right-click on **Modify** to open the **Edit DWORD (32-bit) Value** window.
 - vi. In the **Value data** panel change the number from 2 (Automatic start) to 4 (Disabled), left-click on **OK** and close the Registry Editor when finished modifying. These services will not start the next time the PC is booted. To restore any of these services, follow the same procedure and change the **Value data** back to 2.

4. Disable Automatic Maintenance

Audiophile Optimizer versions 2.20 and 3.0 disable Automatic Maintenance. If you use at least 2.20, skip to step 5. If you use an earlier version of Audiophile Optimizer, disable Automatic Maintenance as follows.

- a. On a PC with internet access left-click on the following links (and left-click on **Allow** if prompted) to download the **Disable_Automatic_Maintenance.reg** and **Enable_Automatic_Maintenance.reg** files:
[Disable Automatic Maintenance](#) [Enable Automatic Maintenance](#)
- b. Copy the downloaded files to a USB stick, then from the USB stick to the desktop on your Audio-PC and Control-PC or Single PC.
- c. To disable Automatic Maintenance, right-click on the **Disable_Automatic_Maintenance.reg** file on the desktop, and left-click on **Merge** in the menu that opens. If prompted, left-click on **Run, Yes** and/or **OK**.

- d. To restore Automatic Maintenance, right-click on the **Enable_Automatic_Maintenance.reg** file on the desktop, and left-click on **Merge** in the menu that opens. If prompted, left-click on **Run, Yes** and/or **OK**.

5. Stop Search

Windows Search is disabled by default in WS 2019, but **Search** and **SearchUi.exe** may still appear in Task Manager under **Background Processes** and **Details**, respectively, and cannot be permanently stopped using **End Task**. However, Search can be permanently stopped (until you wish to restart it) in WS 2019 GUI mode as follows.

- a. On a PC with internet access left-click on the following link (and left-click on **Allow** if prompted) to download **kill-searchui.zip**:

[Kill Windows Search](#)

- b. Unzip the folder and copy the **kill-searchui.bat** file to a USB stick, then from the USB stick to the desktop on your Audio-PC and Control-PC, or Single PC.

When executed the **kill-searchui.bat** file adds the extension **.000** to the name of the **Microsoft.Windows.Cortana_cw5n1h2txyewy** folder located at C:\Windows\SystemApps.

- c. Right-click on **kill-searchui.bat** on the desktop, left-click on **Run as administrator** in the menu that opens.

A small command prompt window should flash by, SearchUi.exe will stop running and **Search** and **SearchUi.exe** should no longer appear in Task Manager under **Background Processes** and **Details**, respectively.

- d. In Explorer navigate to and right-click on **C:\Windows**, left-click on **New** in the menu that opens, left-click on the **Folder** tab that opens, and name the new folder **SystemApps.bak**.
- e. Navigate to the C:\Windows\SystemApps\Microsoft.Windows.Cortana_cw5n1h2txyewy.000 folder and move (not copy) the folder across into **C:\Windows\SystemApps.bak**.
- f. To restore Search, remove the **.000** extension from the **Microsoft.Windows.Cortana_cw5n1h2txyewy.000** folder, move the **Microsoft.Windows.Cortana_cw5n1h2txyewy** folder back to the SystemApps folder, reboot.

6. Disable the Non-Essential AppX Deployment Service (AppXSVC), Base Filtering Engine (BFE), Connected Devices Platform User Service (CDPUserSvc), Windows Audio Endpoint Builder Service (AudioEndpointBuilder), and Windows Audio Service (Audiosrv)

- a. Access the Registry Editor on the Audio-PC and Control-PC or Single PC and navigate down to:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services

- b. Left-click on the caret to the left of Services.
- c. Navigate sequentially down to **AppXSVC**, **AudioEndpointBuilder**, **Audiosrv**, **BFE**, and **CDPUserSvc** and do the following for each one in turn.
- d. Left click on the service name in the left panel. In the right panel right-click on **Start**, left-click on **Modify**, change **Value data** from 2 (Automatic start) to 4 (Disabled), left-click on **OK**.

These services will no longer start the next time the PC is booted. To restore any of these services, follow the same procedure and change the **Value data** back to 2.

7. Adjust BIOS Settings

Audiophil describes several BIOS tweaks on pages 4-6 of his ["Computer Audio Best Practices Guide"](#). I recommend that you consider the suggested BIOS tweaks that can be implemented on your Audio-PC and Control-PC or Single PC.

8. Tweak Ethernet Adapter Properties (Audio-PC and Control-PC only)

If your LAN (Ethernet) adapters are used only to connect the Control-PC to the Audio-PC, Audiophil suggests 'tuning' the adapters. To do so, the Control-PC must be connected to the Audio-PC via an Ethernet cable and both PCs must be on.

- Open the **Control Panel**, left-click on **Network and Sharing Center**, left-click on **Change adapter settings** at the upper left, right-click on your Ethernet adapter, left-click on **Properties** in the menu that opens.
- Then follow the instructions on page 8 of Audiophil's ["Computer Audio Best Practices Guide"](#).
- Additional properties also can be tweaked. To access these additional properties, open Device Manager via the Control Panel on the Audio-PC and Control-PC.
- Navigate to the **Network adapters**, left-click on the rightward pointing caret, navigate to and right-click on your Ethernet adapter, and left-click on **Properties** in the menu that opens.
- Left-click on **Power Management** (if there) and untick the box beside "Allow the computer to turn off this device to save power".
- Left-click on the **Advanced** tab to open a sub-window that shows the properties. Scroll through them and change the setting for each property to the suggested setting shown for the same property in Table 1 below.

NOTE: Record your adapter settings before making any changes. Not all the properties shown in Table 1 may be available for your adapter and not all the suggested settings may work with your adapter model. Make one or a few changes at a time, testing the effect of the change(s) on music playback. If playback works properly, continue. If not determine which change is responsible and return the property involved to its original setting, then continue. **Make setting changes on both PCs at the same time. The final settings must be the same on both PCs.**

Table 1. Ethernet Adapter Property Settings

The following properties and settings suggested by JPLAY Forum member Taxman2 are for a Realtek Ethernet adapter using the latest driver (although they can be applied to other network adapters). Settings on my adapter that are compatible with music playback are shown. Differences between the suggested settings and the setting changes that work with my adapter for music playback are **bolded**.

Property	Suggested Setting	Setting on my Adapter
ARP Offload	Disabled	Disabled
Auto Disable Gigabit	Disabled	Disabled
Energy Efficient Ethernet	Disabled	Disabled
Flow Control	Rx & Tx Enabled	Rx & Tx Enabled
Green Ethernet	Disabled	Disabled
Interrupt Moderation	Enabled	Enabled
IPv4 Checksum Offload	Disabled	Rx & Tx Enabled
Jumbo Frame	Disabled	Disabled
Large Send Offload v2 (IPv4)	Disabled	Disabled
Large Send Offload v2 (IPv6)	Disabled	Disabled
Maximum Number of RSS Queues	2 or 4	4 Queues
Network Address	Empty	Not present
NS Offload	Disabled	Disabled
Power Saving Mode	Disabled	Disabled
Priority & VLAN	Disabled	Priority & VLAN Disabled
Receive Buffers	1	1

Receive Side Scaling	Enabled	Enabled
Shutdown Wake on LAN	Disabled	Disabled
Speed & Duplex - on max	1 GB (dual)	1.0 Gbps Full Duplex
TCP Checksum Offload (IPv4)	Disabled	Disabled
TCP Checksum Offload (IPv6)	Disabled	Disabled
Transmit Buffers	1	1
UDP Checksum Offload (IPv4)	Enabled	Rx & Tx Enabled
UDP Checksum Offload (IPv6)	Disabled	Disabled
Wake on Magic Packet	Disabled	Disabled
Wake on pattern match	Disabled	Disabled
WOL & Shutdown Link Speed	Disabled	Not speed down

9. Incorporate Batch and Command Files

As part of the optimization procedure I recommend using a Control Prompt as the shell (see Stage 2, Step 6). This will reduce the number of services/processes running. It is extremely convenient to run processes/programs from the command prompt or Task Manager using batch (bat) or command (cmd) files. Batch and command files that I use for this purpose can be downloaded from here:

[Batch and Command Files for Use with Command Prompt](#)

- On a PC with internet access, download and copy the bat and cmd files (see Table 2 below) to a USB stick.
- After running AO (Stage 2, Step 4), copy all the bat and cmd files from the USB stick to the **Tools** subfolder under **AO** on the **C: drive** of the Audio-PC and Control-PC or Single PC.
- To modify any of the files, right-click on the file and left-click on **Edit**. Make the required changes in the file. Left-click on **File**, left-click on **Save**. Close the edit window.
- To use a bat or cmd file, enter the file name (without the **.bat** or **.cmd**) at a command prompt, or open Task Manager, left-click on **File**, left-click on **Run new task**, type the name of the bat or cmd file (without the **.bat** or **.cmd**) in the box adjacent to **Open**, left click on **OK**.

To create batch or command files for programs/processes specific to your system the following may be helpful.

- Create the batch/command file in Notepad using the files you download here as models.
- Upon completion, left-click on **Save as**.
- In **File name** provide a name for your file with batch files ending in **.bat** and command files ending in **.cmd**.
- Left-click the down arrow in **Save as type** and select **All files *.***
- Make sure **Encoding** is set to **ANSI**.
- Select the folder (should be **AO Tools subfolder**) in which to save the bat/cmd file and left-click on **Save**.
- To run the file, follow the procedure in Step d above.

Table 2. Batch and Command Files to be Downloaded

Name Entered at Prompt	File Name	Purpose
cmd	Cmd.bat	Open Command Prompt
conpan	Conpan.bat	Open Control Panel

dsk	DSK.CMD	Run Modified CAD Desktop Services Killer Script
exp	Exp.bat	Open Windows Explorer
fidp85	Fidp85.bat	Start Fidelizer Pro 8.5
jmini	Jmini.bat	Start JPLAYmini
jplays	JPLAYS.CMD	Stop JPLAY.exe
jsettings	Jsettings.bat	Open JPLAY Settings
prolasso	Prolasso.bat	Open Process Lasso GUI
regedit	Regedit.bat	Open Registry Editor
restart	Restart.bat	Restart PC
services.msc	Services.msc	Open Windows Services
stop	Stop.bat	Shut Down PC
taskman	Taskman.bat	Open Task Manager

Note the following:

The DSK.CMD file will have to be edited (see Stage 2 Steps 7 and 8 for details and instruction) so that the copy placed on each PC deals with the non-essential services specific to that PC (Audio-PC, Control-PC or Single PC). The DSK.CMD file that you can download is a combination of the files shown for the Audio-PC and the Control-PC in Stage 2, Step 7.

For the Fidelizer Pro batch file, the Name Entered (fidpXX) and the File Name (FidpXX.bat) will have to be changed so that "XX" is the number of the version you are using. Also for the FidpXX batch file to work, the **Fidelizer Pro XX (your name).exe** file must be in the folder **Fidelizer Pro XX** on the C: drive, and the FidpXX.bat file must be edited (Stage 2 Step 8) so that **your name** and **XX** are replaced with your name and the version number in the copy of the exe file you received.

AO also includes files to start JPLAYmini and JPLAY Settings. Enter jm or js, respectively, at the command prompt.

10. Disable Microsoft Compatibility Telemetry If Running

If **Microsoft Compatibility Telemetry** is under **Background Processes** in Task Manager, disable it as follows.

- Open Task Scheduler under Windows Administrative Tools in the Start Menu. Alternatively, Task Scheduler can be opened by navigating to **C:\Windows\System32\taskschd.msc** in Windows Explorer. Right-click on **taskschd.msc**, left-click on **Open** or **Run as administrator**.
- Open the following folders: **Task Scheduler Library** → **Microsoft** → **Windows** → **Application Experience**.
- After opening Application Experience, in the middle pane right-click on **Microsoft Compatibility Appraiser** and left-click on **Disable**. Close the Task Scheduler.

STAGE 2. OPTIMIZING THE AUDIO-PC AND CONTROL-PC OR SINGLE PC

Follow these steps in the order given. Ensure that all external hard drives are turned off before proceeding.

1. Reconfigure Process Lasso (if you are using it) on the Audio-PC and Control-PC or Single PC

If you do not use Process Lasso skip to Step 2. If you use it, but do not have the icon on your Desktop or Taskbar, first create a shortcut as follows. **Note:** I do not run Process Lasso as a service. Instead, for convenience (eg changing settings before further optimization steps) I have it started when the GUI is opened (see Step 3e below).

- Right-click on the desktop, left-click on **New**, left-click on **Shortcut**.
- In the **Type the location of the item** box, type **C:\Program Files\Process Lasso\ProcessLassoLauncher.exe**
- Left-click on **Next**, rename the shortcut Process Lasso, left-click on **Finish**

- d. Right-click on the shortcut and leave it on the desktop or left-click on **Pin to taskbar**.
- e. Open the Process Lasso GUI via its icon or the shortcut.
- f. Left-click on **Main** at the upper left and left-click on **Enable ProBalance** if it is not already ticked.
- g. Left-click on **Options** at the upper left, left-click on **Log**, left-click on **Logging enabled** to uncheck it and disable logging.
- h. To change settings for individual programs/processes, right-click on the program/process to access the settings.
- i. Adjust the settings of JPLAYFemto.exe (running on the Control-PC or Single PC) and JPLAY.exe (running on the Audio-PC or Single PC) as shown in the following table. Leave settings (except for CPU Affinity) for all other programs and processes at the default values.

Table 3. Process Lasso Settings including recommendations by JPLAY Forum member Clocio

Program or Process	CPU Priority (Always)	CPU Affinity (Always)	I/O Priority (Always)	Memory Priority	Application Power Profile
JPLAYFemto.exe JPLAY.exe	Real Time	Core 0	High	Always 3 -medium None	Bitsum Highest Performance
All Others	Default	Cores 2,4,6	Default	None	Default
			In Sub-Menu "More"		
	Exclude from ProBalance	Induce Performance Mode	Disable Idlesaver	Exclude From SmartTrim	Exclude from Foreground Boost
JPLAYFemto.exe JPLAY.exe	Yes	Yes	Yes	Yes	Yes
All Others	Default	Default	Default	Default	Default

Note: I use quad core processors. There are 4 physical cores and 4 virtual cores due to hyperthreading. The CPU affinity settings I selected are to eliminate, as much as possible, competition between JPLAYFemto.exe or JPLAY.exe and other processes that might interfere with sound quality if they use the same physical core.

In Audiophile's "[Computer Audio Best Practices Guide](#)" he recommends disabling hyperthreading in the BIOS. I cannot do that on my PCs. However, setting the CPU Affinity for a process to a physical core(s) (0, 2, 4, 6 on a quad core processor) in Process Lasso will force that process to use only the physical core(s) and disable hyperthreading for that core(s) for that process (confirmed by Jeremy Collake, the Process Lasso developer). So the CPU Affinity settings above should disable hyperthreading for JPLAYFemto.exe and JPLAY.exe, and all other processes where possible. Note however that Process Lasso is unable to change the CPU affinity pattern for some Windows processes which remain set to all cores (0-7).

I run JPLAY.exe on the Control-PC only if using JPLAYmini. Then JPLAYFemto.exe is stopped via Task Manager. When using JPLAYFemto.exe on the Control-PC I stop the JPLAY.exe service via a cmd file that can be executed when using a Custom Shell (command prompt) with Audiophile Optimizer or by Fidelizer Pro (see below). JPLAYFemto.exe is disabled via Windows Services on the Audio-PC where it is not needed. Both JPLAYFemto.exe and JPLAY.exe are needed on the Single PC (except when using JPLAYmini).

When Process Lasso is subsequently fully turned off (GUI and core engine), the processor Priority Class and CPU Affinity values remain at the Process Lasso settings (check via Task Manager → **Details** → right-click on a process → left-click on **Set priority** or **Set affinity**). Consequently, anyone not using Process Lasso may be able to achieve some of the potential sound quality benefits of that software by using the Task Manager method to isolate JPLAY to a single physical core, restrict all other processes to the remaining physical plus hyperthreaded core combinations (2-7 for a quad core processor), set the priority for JPLAY to the highest value and limit the priorities of all other processes to the 'normal' value. However, if you try this, when first installing Fidelizer Pro, you must set the Core Isolation Policy to **No isolation (only reduce cores on non-audio)**. It also is advisable to shut off the Fidelizer core engine (via Process Lasso or the Task

Manager) after the PC boots to prevent any interference when you set the processor priority and CPU affinity values via the Task Manager. Note if the settings are made using only Task Manager, the settings will not be retained when the PC is restarted.

If you do not have Process Lasso configured to start automatically as a service but would like to have it start as a service, reconfigure how Process Lasso starts as follows.

- a. Left-click on **Options** at the upper left in the Process Lasso window, left-click on **General Settings** in the drop-down menu, left-click on **Reconfigure the way Process Lasso starts**.
- b. In the **Process Lasso startup options** window that appears, under Core Engine Startup, left-click the '**Start core engine as a service at system boot PRO ONLY**' button, left-click on **Next**, left-click on **OK**, left-click on **Finish**, left-click on **Yes**. The next time you re-boot the PC, Process Lasso will start automatically as a service.
- c. If you need to open the Process Lasso GUI again immediately after (e) above, open Task Manager, in **Processes** navigate down to **Process Lasso User Interface** and **Process Lasso process management engine**, right-click on each sequentially and left-click on **End task** in the menu that appears. Close the Task Manager.
- d. Access a command prompt, type **c:\\"Program Files\\"\"Process Lasso\"ProcessLasso.exe /showwindow**, press **Enter**. Afterwards, left-click on **Main**, left-click on **Shut down Process Lasso**, left-click on **No**. This will close the GUI but keep the Process Lasso management engine running as a background process.

2. Incorporate MajorityClean (MC) and LemonadeElitest (LE) or ExerciseStabilizer (ES) (if you will use them)

Details about these programs can be found in the Pink HQ + MinorityClean thread under the Computer Audio topic of the Forum on the JPLAY website: <http://jplay.eu/forum/index.php?/topic/3063-pink-hq-minorityclean/>. LE starts at page 111, post #2204, MinorityClean becomes MajorityClean at page 126, post #2504, and ES starts at page 166, post #3310. Different MC, LE and ES versions can have different system-dependent effects on sound quality.

Note: development of MC and LE for Windows operating systems ceased with versions 300 and 62, respectively, and they are no longer available from the developer, but previous versions of LE, MC and ES can be downloaded from [here](#). The most recent version of ES can be downloaded from [Bug head Nontallion](#).

- a. ES is provided in a zip file that can be unzipped to produce a folder containing an **iso file**. Right-click on the **iso file** and left-click on **Mount**. In Explorer, navigate to the mounted iso file (eg, DVD Drive (E:)), and the **ExerciseStabilizer folder** containing the **ExerciseStabilizer.exe** file will be within the **Rewrite Data folder**.
- b. Copy the folder with the ExerciseStabilizer.exe file to the C: drive on each PC used. I assume that if you are using MajorityClean.exe or LemonadeElitest.exe their folders are already on the C: drive.
- c. ES/MC/LE can be started by using:
 1. the **Run new task** feature of Task Manager;
 2. the **Run as administrator** option in Windows Explorer;
 3. Fidelizer Pro to start ES/MC/LE (see 3e below);
 4. HungryBear's TrustedClean 20 installer to start ES/MC/LE as a service (see the Pink HQ + MinorityClean thread, page 196, post #3909), which is the method I use and is highly recommended for a boost in sound quality. Also see below after Table 4.
 5. a script that creates a RAM Disk, copies TrustedClean, MC and LE or ES to the RAM Disk and then installs MC and LE or ES as services. For details see post # 3914, page 196 of the Pink HQ + MinorityClean thread and the link to a Guide for creating the RAM Disk in my signature on the JPLAY Forum.

ES, MC and LE run until Windows shuts down. They must restart each time the PC is booted. It may then take a few minutes for the sound to adjust and stabilize.

If you use FidelizerPro to start ES/MC/LE, you can change the version started by copying folders with new versions to the C: drive and then changing the version that FidelizerPro starts by using the Registry Editor. In the Registry Editor, navigate to HKEY_CURRENT_USER\Software\Windows X\Fidelizer. Left-click on Fidelizer. In the right-hand panel, right-click on OptimizeLaunchApp1, 2 or 3 (whichever one is used to start MC/LE), left-click on Modify,

change the version number in the Value data field to the number of the new version you want to try, left-click on OK, close the Registry Editor, and reboot the PC to have Fidelizer Pro start the new MC/LE version.

Process Lasso can be used to adjust settings for MC and LE as shown in Table 4. Owing to the presumed difference in ES operation compared to MC and LE, it is currently recommended that TrustedClean (if you are using it) be used to set the CPU Priority and CPU Affinity for ES. It can also be used to exclude ES/LE/MC from ProBalance and SmartTrim and disable Idlesaver and Foreground Boost in Process Lasso.

The CPU Priority and CPU Affinity can be set in Task Manager as described at the bottom of page 8. However, when set only this way, the CPU Priority and CPU Affinity settings are not retained when the PC is restarted.

Table 4. Process Lasso Settings for MC/LE: my preferences plus those recommended by JPLAY Forum members Cloclo, and Oryaaaaa, the MC/LE developer

						In Sub-Menu "More"		
CPU Priority (Always)	CPU Affinity (Always)	I/O Priority (Always)	Exclude from ProBalance	Induce Performance Mode	Memory Priority (Always)	Disable Idlesaver	Exclude From SmartTrim	Exclude from Foreground Boost
Above normal	0,2,4,6	High	Yes	Yes	3-medium	Yes	Yes	Yes

The following tips may be helpful for anyone just starting to use Process Lasso with TrustedClean, and for anyone who may not be aware of related Process Lasso features.

Note: the information below applies to a licensed copy of Process Lasso. Certain features (eg, Memory Priorities) are available only on a 14-day trial basis, or are not available, in the free version. For more details see: [How Free is Process Lasso? \(bitsum.com\)](https://www.bitsum.com/process-lasso-free).

- To use a CPU Affinity combination different from those offered in TrustedClean, or an I/O Priority setting other than "High" suggested in TrustedClean, the CPU Affinities and I/O Priority can be set in Process Lasso as follows.
 - To change the I/O Priority, first uncheck that box during the TrustedClean installation process.
 - To enforce a specific CPU Affinity or I/O Priority setting for MC/LE/ES, right-click on the relevant process at the left of the main Process Lasso window, slide over to **CPU Affinity** or **I/O Priority** as required, and slide over to **Always**.
 - For CPU Affinity, left-click on **Select CPU affinity**, and then tick or untick the required CPU boxes.
 - For I/O Priority left-click on the desired priority/affinity setting(s). Thereafter Process Lasso will use that setting and enforce that priority setting whenever MC/LE/ES is started.
 - To change the previously chosen CPU Affinity or I/O Priority setting(s), simply repeat the above procedure and select a new set of CPU Affinities or a new I/O Priority.
- When using both TrustedClean and Process Lasso, the CPU Affinities and I/O Priority selected in TrustedClean for MC/LE/ES may not be shown in Process Lasso. Instead, Process Lasso may show CPU affinities or an I/O Priority for MC/LE/ES that were previously selected in Process Lasso. The following steps can be taken to remove previously selected CPU Affinity or I/O Priority setting(s) from the Process Lasso 'memory'.
 - To delete the CPU Affinity memory setting in Process Lasso, left-click on the **Options** tab at the top left, rest on **CPU** in the drop-down menu that opens, slide over to **CPU Affinities...** and left-click on it to open the **Persistent CPU Affinities** window.
 - Scroll down to MC/LE/ES under **Process match**, left-click on it, and left-click on **Remove**.
 - Do this for any instance of MC/LE/ES appearing under **Process match**.

- d. When finished, left-click on **OK** to return to the Process Lasso main window.
- e. To delete the I/O Priority memory setting in Process Lasso, left-click on the **Options** tab at the top left, rest on **I/O** in the drop down menu that opens, slide over to **I/O Priorities...** and left-click on it to open the **Default Process I/O Priorities** window.
- f. Scroll down to MC/LE/ES under **Process match**, left-click on it, and left-click on **Remove**.
- g. Repeat steps c and d.

NOTE: CPU Priority and Memory settings previously stored in PL can also be removed by following the above procedure and choosing the relevant headings under Options.

- 3. If the CPU Affinity settings (or any other settings) chosen in PL are not being maintained after following the steps outlined in 1 above, a tighter level of control can be applied in PL as follows.
 - a. To more strictly enforce a specific CPU Affinity or I/O Priority setting for MC/LE/ES, left-click on the relevant process at the left of the main PL window.
 - b. Left-click on the **Options** tab at the top left, navigate down to **Forced mode (continuously reapply settings)** and left-click on it.
 - c. To stop the continuous reapplication of the settings, for any process, repeat steps a and b.

3. Install Fidelizer Pro (if you are using it) on the Audio-PC and Control-PC or Single PC

- a. If you do not use Fidelizer Pro, do Steps j through m, and then skip to Step 4.
- b. If you will use Fidelizer Pro, but **will not use** Process Lasso, install Fidelizer Pro and use the following settings.
- c. **User Level:** Purist; **Audio Profile:** Audio-PC: Network Renderer; Control-PC: Streamer; Single PC: Audio Render
- d. **Advanced window:** **OS Timer Resolution:** set to your preference; **Core Isolation Policy:** set to your preference, but note that it has been reported in the JPLAY Forum that allowing Fidelizer Pro to assign core usage may reduce sound quality with JPLAY FEMTO. So you may wish to select "**No isolation (only reduce cores on non-audio)**"; **Processor Priority Policy:** Long / Variable – natural harmonics with rich details (JPLAY); **Advanced** features: tick all boxes. Thereafter Fidelizer Pro will start automatically when the PC starts.
- e. When Fidelizer Pro starts the optimization process, it offers to launch up to three 'media players' with specified priorities upon completion of optimization. Tick the box for the first media player and select **Normal** as the priority. As optimization continues, Fidelizer will open Windows Explorer so that the 'media player' can be selected. Rather than a media player, this feature can be used to start almost anything. Eg, to start Process Lasso, select prolasso.bat in the Tools subfolder of the AO folder on the C: drive. This will start Process Lasso on the PC. Similarly, the second and third media player options can be used to start any other required process.
- f. If you are using Process Lasso, install Fidelizer Pro and use the following settings.
- g. **User Level:** Purist; **Audio Profile:** Audio-PC: Network Renderer; Control-PC: Streamer; Single PC: Audio Render.
- h. **Advanced window:** **OS Timer Resolution:** set to your preference; **Core Isolation Policy:** **No isolation (only reduce cores on non-audio)** (conflict between Fidelizer Pro and Process Lasso with respect to core assignments may reduce sound quality); **Processor Priority Policy:** Long / Variable – natural harmonics with rich details (JPLAY); **Advanced** features: tick all boxes. Thereafter Fidelizer Pro will start automatically when the PC starts.
- i. Repeat Step e above.
- j. It is a good idea to set the PC clock in the JPLAY registry to match the OS Timer Resolution that you selected in Fidelizer Pro on each PC. If you are not using Fidelizer Pro you can either use the default clock setting (0.5ms) implemented by JPLAY or change the setting to 1.0ms, 10ms or 15.6ms to suit your preference.

- k. To change the clock setting, first, stop JPLAY.exe and/or JPLAYFemto as appropriate. Access Task Manager and left-click on **Services**. In the window that appears navigate to **JPLAYservice** and/or **JPLAYFemto**, right-click on it, left-click on **Stop** in the menu that appears. Leave the Task Manager window open.
- l. Access the Registry Editor and navigate to **HKEY_LOCAL_MACHINE\SOFTWARE\JPLAY7**.
- k. Left-click on **JPLAY7**. In the right-hand panel right-click on **Clock**, left-click on **Modify**, change the **Value data** (default is 0 = 0.5ms) to 1 (1ms), 2 (10ms) or 3 (15.6ms) as to your preference, left-click on **OK**. Close the Registry Editor window.
- m. Restart the JPLAY.exe and/or JPLAYFemto service(s). In the opened Task Manager window, right-click on **JPLAYservice** and/or **JPLAYFemto**, left-click on **Start** in the menu that appears. Close the Task Manager window. Reboot the PC.

4. Run Audiophile Optimizer (AO)

Before running AO, carefully read the [AO Setup Guide 3.0](#) if this is your first time using AO. Then ensure **both** the Audio-PC and Control-PC are on, are connected by the Ethernet cable and the DAC is connected to the Audio-PC and is switched on. Similarly, ensure a running Single PC is connected to the DAC which is on.

- a. On the Audio-PC, Control-PC, or Single PC access a command prompt.
- b. Type **AO -u** to run AO in ultimate mode, press **Enter** (for a dual PC setup run AO on one PC at a time). Alternatively, you can open AO via its icon and subsequently select ultimate mode.

AO will run and you will have to choose different settings. I use the following settings for AO 3.0, but some of your choices may differ depending on the version of AO you are using, your preferences and your system configuration.

JPLAYFemto / Streamer: not disabled

Audio-PC, Control-PC or Single PC selected as appropriate

Sound signature 1 (Control-PC, Single PC) or 2 (Audio-PC)

Digital filter A (Control-PC) or D (Audio-PC, Single PC)

Kernel streaming and media player support installed

Roon, HQ Player and Spotify support not installed (unless you need them)

HPET enabled

Windows Defender disabled

SEHOP disabled

WASAPI/MMCSS optimization used

DO NOT disable SCSI miniport drivers unless you know what you are doing

Turn off display B (1 min) (or longer depending on your needs)

USB optimization enabled

Drivers and services disabled

Plug and play disabled (your DAC may require this service)

AMD CPU/SATA drivers disabled (unless you need them)

Network-related services disabled on Audio-PC only (ensure static IP addresses are set on Control-PC and Audio-PC before running AO).

Remote Desktop disabled (Control-PC or Single PC, but you may need it)

Remote Desktop Management disabled (Control-PC or Single PC, but you may need it)

Useful drivers not used on Audio-PC (but you may need them)

Defragged/Trimmed (optional)

Allow PC to restart after the optimizations are complete.

After the PC has restarted, check whether any of the four Windows Defender services are still running in Services and if so disable them as described in Stage 1, Step 3e.

5. Use the Service Tool to Enable Autologon

- a. On the Audio-PC, Control-PC, or Single PC open a command prompt, type **ST** and press **Enter** to start the Service Tool. Alternatively, you can access the Service Tool via its icon.
- b. Type **F** to open the Autologon window. Then type **A** to enable Autologon. Then type and **Enter** your Windows logon password (hopefully recorded when you installed WS 2019). Reboot the PC to confirm autologon.

6. Set a Command Prompt as the Shell

Do this as described on page 22 of the [AO Setup Guide 3.0](#). For setting up a custom shell that may include opening a command prompt see the AudiophileStyle Forum (<https://audiophilestyle.com/forums/topic/56327-how-to-customshell-as-shell-replacement/>). Using the Command Prompt as the shell reduces the number of services/processes running to a greater extent than using the Audiophile shell. The Service Tool can be used to restore the original AO GUI if required.

Commands to start various processes can be included in the custom shell file. The modified custom shell file I use to create a command prompt shell and start Process Lasso on my Audio-PC is shown here:

```
@echo off
REM Created by: Highend-AudioPC
REM https://www.highend-audiopc.com
Title "Launching custom shell..."
@echo off
echo Launching custom shell...
ping -n 3 127.0.0.1 -w 1000 >nul
start /HIGH "Command Prompt" %Systemdrive%\Windows\System32\cmd.exe
start /NORMAL "Process Lasso" %Systemdrive%\AO\Tools\ProLasso.bat
exit
```

Note: if at any time the command prompt window closes, open Task Manager by pressing CTRL+ALT+DEL, left-click on **File**, left-click on **Run new task**, type **cmd** in the box adjacent to **Open**, left click on **OK**. The command prompt window will be restored. You can run any other batch or command file the same way.

7. Check for Any Remaining Unnecessary Services that can be Stopped

The following services (excluding optimization software) are essential for operation of my Audio-PC, Control-PC, or Single PC:

- Background Tasks Infrastructure Service
- CoreMessaging
- DCOM Server Process Launcher
- Group Policy Client
- . JPLAY Audio Service (Audio-PC or Single PC at all times, Control-PC only when running JPLAYmini)
- . JPLAYfemto (Control-PC or Single PC only, but not when running JPLAYmini)
- Local Session Manager
- Power
- Remote Procedure Call (RPC)
- RPC Endpoint Mapper

The following services also are needed on my Audio-PC: (dependent on system configuration)

- System Events Broker
- Task Scheduler
- Time Broker

The following services also are needed on my Control-PC and Single PC: (dependent on system configuration)

DHCP Client
 DNS Client
 Security Accounts Manager
 System Events Broker
 Task Scheduler
 WLAN AutoConfig

Some other services may not be stopped by Fidelizer Pro or AO. They may be needed when the Audio-PC, Control-PC or Single-PC is starting up but not afterwards. To test which services are not needed after the PC has completed its start-up process, try stopping them. **But allow the PC to stabilize for 20-30 minutes before doing so.**

- a. Open Task Manager on the Audio-PC and Control-PC or Single PC
- b. Left-click on the Services tab, each service running will have a number beside it in the PID column.
- c. Right-click on those services one at a time but do not right-click on any of the services listed above for the Audio-PC or any of the services listed above for the Control-PC and Single PC.
- d. Left-click on **Stop** in the menu that appears. An essential service cannot be stopped and a message to that effect will appear. **Note:** some unessential services cannot be stopped this way. They are dealt with below.
- e. If you can stop a service, test whether it affects music playback. If it does, restart the service.
- f. Record which services that you are able to stop **do not affect music playback**.

8. Modify and Run the DSK.CMD script

Once you know which additional services can be stopped on the Audio-PC and the Control-PC or Single PC without affecting music playback (this may be system- and/or software-dependent), those services can be added to the DSK.CMD (modified CAD Desktop Services Killer script) that you will run on those PCs.

The services you are able to stop will include some needed for starting WS 2019 but which are not required afterwards. **Such services should not be disabled as this may interfere with restarting WS 2019.** Therefore, after startup it is safer to use the DSK.CMD script to stop such services collectively, or to stop (**not disable**) services individually in Task Manager or Windows Services.

- a. Open Windows Explorer using exp (exp.bat file) at the command prompt. Navigate to the Tools subfolder of the AO folder on the C: drive.
- b. Right-click on the modified DSK.CMD script included with the files downloaded above in Stage 1, Step 9. These files should now be in the Tools subfolder.
- g. Left-click on **Edit**. You will see a list of commands of the form **net stop X /yes** (X is the service name).
- d. Below the uppermost **timeout 1** insert the commands (**net stop X /yes** where X is the service name) needed to stop all the remaining unnecessary services that can be stopped if they are not already listed. You may also remove the commands for any services that are listed but are already not running. Do this for each PC.

The service names can be found in Task Manager. Left-click on **Services**, the service names are in the left-hand column. In Windows Services, right-click on the service, left-click on **Properties**, the **Service name** is given under the **General** tab. Do not use the 'Display name' listed below the Service name.

Note: A service on which one or more services depends cannot be stopped before stopping those dependent services. Check dependencies in Windows Services by right-clicking on the service, left-clicking on **Properties**, and left-clicking on the **Dependencies** tab. Dependent services must be placed in the DSK.CMD list before the service(s) they depend on.

Because of the varying recovery options (some of which cannot be changed) for each service, or for other reasons, you may have to stop some services in Task Manager after running DSK even though they are included in the DSK.CMD script (see below).

The command to stop the Windows Management Instrumentation Service and Time Broker service (Control-PC and Single-PC only) should be placed **after the second timeout 1**.

- e. **Save** the modified script and close the Edit window. The DSK.CMD scripts I use have changed somewhat since the previous version of the guide. This reflects differences attributable to me no longer using Fidelizer Pro and illustrates the effect of changes in optimization software on the service landscape.

The **DSK.CMD** script for my Audio-PC currently looks like this (**bolded lines should not be changed**):

```
timeout 1
net stop DsmSvc /yes
net stop UserManager /yes
net stop StateRepository /yes
net stop ProfSvc /yes
taskkill /T /F /IM WmiPrvSe.exe
timeout 1
net stop Winmgmt /yes
```

- f. The **DSK.CMD** scripts for my Control-PC and Single PC currently look like this:

```
timeout 1
net stop camsvc /yes (Single PC only)
net stop DeviceAssociationService /yes
net stop netprofm /yes
net stop NlaSvc /yes
net stop QWAVE /yes
net stop LanmanServer /yes
net stop UserManager /yes
net stop StateRepository /yes
net stop lmhosts /yes
net stop ProfSvc /yes
net stop Wcmsvc /yes
net stop EventLog /yes
net stop LanmanWorkstation /yes
net stop NetSetupSvc /yes (Single PC only)
net stop MSDTC /yes
net stop UsoSvc /yes (Control-PC only)
net stop EventSystem /yes
net stop SENS /yes
net stop ShellHWDetection /yes (Single PC only)
taskkill /T /F /IM WmiPrvSe.exe
timeout 1
net stop TimeBrokerSvc /yes
net stop Winmgmt /yes
```

Note: it is important to run the PCs for 20-30 minutes after booting to allow the PC to stabilize before running the DSK.CMD script.

- g. Run the DSK.CMD script by entering dsk at the command prompt. I recommend running the DSK.CMD script twice on the Control-PC and Single PC.

- h. Once the DSK.CMD script has completed, open the Task Manager at the command prompt to determine whether the services were stopped (under the Services tab).

9. Stop Unnecessary Processes/Services

The following [procedure](#) to reduce Windows processes was referenced by Le Dom on [Le Forum Indépendant de la Hifi et des Audiophiles](#) in the [Windows: JPlay FEMTO & Audiophile Optimizer & Fidelizer Pro & Process Lasso](#) thread. The procedure needs to be done only once.

- a. At a command prompt open the registry editor by entering **regedit**.
- b. Navigate to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control**. In the right-hand panel, look under the Name column for **SvcHostSplitThresholdInKB**.
- c. Change the default value (380000) for **SvcHostSplitThresholdInKB** to a value equal to or greater than the amount of RAM in KB installed on your PC. Use the following formula to calculate the value to be used (shown for 8 GB but use the amount of RAM on your PC):

$$8 \text{ GB} = 8 \times 1024 \times 1024 \text{ KB} = 8388608 \text{ KB}$$

To set the calculated value right-click on **SvcHostSplitThresholdInKB** and left-click on **Modify** in the panel that appears to open the **Edit DWORD (32-bit) Value** window that opens.

Change the **Value data:** field to 8388608 (for 8 GB RAM or to the value for the amount of RAM on your PC).

Left-click on **OK** and close the Registry Editor. On my PCs, following a reboot, this stops two unnecessary Windows processes over the number that can be reduced by following all other procedures in this guide.

Each time a PC is restarted, and after running the DSK.CMD script, follow the next steps to close additional processes/services that can be stopped.

- a. Open Task Manager on the Audio-PC and Control-PC or Single PC by entering taskman at the command prompt or using CTRL+ALT+DEL.
- b. Under **Apps**, right-click on **Windows Command Processor** (if running) and left-click on **End task** to close the Command Prompt.
- c. Under **Windows Processes**, and depending on the PC, the **State Repository Service**, **Server Service** and **Windows Management Instrumentation Service**, may still be running after using the DSK.CMD script once. If so, run the DSK.CMD script again.

Note: the **Windows Management Instrumentation Service** is set to restart after the first two failures. This recovery pattern can be changed. To change the recovery pattern do the following.

Enter **services** or **services.msc** at the command prompt to open Windows Services.

Navigate to and right-click on the **Windows Management Instrumentation Service**.

Left-click on **Properties** and left-click on the **Recovery** tab.

Left-click on the panels to the right of **First failure** and **Second failure** and left-click on **Take No Action** for each panel.

Left-click on OK, close the Services Window.

- d. The **State Repository Service**, **Server Service** and the **Windows Management Instrumentation Service**, also can be stopped in the Task Manager as can the **Windows Push Notifications User Service_xxyxx**. Left-click on the **Service** tab, right-click on the service, left click on **Stop**.

Note: Each time the PC starts up, the **Windows Push Notifications User Service_xxyxx** is assigned a different five digit ending. Thus, that service cannot be included in the DSK.CMD script.

- e. The following services also can be stopped in the task Manager as described in Step d if still running and present under **Windows Processes: Update Orchestrator Service, System Event Notification Service, Storage Service, Shell Hardware Detection, CNG Key Isolation, Com+ Event System and Cryptographic Services**.

- f. Under **Windows Processes**, you should be able to stop the **Console Windows Host** (this may appear only on the Control-PC and Single PC) and the **Shell Infrastructure Host**. For each process, right-click on the process and left-click on **End task**. A window will appear with the question “Do you want to end the system process “Console Windows Host”?” or “Do you want to end the system process “Shell Infrastructure Host”?”. For each process, tick the box beside “Abandon unsaved data and shut down” and left-click on **Shut down**.

This method can also be used to stop the **Win HTTP Web Proxy Auto-Discovery Service**, the **Network Store Interface Service** (on the Control_PC and Single PC only) and the **Com+ Event System** if still running. **Note that for these three services you must right-click on the process heading (that starts with “Service Host”) and not on the process name.** In some cases, it may be necessary to repeat the procedure to stop the service.

- g. Under **Background Processes**, right-click on **Host Process for Windows Tasks** and left-click on **End task**.

Note: the Fidelizer Pro core engine (shown under Background Processes) runs only to keep the clock at the setting selected during the Fidelizer Pro installation procedure, and to maintain the Core Isolation Policy selected during the Fidelizer Pro installation procedure (as confirmed on the JPLAY Forum by Windows X, the Fidelizer Pro developer). The clock setting is also maintained by JPLAY and Process Lasso can specify core assignments (CPU Affinity). So if you set the clock in JPLAY to your desired setting, and use Process Lasso (or other means) to set the core assignments (CPU Affinity), it is not necessary to keep the Fidelizer Pro core engine running. It can be stopped in Task Manager (right-click, End task), or in Process Lasso if the Process Lasso GUI appears during computer start up or is opened using the Prolasso.bat file. I previously found that when using JPLAY to set the clock and Process Lasso to set core assignments (CPU Affinity), stopping the Fidelizer Pro core engine in highly optimized PCs did not decrease/change sound quality.

- h. Under **Background Processes**, right-click on each listing of **Usermode Font Driver Host** and left-click on **End task**. Close the Task Manager.

Warning: make certain that all preceding steps you wish to perform have been completed before carrying out step “h” as afterwards you will have little legible information in any windows.

- i. Finally, you may also choose to stop the **Desktop Windows Manager**. Right-click on it and left-click on **End task**.

Warning: if you choose to stop the Desktop Windows Manager make certain that you do so only after step “h” above because after stopping this process you will no longer have access to a display on a monitor. Furthermore, you will then only be able to shut down the PC by holding the power button to force a shut down. I choose not to stop the Desktop Windows Manager.

10. Optimization Results

After the steps outlined above (but not stopping Desktop Windows Manager), the following processes remain in Task Manager on my PCs. **Note:** The precise components (and their order) that you will see remaining on your PC(s) will depend on the hardware/software configuration of your PC(s) and the processes you have stopped.

Audio-PC

Background Processes

jplay.exe

LemonadeElitist.exe

Process Lasso Core Engine

Windows Processes

Client Server Runtime Process x 2

Desktop Windows Manager

Local Security Authority Process {Security Accounts Manager}

Registry

Service Host: DCOM Server Process Launcher {Background Tasks Infrastructure Service, DCOM Server Process Launcher, Local Session Manager, Power, System Events Broker}

Service Host: Local Service (Network Restricted) {Time Broker}

Service Host: Local Service (No Network) {CoreMessaging}

Service Host: Local System {Group Policy Client, Task Scheduler}

Service Host: Remote Procedure Call {Remote Procedure Call (RPC), RPC Endpoint Mapper}
 Services and Controller App
 System
 System interrupts
 Windows Logon Application
 Windows Session Manager
 Windows Start-up Application

Control-PC

Background Processes

jplayfemto.exe
 ExerciseStabilizer.exe
 Process Lasso Core Engine
 Windows Wireless LAN 802.11 Extensibility Framework

Windows Processes

Client Server Runtime Process x 2
 Desktop Windows Manager
 Local Security Authority Process {Security Accounts Manager}
 Registry
 Service Host: DCOM Server Process Launcher {Background Tasks Infrastructure Service, DCOM Server Process Launcher, Power, System Events Broker}
 Service Host: DHCP Client {DHCP Client}
 Service Host: Local Service (No Network) {CoreMessaging}
 Service Host: Group Policy Client {Group Policy Client}
 Service Host: Task Scheduler {Task Scheduler}
 Service Host: Network Service {DNS Client}
 Service Host: Local Session Manager {Local Session Manager}
 Service Host: Remote Procedure Call {Remote Procedure Call (RPC), RPC Endpoint Mapper}
 Services and Controller App
 System
 System interrupts
 Windows Logon Application
 Windows Session Manager
 Windows Start-up Application
 Service Host: WLAN AutoConfig {WLAN AutoConfig}

Single PC

Background Processes

jplay.exe
 jplayfemto.exe
 LemonadeElitist.exe
 MajorityClean.exe
 Process Lasso Core Engine

Windows Processes

Client Server Runtime Process x 2
 Desktop Windows Manager
 Local Security Authority Process {Security Accounts Manager}
 Registry
 Service Host: DCOM Server Process Launcher {Background Tasks Infrastructure Service, DCOM Server Process Launcher, Local Session Manager, Power, System Events Broker}
 Service Host: Local Service (Network Restricted) {DHCP Client, WinHTTP Web Proxy Auto-Discovery Service}
 Service Host: Local Service (No Network) {CoreMessaging}
 Service Host: Local System {Group Policy Client, Task Scheduler}

Service Host: Network Service {DNS Client}
Service Host: Remote Procedure Call {Remote Procedure Call (RPC), RPC Endpoint Mapper}
Services and Controller App
System
System interrupts
Windows Logon Application
Windows Session Manager
Windows Start-up Application
WlansvcGroup {WLAN AutoConfig}

11. Final Steps

Only an external hard drive containing music files (if you are using one) should be connected by USB to the Control-PC. Only a DAC should be connected by USB (directly or via signal cleaners) to the Audio-PC. Only an external drive with stored music and a DAC should be connected by USB (directly or via signal cleaners for the DAC) to the Single-PC. Disconnect all other USB devices (mouse, keyboard, monitor) from the PC(s).

At this stage, you should be able to play music and control music playback via WiFi using appropriate control point software on your smart phone, tablet or an additional PC.

To shut off or restart the PCs, reconnect each mouse, keyboard and monitor as required, open Task Manager on the Audio-PC and Control-PC or Single PC by using CTRL+ALT+DEL. Navigate to the power icon at the lower right, left-click on it and left-click on Shut Down or Restart (to return to the pre-DSK Command Prompt window).

Note: if you previously shut down the Desktop Windows Manager process, you will only be able to shut down (but not restart) the PC by holding the power button to force a shut down.

Regardless of how the PCs are stopped, each time after restarting the PCs you will have to run the DSK.CMD script and, in Task Manager, stop (as required) any non-essential services and Background or Windows processes as detailed in Steps 7, 8 and 9 above. Although this may seem a bit arduous, after several run throughs and your familiarity with the process increases you should be able to get through the final steps in a minute or two at most.