HIGHEND-AUDIOPC.COM

AudiophileOptimizer
Setup Guide

Content

High-End Computer Audio

Welcome to a journey to achieve the absolute high-end of computer audio, made in Switzerland. You will experience an analog-like audio quality you've never heard before on your computer audio transport system. Our mission is to get you there in a pleasant way, without the hassle of complex adjustments and changes to your operating system. This guide will show you how to get your own high-end computer audio transport using Windows Server 2012 R2, Windows Server 2016, Windows Server 2019 or Windows 10.

Our solution will transform your AudioPC into a true audiophile component. A dedicated AudioPC becomes an ultra-high-end component, ready to use with a simple press of the power button. You don't even need to log in once everything is set up. If your system contains an SSD and a modern motherboard, it will be up and running within a couple of seconds and your shutdown times will be even faster.

Kernel-Streaming is one available option Windows offers which is, in our opinion, by far the best option to choose even if it's "ancient technology". You will get the best sound quality and stability, the lowest latency, and it works with most devices. A typical driver developer will certainly tell you WASAPI is the way to go, no doubt about that. But in the end, you should use whatever sounds best to your ears and matches your system. No matter if you use Kernel-Streaming, ASIO or WASAPI, you will enjoy a unique audio experience.

Please take your time and read this guide **very carefully**. It will not only show you how to run the AudiophileOptimizer, it will cover many more topics aside from AO's usage. It will show you exactly how-to setup and fine tune your computer audio system to get the maximum sound quality possible. Follow these instructions as close as you can.

Please don't employ methods aside from those recommended in this guide. We will not support foreign scripts, optimization scripts, optimization tools, anti-virus software, software firewalls or anything else not listed in these pages. Please don't install, configure or disable anything not mentioned in the guide or not specifically needed to run your audio device. The AudiophileOptimizer will take care of **all** OS related settings.

Software Package

The AudiophileOptimizer, ServiceTool and Setup can be run in GUI, minimal-server or core mode. Remember, you should run this software on dedicated AudioPC's to achieve the best possible results in sound quality.

SETUP.EXE

This is the installer for the AudiophileOptimizer package. It will create a Folder called "AO" in the root directory of your system drive (most likely C:\AO). It will install all components in that folder and create the needed shortcuts on your desktop as well as the needed entries in the start menu and path variables. You can use setup.exe for an **initial installation** and also to **upgrade** your existing AO installation.

AUDIOPHILE_CORE.EXE

This is the most important part of the package; this program will optimize your system. The AudiophileOptimizer will make permanent changes to your system, but can be completely uninstalled if needed. If you like you can create an image backup with Macrium Reflect, Paragon, Clone-Zilla or Acronis, etc. before you use the AudiophileOptimizer.

SERVICE_TOOL.EXE

The main purpose of the ServiceTool is to set all disabled drivers and services back to their original state for maintenance tasks. The ServiceTool can also be used to reset all settings of the AudiophileOptimizer. The ServiceTool can be used for many other tasks as well: for example, to switch between modes (core/minimal/GUI), installing drivers in core mode and much more. You can also use it to replace your shell and enable Autologon. It's a very powerful tool that will greatly support you in many ways.

AUDIOPHILE_SHELL.EXE

The AudiophileShell is a launcher tool which makes handling in core mode much easier. You can set it as shell replacement via ServiceTool or directly launch it by typing "as" in a command prompt window and press enter. It will allow you to launch AO, ServiceTool, the command prompt, PowerShell and let you reboot or shut down your music server. Depending on your setup it will additionally allow you to launch SCONFIG, the device manager, sound control panel as well as the file explorer.

SHOW_ADAPTERS.CMD

This will show you the name of your Ethernet connection if you are already in core mode. You need this information to set an IP address with **netsh** command. This is sometimes needed because of lazy coded drivers that won't work with sconfig.vbs.

SET_IP.CMD

If you want to set an IP address in core mode, and sconfig.vbs does not work with your network card driver, take the information generated by "**show_adapters.cmd**" and edit "**set_ip.cmd**" with an editor like notepad. Put in the name of your Ethernet connection and replace your desired IP-Address, subnet mask, etc.

> **ATTENTION:** All cmd files must be used in command prompt and not in PowerShell.

Mandatory Software

You will need an ISO of Windows Server 2012 R2, 2016, 2019 or Windows 10. **Always use the very latest ISO available from Microsoft.** Do NOT use any ISO files from HP, Lenovo, Sony, Acer or any other vendor other than Microsoft! Burn the ISO to DVD or use the Windows 10 Media Creation Tool to create a bootable USB-Stick of the ISO. This USB Stick can only be used for the installation itself. Please install the Windows operating system on an SSD or M2 drive (mechanical drives should be avoided for best sound quality). Windows evaluation or trial installations can be converted to a permanent retail version later if so desired. You need:

- AudiophileOptimizer & ServiceTool
- DAC/DDC/Soundcard drivers
- Windows Server 2019 RTM Standard, Foundation, Datacenter & Essentials Edition (DOWNLOAD SERVER 2019 EVALUATION ISO) or
- Windows Server 2016 RTM Standard, Foundation, Datacenter & Essentials Edition (DOWNLOAD SERVER 2016 EVALUATION ISO) or
- Windows Server 2012 R2 Standard, Foundation, Datacenter & Essentials Edition (DOWNLOAD SERVER 2012 R2 EVALUATION ISO) or
- Windows 10 Pro, Enterprise, LTSB, Home, K&N, Single Language Edition, Evaluation **Recommended:** Pro, Enterprise, K&N or LTSB Edition (DOWNLOAD EVALUATION ISO)

Optional Software

- Roon, RoonServer, RoonBridge, JPLAY, Hysolid, MQn Player, Bug head Emperor, HQPlayer, Foobar2000, TIDAL, Spotify, Qobuz, WiMP, Logitech Media Server, Audirvana, etc.
- Shairport4w (AirPlay), Acourate Convolver, dBpoweramp, etc.
- VB-Audio ASIO Bridge & Virtual Cable Driver
- Chipset drivers for your Mainboard & network card(s)
- Drivers for SOtM, Adnaco or JCAT USB Card
- Windows 10 Media creation Tool

OS Installation & Best Practices

If you are unsure about how to properly setup a computer audio system and/or install the Windows operating system or simply want to learn a lot about the topic, please study our additional guides in detail:

Computer Audio Best Practices Guide: https://pdf.highend-audiopc.com/computer_audio_best_practices_guide.pdf
Windows Server 2019 Setup Guide: https://pdf.highend-audiopc.com/windows_server_2019_setup_guide.pdf
Windows Server 2016 Setup Guide: https://pdf.highend-audiopc.com/windows_server_2016_setup_guide.pdf
Windows Server 2012 R2 Setup Guide: https://pdf.highend-audiopc.com/windows_server_2012R2_setup_guide.pdf
Windows 10 Setup Guide: https://pdf.highend-audiopc.com/windows10_setup_guide.pdf

AudiophileOptimizer

Installation

We recommend you to copy setup.exe into the root directory of a USB Stick and then run it on your dedicated audio machine. Setup.exe will install the complete AudiophileOptimizer package into the folder "AO" on your system drive (most likely C:\), create shortcuts on the desktop and add the needed start menu entries for the AudiophileOptimizer and ServiceTool.
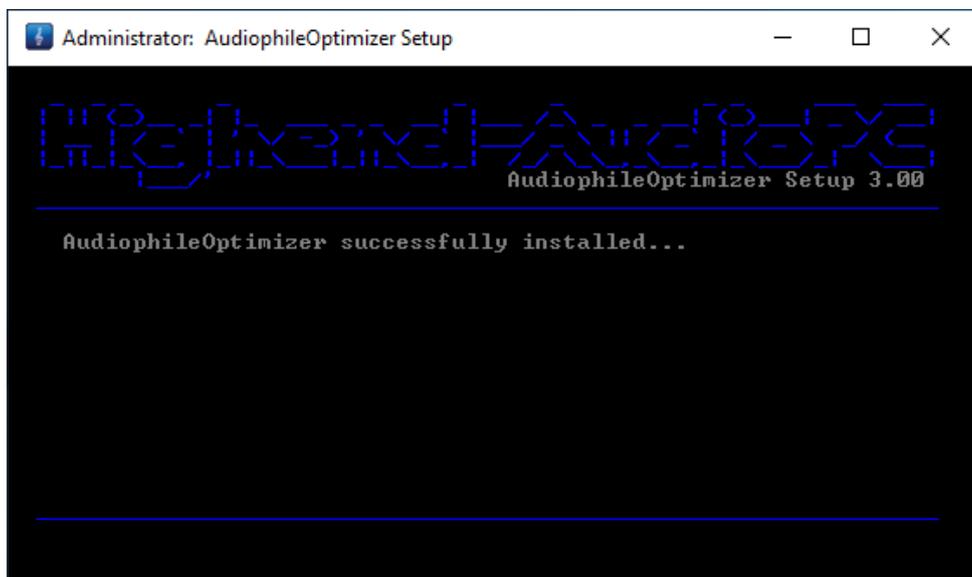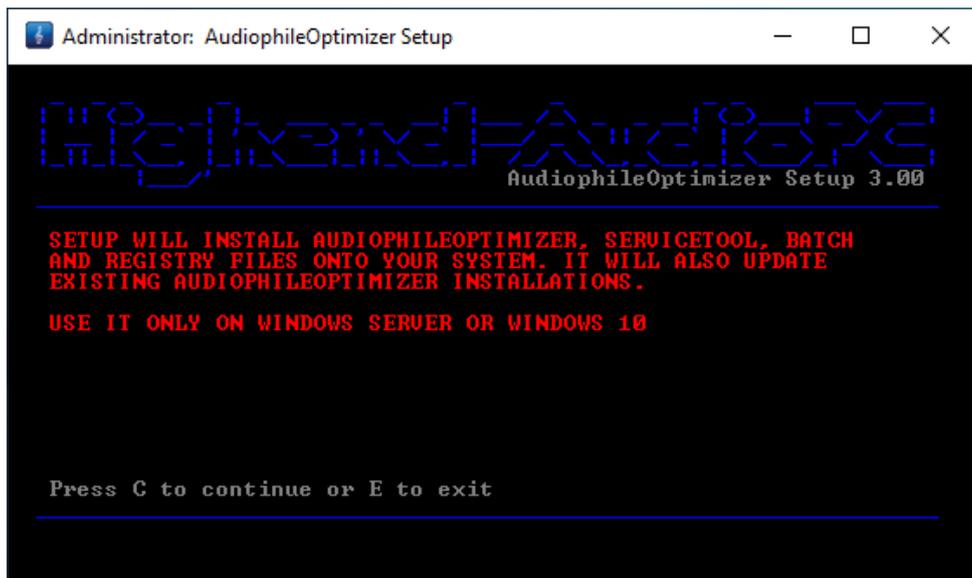
Windows Server Core: If you are installing or updating AO 3.00 on a Windows Server installation in core mode you will have to insert the Windows installation media during setup. It is **absolutely crucial** that you use **exactly the same installation media** as you used to install the windows server operating system itself. It does not matter if you insert a physical DVD-ROM, a bootable USB stick or mount the ISO via PowerShell, but it must be the **identical media** you used to install the operating system.

Source Media Info: https://www.highend-audiopc.com/how-to/source-media

Activation

It is important that you have all hardware (network cards, chipset, etc.) connected, turned on and all needed drivers properly installed prior to activation of AudiophileOptimizer. Disable all unneeded network adapters in BIOS or through device manager but have at least one active LAN adapter. **It is absolutely no problem to install DAC/DDC drivers after the Activation of AO!**

You must not have any "unknown devices" with a yellow or red sign in your device manager before you activate the Audiophile Optimizer. If you have any "unknown devices" with a yellow or red sign, the mechanism generating the Hardware-ID will not work as expected, resulting in additional Activation-Keys needed. Devices with a yellow sign which you don't plan to use anyway can be safely disabled.

When you run the AudiophileOptimizer for the first time, you will be asked if you already have an Activation-Key for this machine. If you already activated this machine in the past, please enter the Activation-Key that was generated and emailed to you in the past. If this is the first time you want to activate the AudiophileOptimizer on a new machine, just enter "no" and press enter.
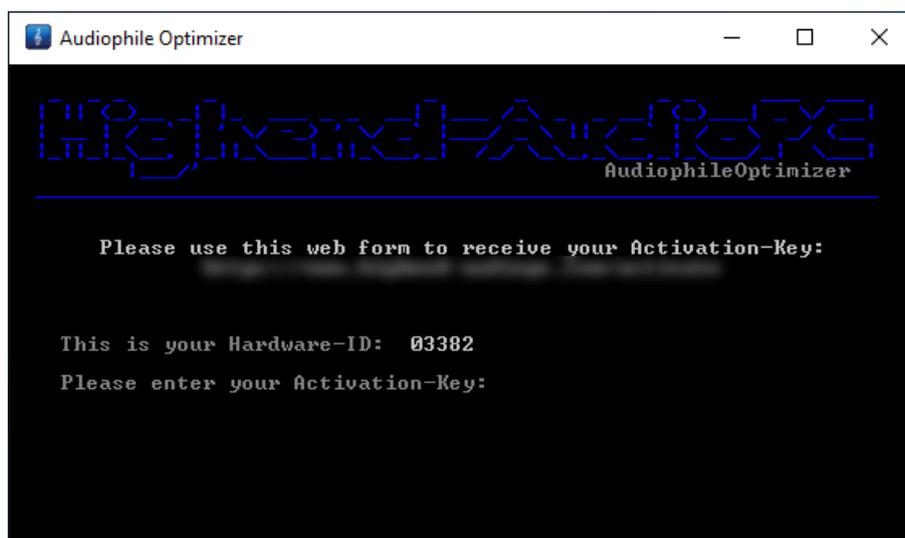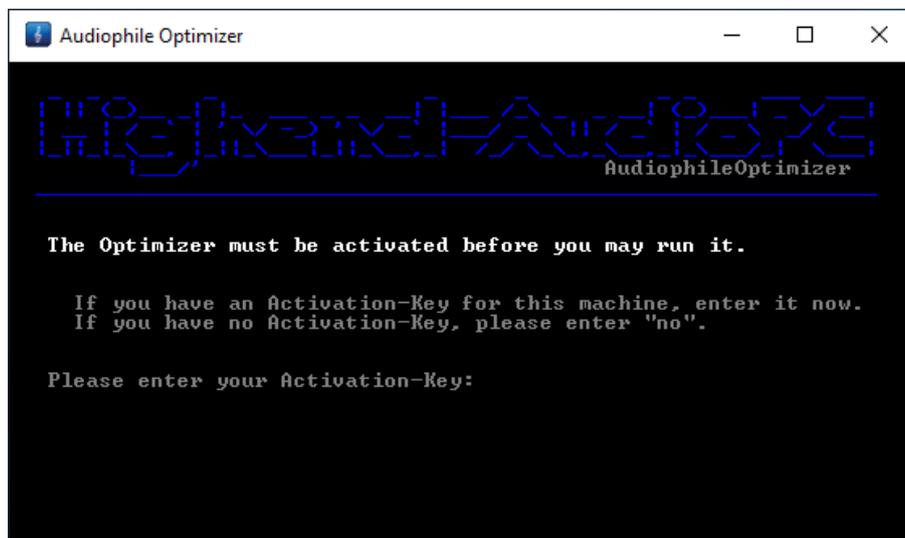
Activation Portal

If you have never activated a machine before, enter "no" and you will be displayed a Hardware-ID. Open the self-service activation portal and enter the email (PayPal) address you ordered the AudiophileOptimizer with together with the Hardware-ID displayed.

Important: you can use **any other** internet enabled computer to open the activation self-service portal, there is absolutely no need to do this on the actual music server! On this other computer, simply go to the self-service activation portal and generate your Activation key then enter it on the music server to activate AO.

Once you have generated your Activation-Key, you will also get a confirmation email containing your Activation-Key and matching Hardware-ID. **DO NOT DELETE THIS EMAIL** because as long you use the same hardware, the same Activation-Key will work on the same machine. This means you can use the same Activation-Key on the same hardware for unlimited times.

Upgrading AudiophileOptimizer

If a new version of the AudiophileOptimizer is released, run the new version of setup.exe over your current installation. Setup.exe can be run in core, minimal-server and GUI mode. You don't have to do a reset via ServiceTool before you run setup.exe. Once setup.exe updates your current version of AudiophileOptimizer, it will automatically launch the latest ServiceTool to make a full reset.

AO 3.00 Upgrade Notice: If you upgrade AO 2.20 (or older) to AO 3.00, setup will launch ServiceTool 3.00 at the end of the installation process to make a full reset. Since your old Activation-Key will no longer work for the new version, ServiceTool will need a new Activation-Key. Do not close ServiceTool, go to the above-mentioned Activation-Portal and generate a new AO 3.00 compatible Activation-Key and activate ServiceTool with the Activation-Key; this will also activate AO and all other components.
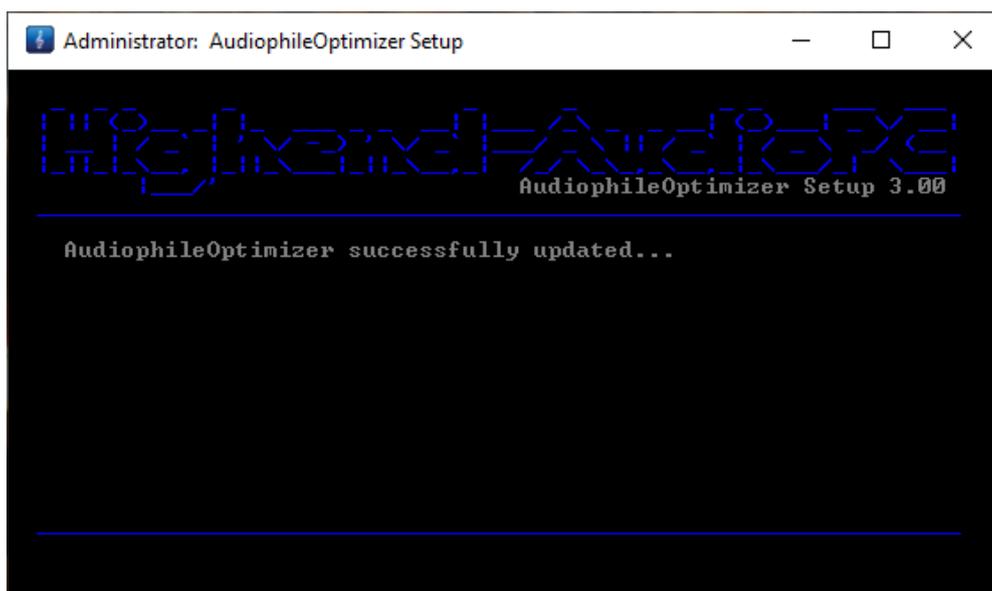
Using AudiophileOptimizer

Read the warning and press "C" if you agree and want to continue.
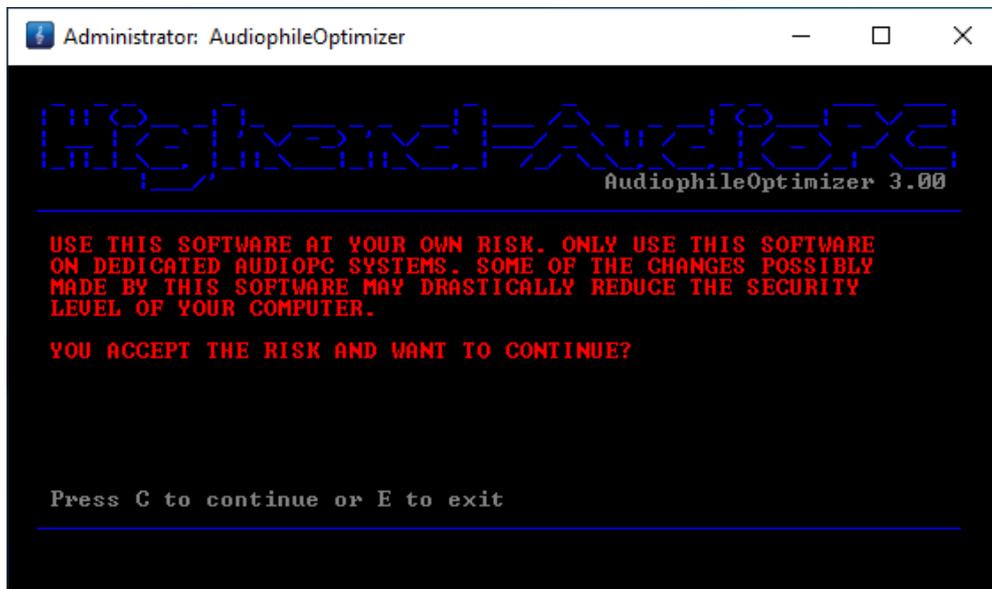
While the AudiophileOptimizer prepares the system, it will also check the version of the operating system. It will only run on supported operating systems for quality & stability reasons. If no supported OS is detected, the AudiophileOptimizer will exit without making any modifications to your System.

Supported operating systems are:

- Windows Server 2019 Standard, Datacenter & Essentials Edition (EN, DE, FR)
- Windows Server 2016 Standard, Datacenter & Essentials Edition (EN, DE, FR)
- Windows Server 2012 R2 Standard, Essentials, Foundation & Datacenter Edition (EN, DE, FR)
- Windows 10 (Pro, Enterprise, LTSB, K&N, Home, Single Language Edition & Evaluation)

Once a supported operating system is detected, the AudiophileOptimizer will start with the optimization. The AudiophileOptimizer will not start on any unsupported platform; it will only run on tested OS's listed above to ensure everything works exactly as designed.

Usage type

First, you will have to define the usage type of the PC on which you are currently running the AudiophileOptimizer. AudiophileOptimizer has an integrated JPLAY-Detector which will check if the JPLAY service is running or not. If no JPLAY service is running, SinglePC mode will automatically be selected. If you use JPLAY, you can choose between ControlPC, AudioPC & SinglePC mode. The usage type can only be set once; if you want to change it again you have to do a reset using the ServiceTool. If you want to see the usage type menu and do not use JPLAY, start AO with the parameter -ut (type "ao -ut" and press enter).
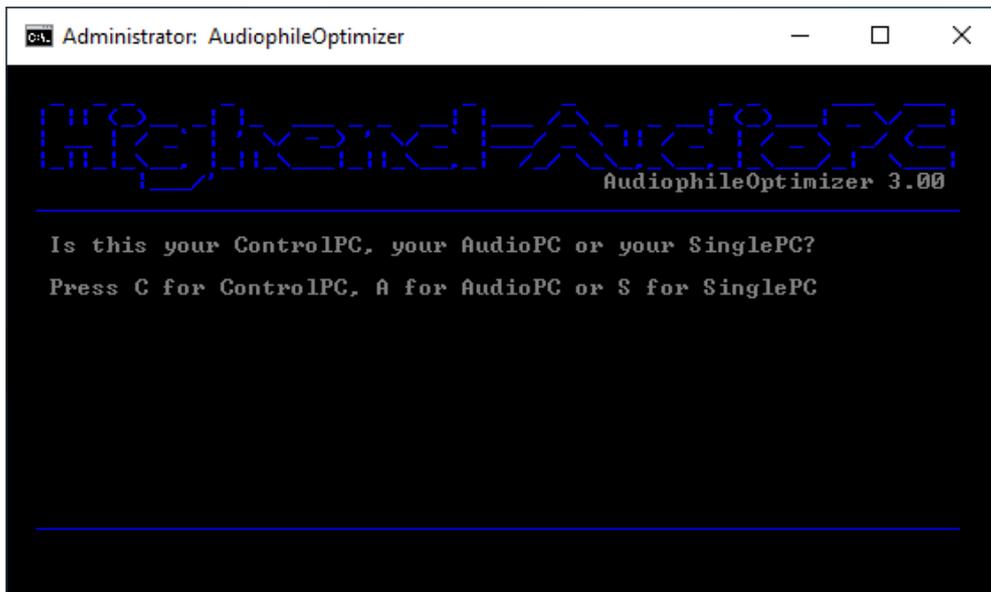
Express, Advanced & Ultimate Mode
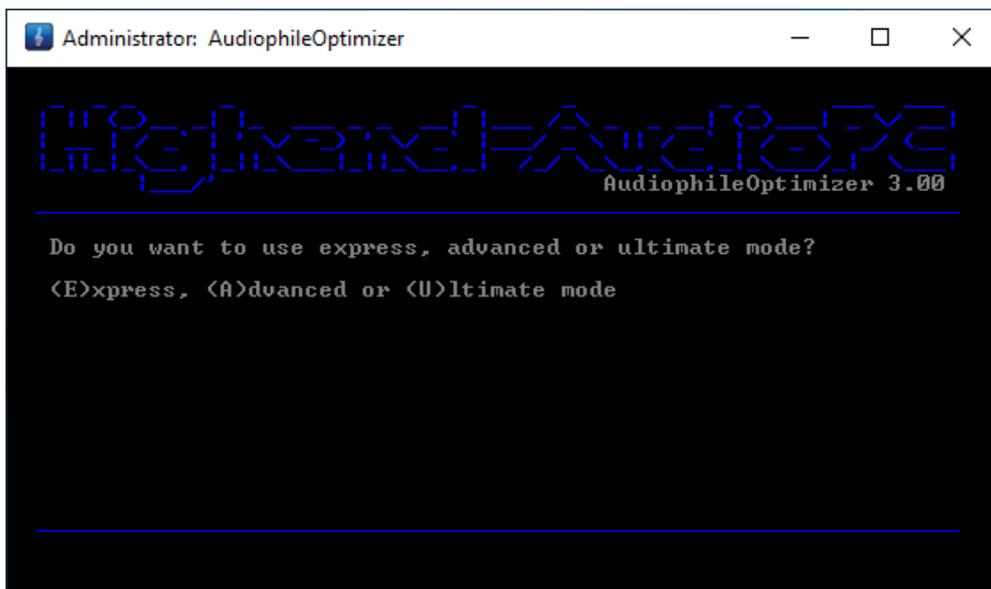
If you choose express mode, AudiophileOptimizer will run without asking you any questions. It will automatically choose the Sound-Signature and Digital-Filter setting that about 80% of all users like the most

(based on the experiences of the development phase). Express mode will result in a mildly optimized but very compatible configuration.

For more experienced users, advanced mode offers several options and configuration settings. It will let you take control over what AO does and doesn't; it will give you the ability to fine tune your system using Sound-Signatures and Digital-Filters. It will let you deactivate or disable more services/drivers and enable a host of other configuration possibilities. Advanced mode is recommended for advanced users.

Ultimate mode offers the full range of options and best performance AO can offer; it will give you maximum control over every aspect of AO and your sound quality. Ultimate mode is only for experienced users; this includes deep knowledge about Windows systems in general, TCP/IP and network configuration as well as the AudiophileOptimizer itself.

If you want to hear the full potential of the AudiophileOptimizer you have to select ultimate mode in AO to take full advantage of all options offered.

Sound Signatures

After you've selected the usage type of your machine, you can decide between four different Sound Signatures. Find out for yourself which Signature matches best with your hardware, your loudspeakers or headphones, and last but not least, your personal taste. If you are not sure which Sound Signature to start with, use Signature 4. Option X represents the windows default setting.
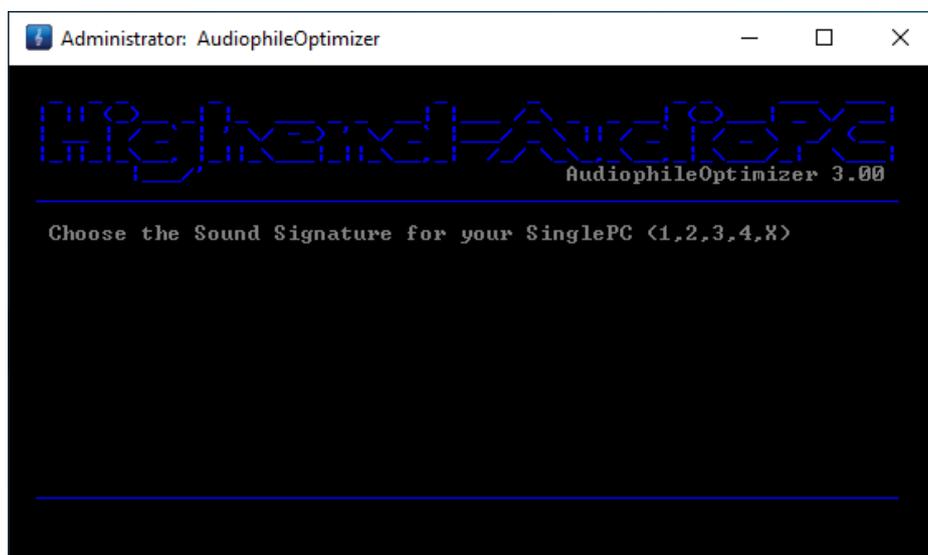
If you run a DualPC setup, the sound Signatures of the ControlPC and AudioPC can be mixed, so a total of 16 (25, including Windows default settings) different combinations are possible.

Digital-Filter Mode

After selection of the sound signature, you will be able to choose the Digital-Filter mode. If you are not sure which mode to use, start with mode D. Use the mode that sounds best to your ears. Option X represents the windows default setting.
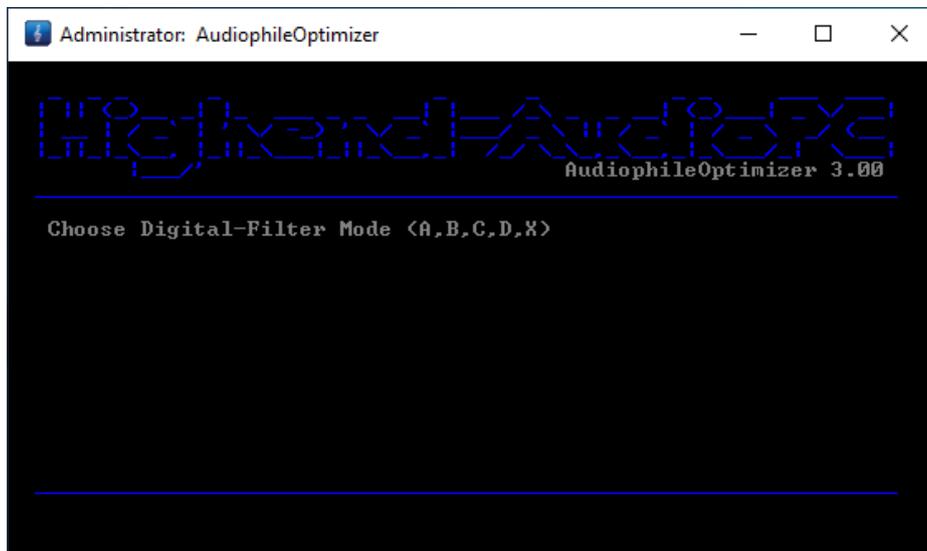
If you want to change the Sound Signature or Digital-Filter mode, just run the AudiophileOptimizer again. Starting with the second run of the AudiophileOptimizer, it is possible to choose a new Sound Signature or Digital-Filter mode and then exit (by pressing "E") the AudiophileOptimizer without having to set all other options again. The other option is "S" to start over; no reboot is required.
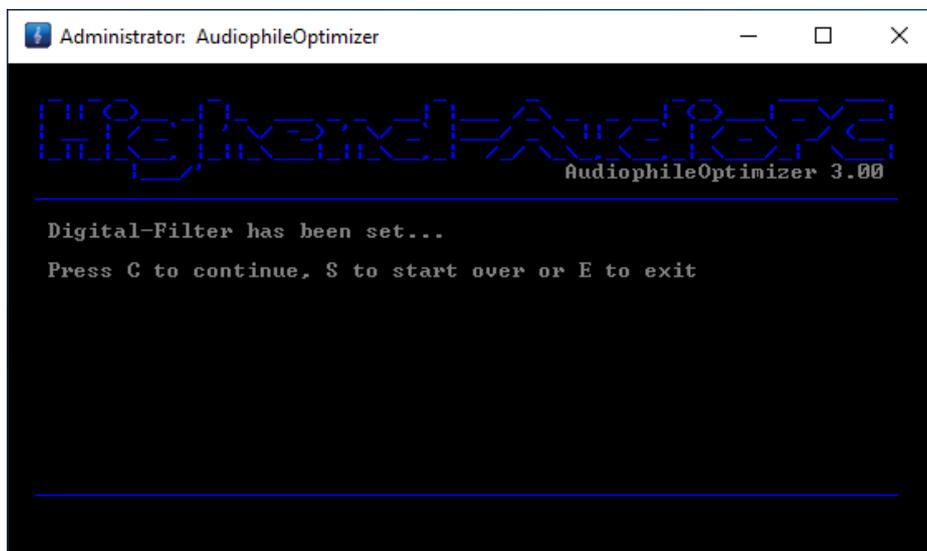
Best Practice

To most easily find your personal Sound Signature and Digital-Filter mode, it's best to change both during playback of a song. If you choose "S" to start over, you can change the Sound Signature and Digital-Filter mode again and again until you find your perfect setup. Once you have found it, you can choose "E" to exit. Press Ctrl-Alt-Del during music playback to start the Task Manager. You can then start the AudiophileOptimizer to adjust your Sound Signature and Digital-Filters.

INFO: All Sound Signatures and Digital-Filter modes are 100% bit perfect and do not alter the source in any way at any point in time. They only change the way the operating systems handles the running tasks and their priorities as they relate to the operational state of the CPU. Always use the latest available version of the ServiceTool & AudiophileOptimizer.

Installation of Kernel-Streaming and MediaPlayer Support
This feature primarily re-enables the Kernel-Streaming architecture in Server Core. Aside from that it enables countless media players in either core, minimal-server and GUI Mode of Windows Server 2012 R2, 2016 & 2019.

Overview of Kernel-Streaming and MediaPlayer support features:
-        Enables Device Manager (Server 2012 R2, 2016 & Server 2019)
-        Enables Sound Control Panel (Server 2016 & Server 2019)
-        Enables Kernel-Streaming (x86 & x64) in core mode (Server 2012 R2, 2016 & 2019)
-        Enables TIDAL in core mode (Server 2012 R2, 2016 & 2019)
-        Enables Bug head Emperor/Infinity Blade in core mode
-        Enables MMCSS (Multimedia Class Scheduler) in core mode
-        Enables Kernel-Streaming support for JRiver Media Center in core mode
-        Enables Kernel-Streaming support for JPLAYmini in core mode
-        Enables Kernel-Streaming support for JPLAY & JPLAY FEMTO in core mode
-        Enables Foobar2000 in core mode
-        Enables JRiver Media Center 20.0.16 and higher in core mode
-        Enables many other Media Players and Streaming Clients in core mode
-        And many more…

Roon, HQPlayer & Spotify Support
This feature installs all needed Windows components for Roon, RoonServer, HQPlayer, Spotify & TIDAL to run on Windows Server 2012 R2, 2016 and 2019. On Windows Server 2016 & 2019 RoonServer and RoonBridge can even be used in Core mode. More details about Roon, Windows Server & AO here: https://www.highend-audiopc.com/how-to/roon

Registry Optimization
Once the Sound Signature and Digital-Filter mode are set, the AudiophileOptimizer will make all the changes to the registry needed to optimize the system for the best audio quality possible. It will take care of your hard drive settings, optimize the file system, memory management, CPU management, power settings, TCP/IP tuning, IRQ prioritization, turn off many unnecessary or counterproductive windows features, disable all visual effects, adjust system settings for best performance, customize the GUI, taskbar and icons, and much more. Hundreds of changes occur during this process.

Enable or disable HPET
Try both options; use whatever sounds better on your system. Default recommendation is to enable it.

Enable or disable SEHOP
Try both options; use whatever sounds better on your system. Default recommendation is to disable it.

WASAPI/MMCSS Optimization

It's highly recommended you enable WASAPI/MMCSS Optimization no matter what mode you are in. If you are in core mode, this feature will even re-enable MMCSS in core mode.

SCSI-Miniport Drivers

Be very careful if you want to use this option. Only use it if you have IDE or SATA drives. Do not use this option under any circumstances if you have SAS, SCSI or RAID drives. If you still do so your system might not be able to boot again!

Display Stand-By Behavior

You can select from A to D to choose after how many minutes your display will go into stand-by mode. **Do not use this feature if your DAC or DDC is connected via HDMI!**

USB Optimization

Press "E" to enable USB optimization or "D" to disable it. Press "D" as well if you don't want to use USB optimization at all. It is highly recommended that you enable USB optimization (also on the ControlPC if you run a Dual-PC setup) but, as always, use whatever sounds best in your system. If you select to use USB Optimization, USB 3 Link Power Management will be made visible in power management (windows default is to hide this option) and disabled automatically as well. **It is highly recommended to use this feature even if no USB components at all are connected to the computer.**

Disabling Drivers & Services

You will be able to disable many unnecessary Windows services and drivers, all of which are unneeded in common computer audio scenarios. Disabling "Drivers & Services" will have a nice effect on the overall sound quality of your system.

ATTENTION:

If you get in trouble and software you need working does not work anymore, please run ServiceTool and choose "A" for a full reset, then run AudiophileOptimizer again without disabling "Drivers and Services".

Plug & Play Service

Some DAC's need the Plug & Play service (or even the event log service) running. If you disabled the Plug & Play service, you may not change the USB ports of your devices (DAC etc.) anymore. If you want to enable the Plug & Play service again, enter "`sc config plugplay start= auto`" in a command prompt window and reboot your machine.

Network related Services

This is one of the most important settings to decide about. Especially on the AudioPC it is very important to disable all network related services; this will result in a very nice step-up in overall sound quality. If you decide to disable network related services, Remote Desktop and Windows Remote Management will be automatically disabled as well. Depending on your scenario (ControlPC for example), disabling all network related services also means dealing with some drawbacks. Depending on your needs, it might be best not to disable network related services on the ControlPC. If you use network drives or a NAS, you won't be able to connect to them anymore.

Windows Management Instrumentation

Certain applications like Roon, Acourate Convolver, HQPlayer, HQPlayer NAA or Fidelizer Pro need the WMI service to be running. If you plan to use such software, answer this question with "no". Our default recommendation is to say "yes".

USBPAL Drivers (RigiSystems)

DAC's or DDC's that use USBPAL drivers by RigiSystems (like the Mytek STEREO192-DSD DAC or the Audio Research DAC8) need certain windows services running to work properly. By choosing N, the AudiophileOptimizer won't disable the services needed by those devices.

Defragmentation

Just before the optimization is finally done, you will be asked to defrag your hard drive or TRIM your SSD. The Microsoft defrag utility will automatically know if it is a hard drive or SSD and will give it the right treatment. **You should do this at least once every few months.**

Short Names and Parameters

Instead of manually changing directories in a command prompt and starting AudiophileOptimizer by typing "audiophile_core.exe", you can take advantage of short names. This means you can start AO by just typing "ao" (instead of "audiophile_core.exe") and pressing enter. This also works for ServiceTool: just type "st" and hit enter. Thanks to the path variables (which setup.exe created for you), you don't need to change the directory anymore. The short names will work in any directory or path, no matter where you are. This example shows how to start AO in a command prompt.
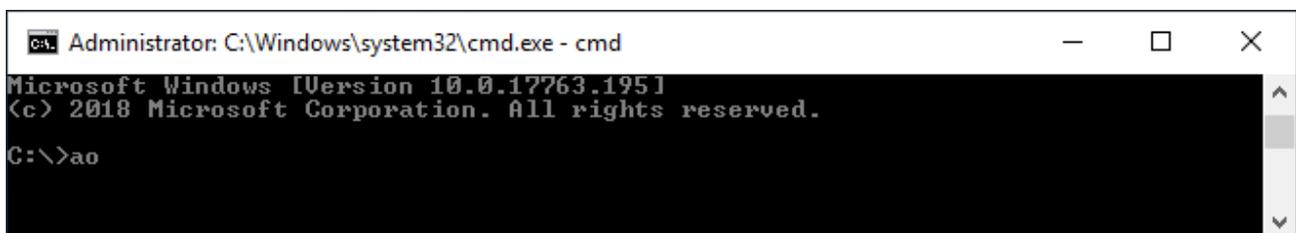
```
Administrator: C:\Windows\system32\cmd.exe - cmd                      —    □    ✕

Microsoft Windows [Version 10.0.17763.195]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\>ao
```

AO and ServiceTool offer several parameters. These parameters can also be combined if needed.

AudiophileOptimizer:

AO -U	Start AO in ultimate mode
AO -E	Start AO in express mode
AO -L	Creates AO settings log file
AO -UT	Possibility to select usage type even if JPLAY is not installed
AO -WASAPI	Starts AO in WASAPI Injector mode (cannot be combined with other parameters)
AO -FILTER	Lets you directly select Sound Signatures/Digital-Filters

ServiceTool:

ST –R	Force a full reset via ServiceTool

Setup:

Setup -source	Force copying of the Windows source files

Update Notification

If your system is connected to the internet and a newer version of the AudiophileOptimizer is available, each the AudiophileOptimizer, ServiceTool, AudiophileShell and Setup will notify you about a new update available as soon as available. Just go to our download portal and get the latest version of the AudiophileOptimizer and install it according to this guide. It is **highly recommended to always use the very latest version available!**

WASAPI Injector

Run "AO -WASAPI" to launch the WASAPI injector and say YES to the question if you want to install the WASAPI support. During the procedure it is absolutely normal that the screen will go blank for a while (might be 1 or 2 minutes), just wait and let AO do its job. **Be aware that the WASAPI injector is a dedicated part of AO which is not available during normal runs of AO.**
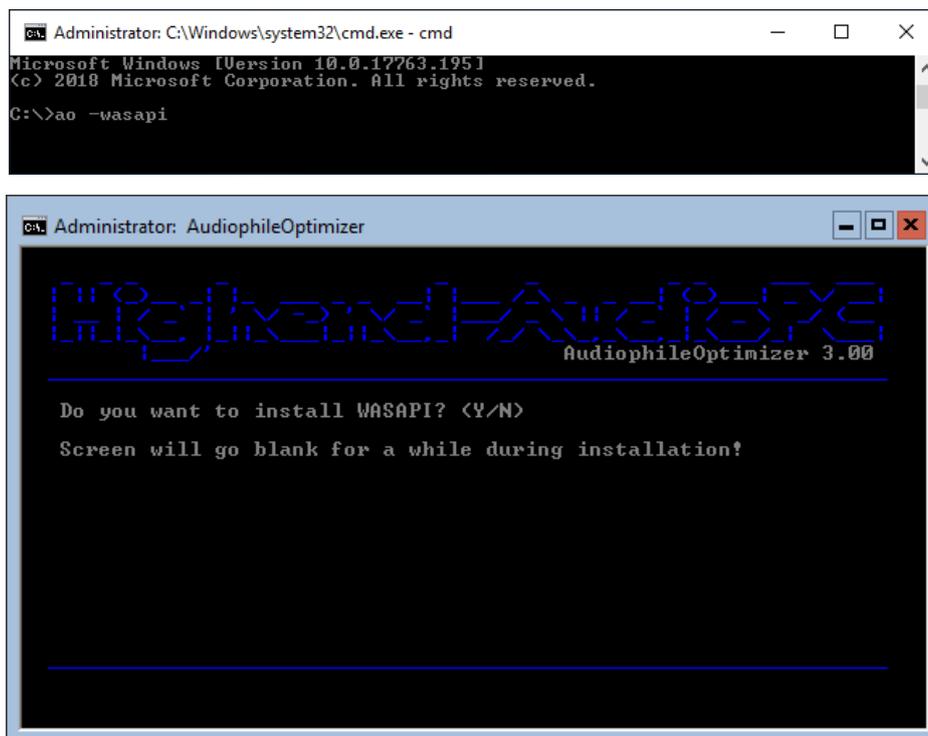
You can now install JPLAY, RoonServer, TIDAL, HQPlayer or whatever your player of choice is.

Now run AO again and do a full run with your desired settings. During this run you do not need to install KS & MediaPlayer or Roon Support again, the WASAPI injector has already done so for you.

The WASAPI Injector works only with Windows Server 2016 & 2019 in core mode! For Windows Server 2019 in core mode you also have to install the server application compatibility FoD feature for WASAPI to work!

WASAPI/FoD How-To: https://www.highend-audiopc.com/how-to/wasapi

Sound Control Panel

If you like to check the sound control panel you can do so by entering "**mmsys.cpl**".
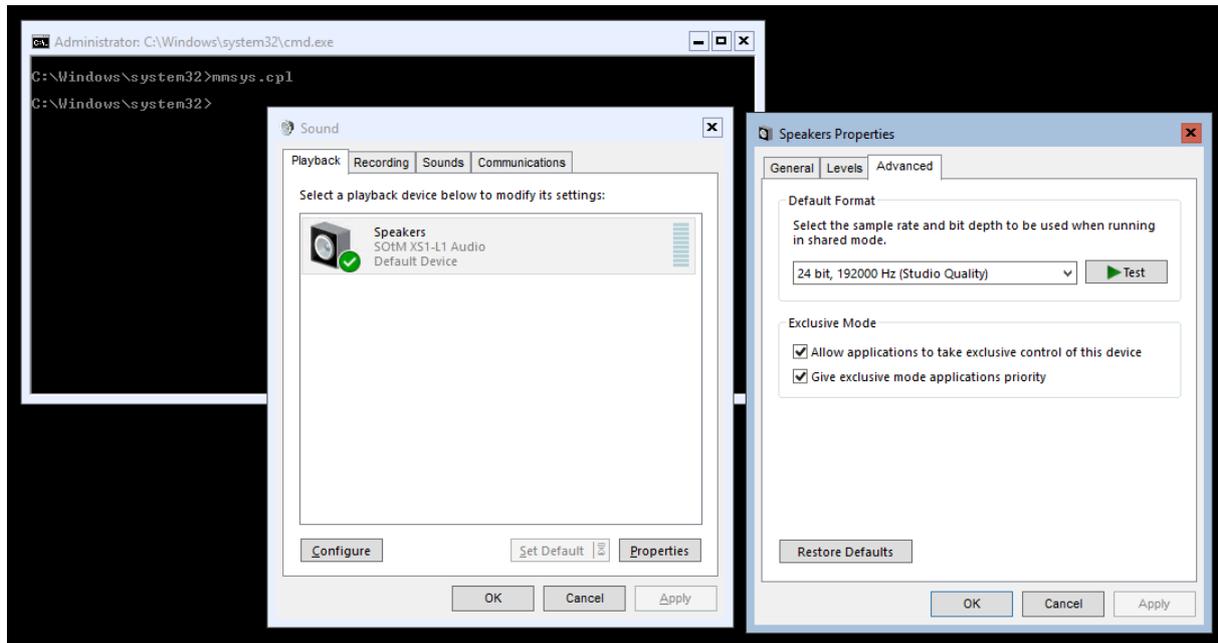
Device Manager

AO's setup.exe automatically re-enables the device manager in Windows Server core mode. If you want to launch the device manager you can simply enter "**devmgmt.msc**" or use the AudiophileShell to launch it.
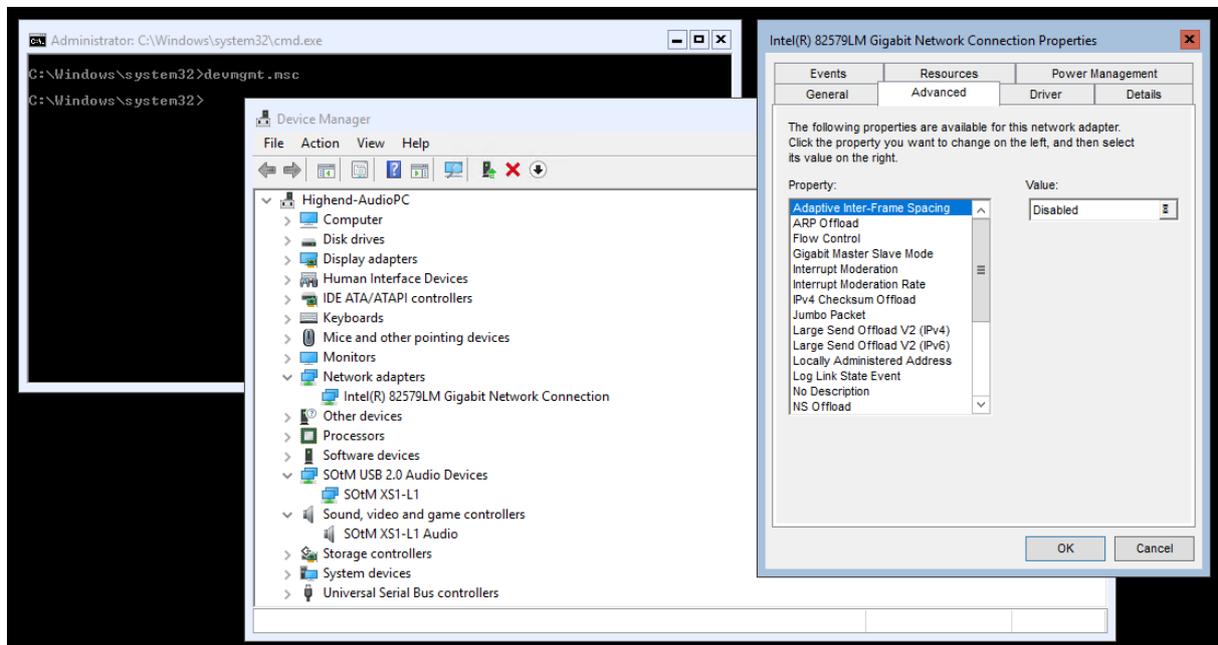
INFO: For both device manager and sound control panel your current location (path) does not matter. The device manager will be available in Server 2012 R2 core, 2016 core and 2019 core. The sound control panel will only be available in Windows Server 2016 core & 2019 core if WASAPI has been installed.

AO Settings Log File

AudiophileOptimizer can generate a settings log file for you. This will get handy if you ever want to achieve the exact same settings in the future. To get a proper log file, do a full reset using ServiceTool, then run AudiophileOptimizer using the argument "-L". Once AO completes the run, it will write the log file to C:\AO\AO_Settings.log. After the reboot, go into C:\AO and open your Log file and print it if you like. You can also save the log file in any other location, but don't leave it in the AO directory (C:\AO\).

```
 AO_Settings - Notepad                                      —    □    ×

 File   Edit   Format   View   Help

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 |_||_|\_, |_||_\__|_||_\_,_| /_/\\_,_|_\__/¯| \_|
          |__/¯              AudiophileOptimizer 3.00 Settings Log
 _____

   OS: Windows Server 2019
   Hostname: Highend-AudioPC

   Sound Signature: 4
   Digital-Filter Mode: D

   Kernel-Streaming/MediaPlayer support installed: YES

   High precision event timer (HPET): enabled
   Windows Defender: disabled
   Anti-Spy for Windows 10: disabled
   Structured Exception Handling Overwrite Protection (SEHOP): disabled
   Software Protection Service: enabled
   WASAPI/MMCSS: YES
   SCSI-MiniPort drivers disabled: YES
   USB Optimization enabled: YES
   Drivers and Services disabled: YES
   Plug and Play service: disabled
   AMD CPU/SATA drivers: disabled
   Remote Desktop services: enabled
   Remote Management services: disabled
   Netowrk related services: enabled
   Windows Management Instrumentation: enabled




                              Windows (CRLF)    Ln 18, Col 1    100%
```

AO Requirements

It is **highly recommended** that you set up a **dedicated** installation of Windows in order to use the AudiophileOptimizer to get the maximum possible sound quality. AudiophileOptimizer can also be used on your daily machine, but sound quality results are much better if you use a dedicated windows installation.

Use only ISO from Microsoft for your Windows Installation. <u>DO NOT USE</u> modified and customized installation media from vendors like HP, IBM, Lenovo, Acer, Sony etc. Use only original Windows ISO from Microsoft, always use the most up to date version available.

If you don't have a separate machine dedicated to your music setup, you must establish a so-called "Dual-Boot" system. This will allow you to continue using your regular (untouched) Windows system and have the dedicated and highly optimized Windows installation available for listening to music. When you boot your computer, you will be asked to choose which of the installations to boot from.

AudiophileOptimizer | Setup Guide 3.00
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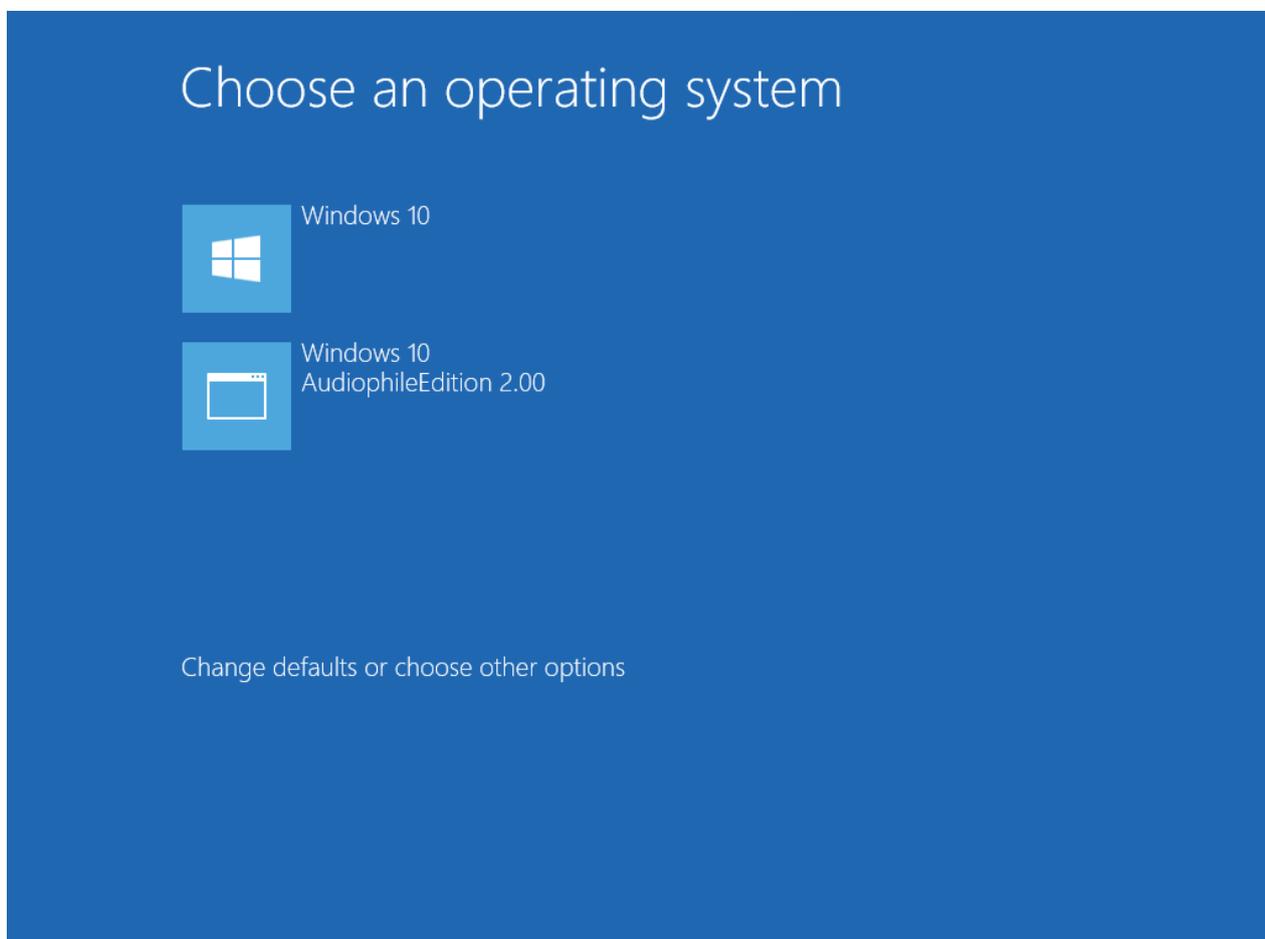
Remove OneDrive

If you select this option, AO completely removes OneDrive from your system (instead of just disabling it).

Anti-Spy Feature

The Windows 10 Anti-Spy Feature takes care of the built-in Windows 10 telemetry applications on several layers. It will not only disable the unwanted Spyware but will also block possible transmissions of data. This will both make your system sound better **and** help secure your privacy.

Disable Windows Defender

If you say yes to this option, AO completely disables the Windows Defender. This is recommended for better sound quality, but if you disable Windows Defender, make sure you have a good Firewall or UTM system that provides at least a basic layer of virus and malware protection.

Strip Down & Repair Windows 10

The "Strip down Windows 10" feature removes most of the unneeded but still pre-installed Windows 10 components (Metro UI Apps). If you want to reinstall these components, you can simply run the "Repair Windows 10" feature.
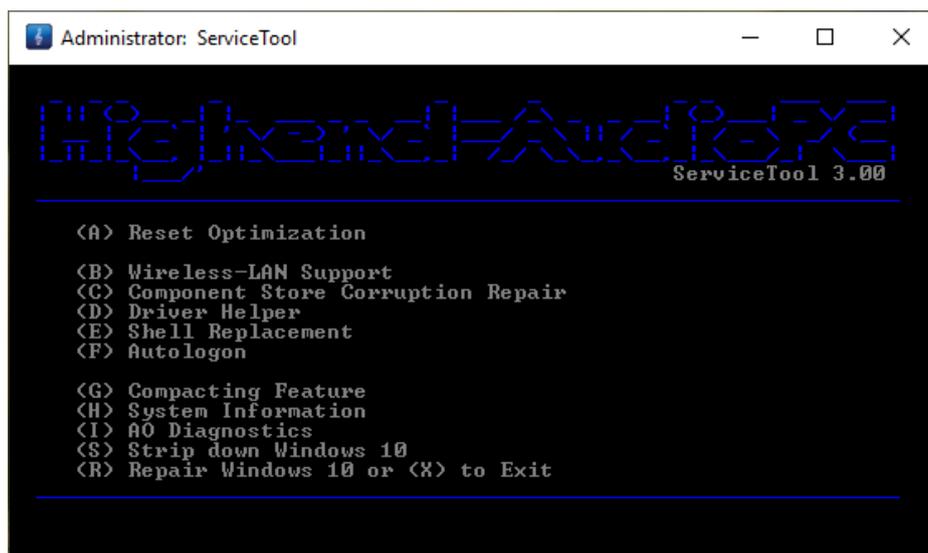
ATTENTION: The AudiophileOptimizer and the ServiceTool for Windows 10 offer various features specifically for Windows 10. Also, please be aware that some features specifically applicable to Windows Server 2012 R2, Server 2016 or Server 2019 are not available in AudiophileOptimizer or ServiceTool under Windows 10.

ServiceTool

This is an overview of all functions ServiceTool can offer. ServiceTool will help you greatly to accomplish a lot of maintenance and configuration tasks.
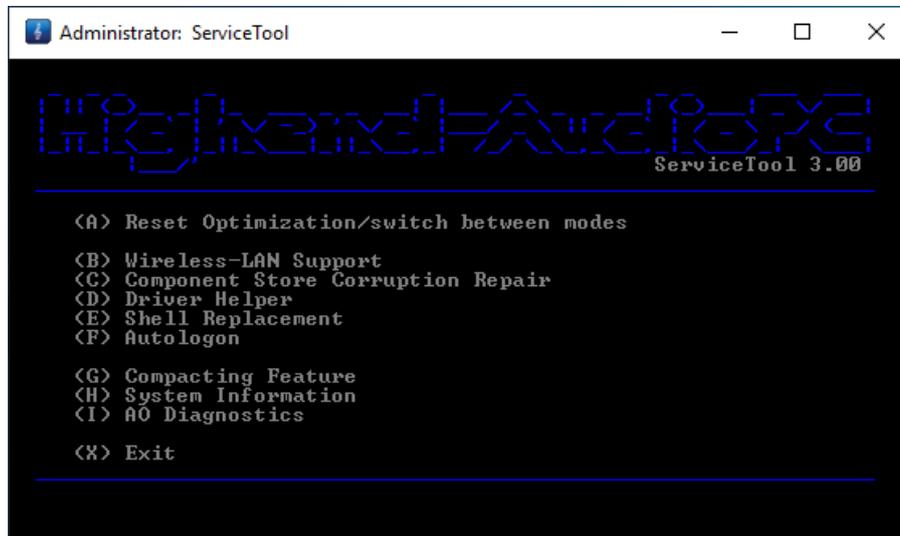
Reset Optimization

The main purpose of the ServiceTool is to reset the changes made to services and drivers by the AudiophileOptimizer. Selecting (A) will partially undo the optimizations and restore the original state of all drivers and services. For example, it will enable you to maintain your system and install Windows updates. Using the reset does not uninstall or disable AO. After a reset via ServiceTool, your system is still partially optimized (about 95%). **After doing a reset via ServiceTool, don't forget to start AO again and do a full run to get in a fully optimized state again.**
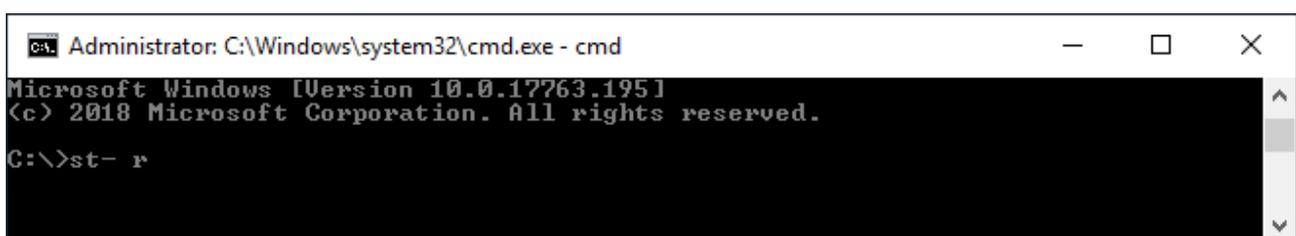
If you want ServiceTool to directly do a full reset, start it using parameter -r (type "st -r" and press enter).

Wireless LAN-Support (Windows 2012 R2/2016/2019)

Windows Server doesn't have Wireless-LAN support installed by default. So even if you can successfully install your WLAN driver, it won't work until you have additionally installed Windows Server Wireless-LAN support. WLAN will only work in GUI mode (and Minimal-Server mode in 2012 R2), but not in core mode!
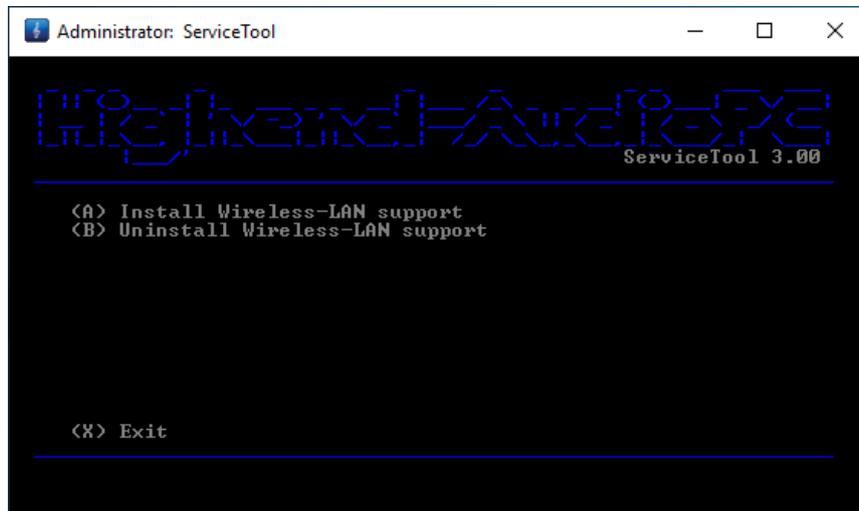
Component Store Corruption Repair

Should you encounter any problems during switching between modes, your component store is probably corrupted. You can try running the component store corruption repair function to repair it. Should any defects be detected, they can only be repaired if you have an active and working internet connection.

MORE INFO: https://www.highend-audiopc.com/help/fixing-component-store-corruption

Driver Helper

Instead of using install.cmd to install a driver, you can now use the Driver Helper from ServiceTool. If you can't install a driver because of compatibility issues, Driver Helper will get it done. Once you start Driver Helper, browse and select the EXE file of your driver (setup.exe or install.exe). Driver Helper will automatically set compatibility-mode and a few other settings that will help to install your driver. Driver Helper will **not** run with INF or any other files than EXE. Should you have manually edited your driver's INF files, you can use the Driver Helper to enable or disable driver test-signing but not to install the INF files itself.

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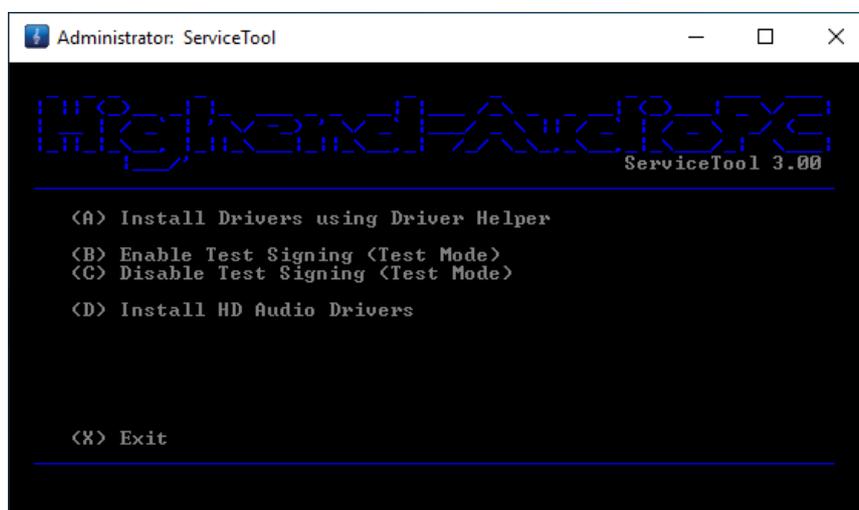
Shell Replacement

In GUI mode your desktop environment is your so called "shell". In core or minimal-server mode your shell is a simple command prompt. Instead of starting the desktop or command prompt as shell, you can replace the shell with your favorite media player. This has an auto start character and is much better for sound quality.

 You can enable and configure such a shell replacement via ServiceTool. The ServiceTool has a built-in check routine to make sure you cannot configure a shell replacement that won't work. However, you should only use this feature if you know exactly what you're doing.

You can set Roon, RoonServer, TIDAL, HQPlayer, Bug head Emperor, TIDAL, Fidelizer Pro, Total Commander, Foobar2000, Qobuz, muso and many others as shell; all of them need to be installed in their default locations.
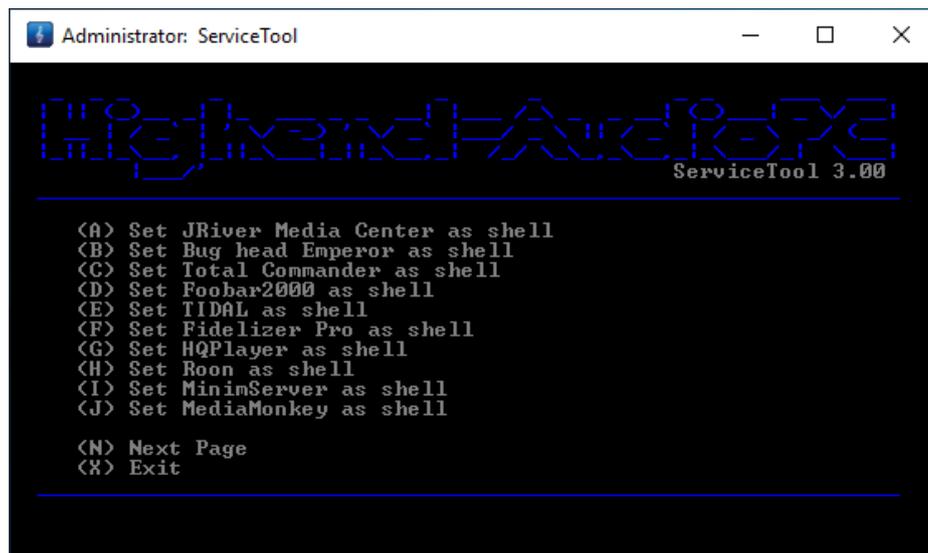
INFO: If your files are not in the correct place, ServiceTool will show you a warning and won't change anything on your system.

Custom Shell

It is exactly what its name implies, you can create your own shell script which fits your needs for 100%. You can customize it to your own needs and finally set it as shell replacement using the ServiceTool's shell replacement feature.

How-To: https://www.highend-audiopc.com/how-to/custom-shell

AudiophileShell

The AudiophileOptimizer 3.00 brings a completely new module called the AudiophileShell. It is a launcher tool which makes handling of several tasks a lot easier, especially if you are in core mode. You can do simple tasks like starting the command prompt, PowerShell, the AudiophileOptimizer or ServiceTool as well as reboot or shut down your music server. Of course and depending on your Windows installation, you can also launch the device manager, the sound control panel or SCONFIG (en-US core only).

There are two ways of using the AudiophileShell. You can either use it on-demand by typing "as" in a command prompt window or you can set it as shell replacement using the ServiceTool's shell replacement feature. Depending on the Windows version you run and the mode you are in as well as other factors as like if FoD is installed or not, it will show more or less available options.

This screenshot shows the AudiophileShell on Windows Server 2019 in core mode with Features on Demand (FoD) & WASAPI installed.
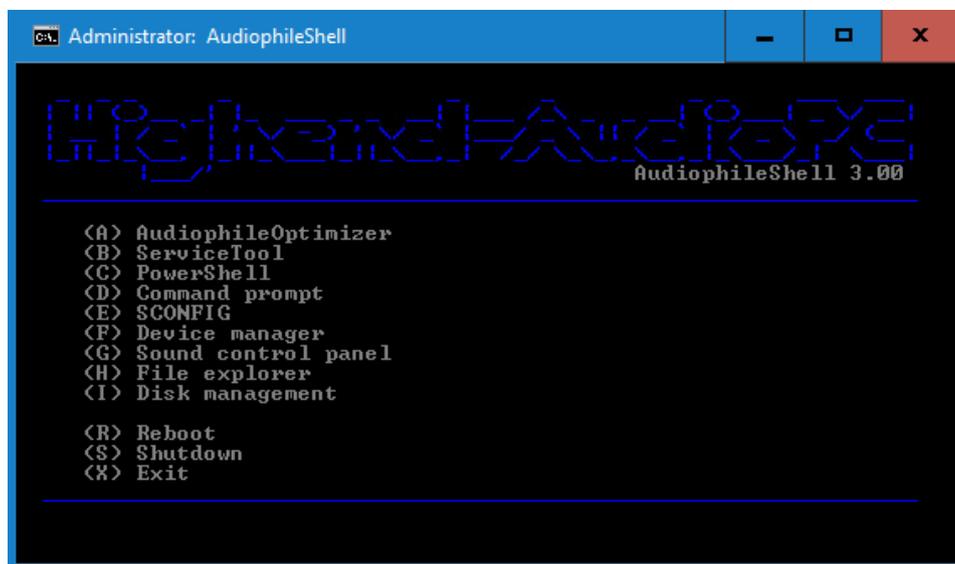
Restoring default shell

You can also restore the default shell using the ServiceTool. It will automatically check whether you are in core, minimal-server or GUI mode and restore the appropriate default shell for you. It will restore the command prompt in core/minimal-server or the desktop environment in GUI mode.

Install HD-Audio Drivers

In AO 3.00 the ServiceTool's DriverHelper brings a new sub-module -> Install HD-Audio drivers. If you follow this procedure before you install your DAC driver chances are very high that you will have to install it only once and no longer have to uninstall and reinstall it.

Also, if you are facing issues with driver signature enforcement (you have to press F8 and disable driver signature enforcement on each boot), this will help your DAC driver to get working at all and also remove the need to press F8 and disable driver signature enforcement on each boot.

Before you can use this feature, you have to press F8 during boot and disable the driver signature enforcement manually, this needs to be done only one time but it is absolutely crucial you do it before you run the Install HD-Audio drivers feature.

Once booted you have to launch ServiceTool, then choose the Driver Helper and then select "Install HD-Audio Drivers". Once you started the installation you must be prompted 4 red windows warnings about the installation of unsigned drivers. If and only if you see these 4 warnings and accept them, the HD audio drivers will be correctly installed. You do not need to press F8 again on the following boots, it's just for that one boot before you use that feature.

If you cannot get it to work, disable the Secure Boot feature in your BIOS/UEFI!
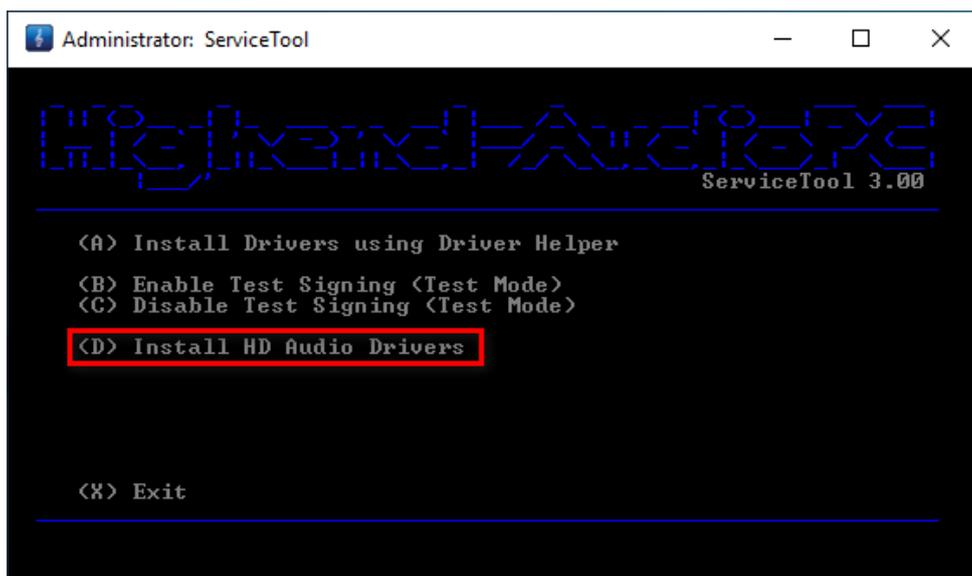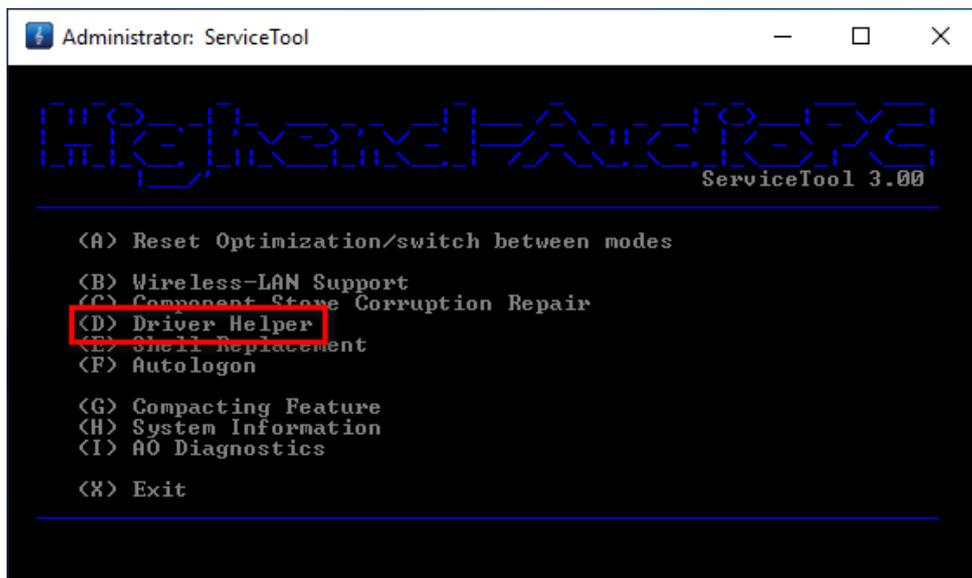
Info & Questions: https://www.highend-audiopc.com/how-to/hd-audio-drivers

Autologon

If you want to enable Autologon, you can do so by using the ServiceTool. Choose "E" on the first screen, then run "A" to enable & configure Autologon. ServiceTool will use your current user and will ask you for your current password; the rest will be automatically configured by the ServiceTool.
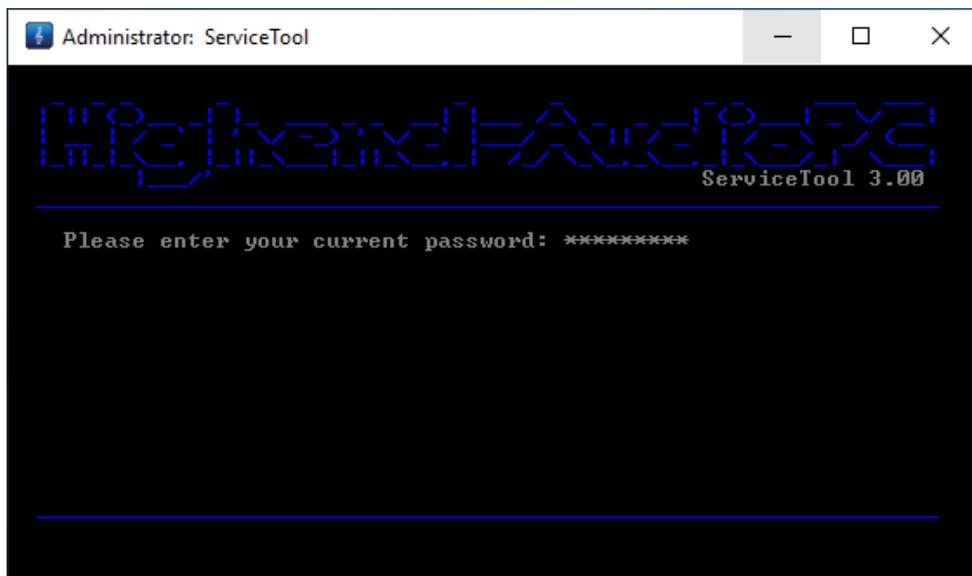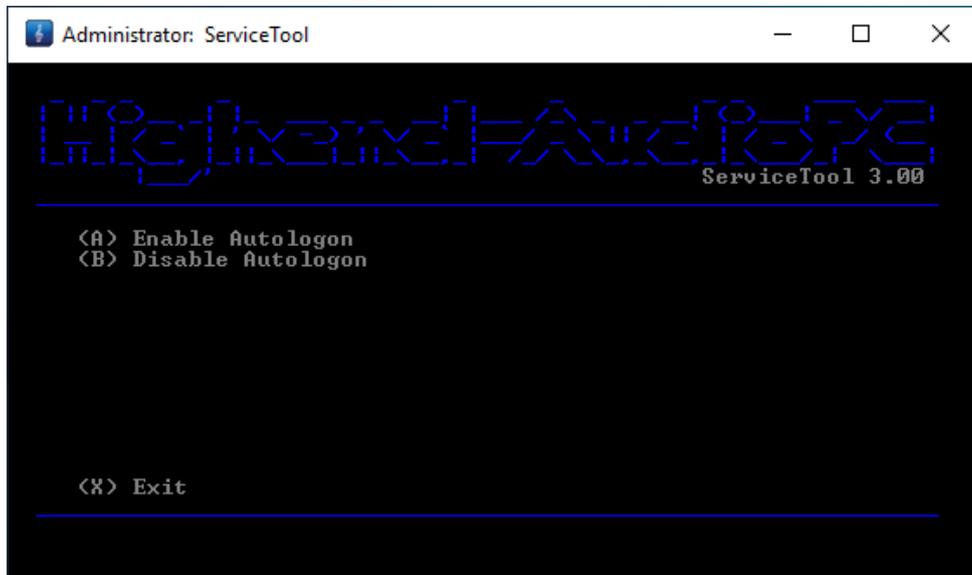
INFO: Don't worry about password expiration; AudiophileOptimizer will take care of this for you.

Compacting Feature

You can use the ServiceTool's Compacting Feature to make your system partition much smaller. This is useful for "Windows in RAM" systems. Please see external documentation about how to setup Windows in RAM. Be aware that compacting is a very intensive process and will take a long time to complete. **DO NOT INTERRUPT THE PROCESS UNDER ANY CIRCUMSTANCES!**
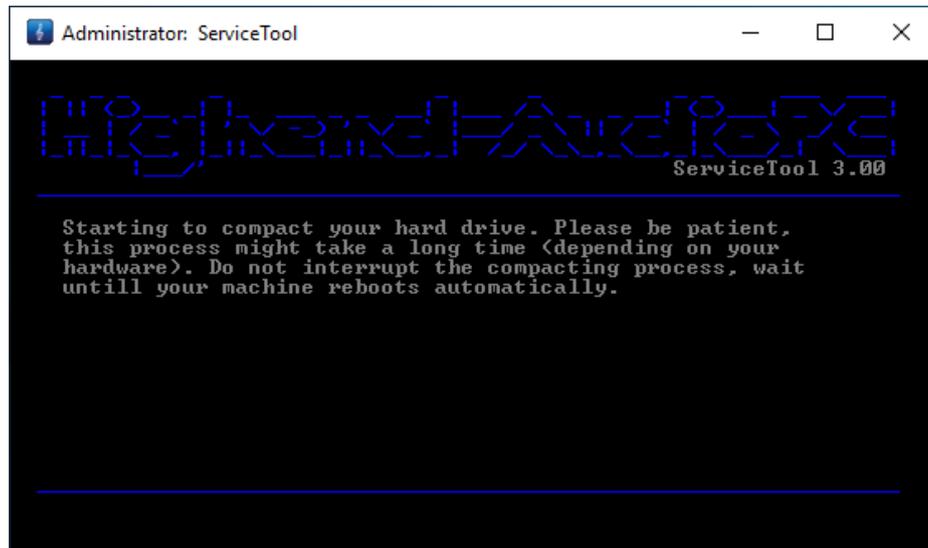
INFO: The compacting feature is not designed for Windows 10 but you may use the "strip down Windows 10" feature instead.

System Information

You can use the ServiceTool to display information about your hardware. It will show you the exact model of your mainboard, CPU, your DAC or DDC, the vendor's name of your RAM, its speed in MHz and the part number of your RAM.
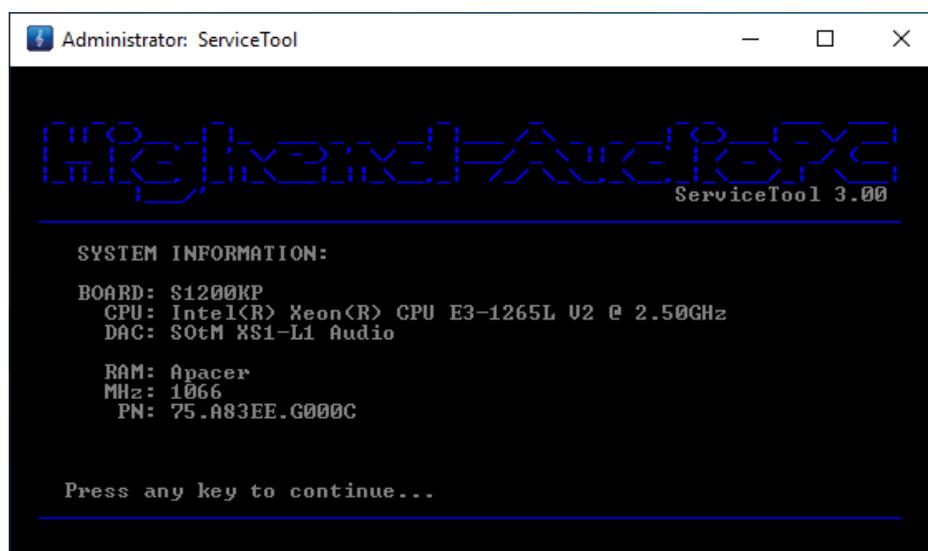
AO Diagnostics

You can use the ServiceTool to collect several log files of your system and have it sent them to our diagnostics facility. Start the ServiceTool and select Option "**I**" to enter AO Diagnostics. Then press "**A**" and follow the onscreen instructions to start the collection of the diagnostic log files. If you have a working internet connection, the logs **will be automatically uploaded to our diagnostic facility**. If you have no internet connection, the log file (diagnostic.log) will be saved locally and you can send it via email.
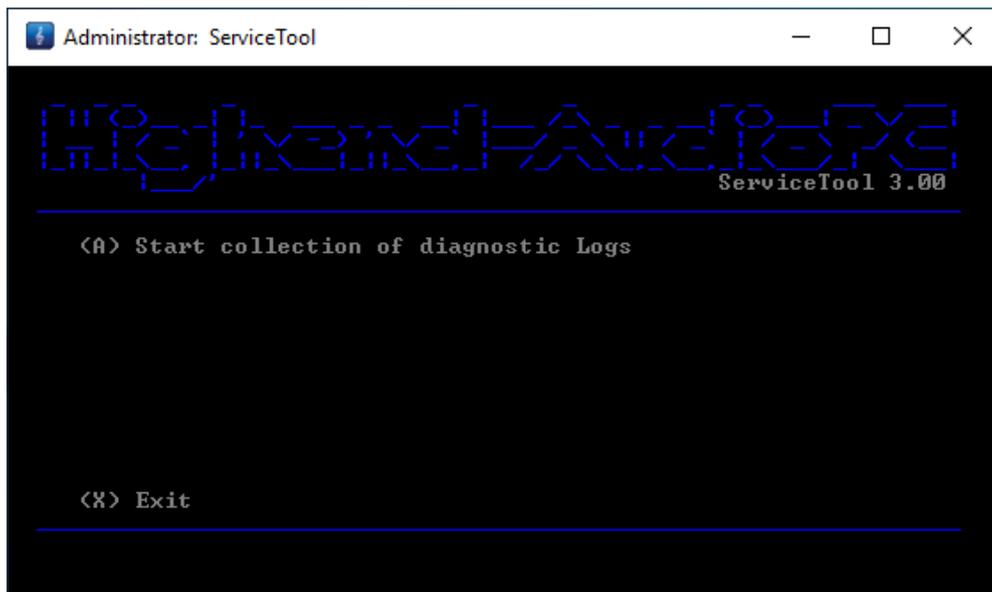
ATTENTION: You have to open a support request via email before you upload your diagnostic log files. If you do so without first opening a support case, your log files will be deleted after a few days.

AudiophileUninstaller

If needed the AudiophileOptimizer can be completely uninstalled. The AudiophileUninstaller will remove all files and folders as well as all optimizations and changes done by the AudiophileOptimizer. To uninstall the AudiophileOptimizer click on "Apps & Features" respectively "Programs & Features" and then just hit the "Uninstall" button.

How-To: **https://www.highend-audiopc.com/how-to/audiophile-uninstaller**
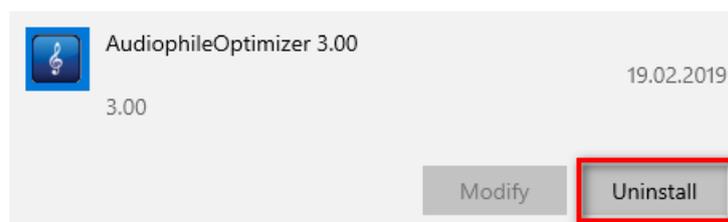
Frequently Asked Questions

Q: I cannot find or did not receive my Activation-Key via email, what's wrong?

A: The AudiophileOptimizer uses a hardware-bound copy-protection system. This means your Activation-Key must be generated according to your machine specific Hardware-ID. To get your Hardware-ID, you must run audiophile_core.exe or service_tool.exe on your target system. Note the displayed Hardware-ID and open the <u>self-service</u> portal (you can also use an entirely different computer to open the self-service activation portal) to generate your personal Activation-Key. Once you generate your Activation-Key, you will also get a confirmation email containing your Activation-Key and matching Hardware-ID. **DO NOT DELETE THIS EMAIL** because as long you use the same hardware the same Activation-Key will work on the same machine.

Q: After using the shell replacement function, I am stuck in my media player or a totally black screen. How can I get a command prompt or start the ServiceTool to get back to GUI mode?

A: Press Ctrl-Alt-Del to start the Task Manager. Click on "File", then click "Run new task", enter "cmd" to start a command prompt or enter "st" or "service_tool" to start the ServiceTool.
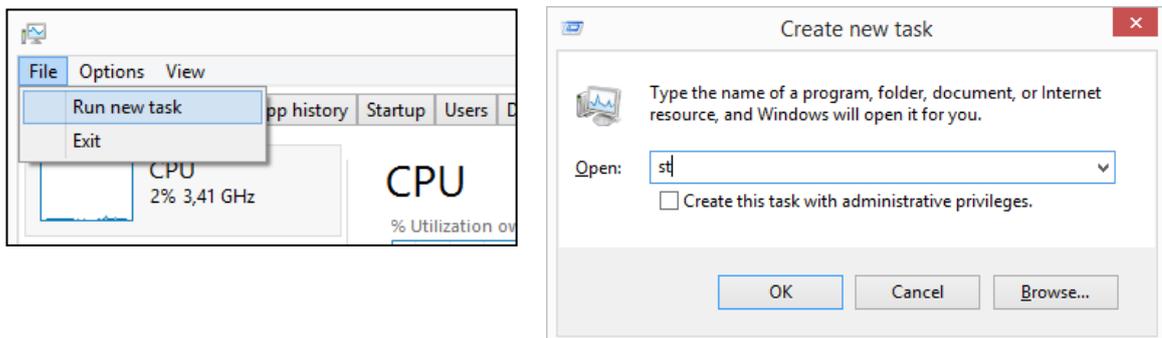
Q: After switching to core mode/minimal-server mode or after using the AudiophileOptimizer, my remote app (JRemote, Gizmo, etc) can no longer connect to JRiver Media Center, what's wrong?

A: You forgot to set a static IP-address. You may not use DHCP-addresses (automatically configured). You have to set a static IP address: https://www.highend-audiopc.com/help/static-ip (If you are in core or minimal-server mode, use show_adapter.cmd and set_ip.cmd found in C:\AO\Tools. Don't forget to edit set_ip.cmd before you run it!

Q: After switching to core mode, AO needs a new Activation-Key. What's wrong?

A: This behaviour is by design of Windows. Core mode does not offer WLAN capabilities so by switching into core mode, the WLAN functionality is removed again. The copy protection of AO also takes the (W)LAN card into consideration, so if the WLAN card was removed due to switching to core mode, a new Activation-Key is needed. You should always have at least one LAN adapter installed so this behaviour can be avoided.

Q: After a few days, my system suddenly started to shut itself down. What's wrong?

A: You are using a Trial or Evaluation version of Windows Server 2012 R2/2016/2019. Those versions need to have an active internet connection at least one time to automatically activate themselves over the internet. If they cannot activate over the internet, they will start shutting down on a regular basis. Check your control panel to see if your Windows installation is activated. Or you can use the method described here: https://support.microsoft.com/en-us/kb/2806745

Q: I installed WiFi drivers and the device shows up correctly in device manager, but my WiFi does not work.

A: Start the ServiceTool and press "B" to install Wireless-LAN Support for Windows Server 2012 R2/2016 & 2019.

Q: My Activation-Key does not work at all. What's wrong?

A: There are only five possible scenarios if your Activation-Key does not work:

1.) You try to activate AO 3.00 (or newer) with an Activation-Key for AO 2.20 (or older)
2.) You try to activate AO 2.20 (or older) with an Activation-Key for AO 3.00 (or newer)
3.) You are using the self-service portal for the trial version of AO instead of the regular portal
4.) You mistyped your Hardware-ID in the self-service portal
5.) You mistyped your Activation-Key in AO or ServiceTool

Q: Why do I get a warning message regarding UAC when I try to start Internet Explorer?

A: Use the shortcut on your desktop to start Internet Explorer.

Q: What are the minimum hardware requirements for Windows Server?

A: You need at least 512MB of RAM, an x64 compatible CPU, about 30GB disk space and a DAC or DDC.

Q: What are the minimum hardware requirements for Windows 10?

A: You need at least 2GB of RAM, an x86 or x64 compatible CPU, about 60GB disk space and a DAC or DDC.

Q: On how many machines or how many times can I use the AudiophileOptimizer?

A: The personal license of AO contains 5 Activations. Generally, only one Activation-Key is needed for one system assuming the hardware does not change too much. Among other factors, the Mainboard, network card and hard drive signature are used to calculate the Hardware-ID. You can either install AO on five different machines or use more Activation-Keys if you need to change your hardware and therefore have to enter new Activation-Keys.

Q: What exactly happens if I do a reset via ServiceTool?

A: The reset via ServiceTool primarily resets the states of all services and drivers. This is needed to do maintenance work on your setup like installing Windows Updates. Some Device Drivers also need a reset via ServiceTool before they can be installed. **Once you finished your maintenance work, don't forget to do a full run with AO again.**

Q: Is AO disabled or uninstalled when I do a reset via ServiceTool?

A: No. Over 95% of the optimizations are still in place after a reset via ServiceTool! Only drivers and services are set back to their original state. (Automatic start, etc.)

Q: Why can't I switch into Core or Minimal-Server Mode on Windows 10 or Windows Server 2016/2019?

A: Windows 10 does only offer a Graphical User Interface (GUI). Windows 10 does not offer Core or Minimal-Server mode like Windows Server 2012 R2, therefore our ServiceTool does not offer switching if Windows 10 is detected. Windows Server 2016/2019 cannot switch between modes as well.

Support

ACTIVATION/WEBSITE

If you lost your Activation-Key, have a question regarding activation process, the self-service portal, your license count, the download site, or encounter any problems related to the activation of the AudiophileOptimizer, you must send your support request via email to activation@highend-audiopc.com.

TECHNICAL PROBLEMS

If you encounter technical problems or get an error message **directly** related to the AudiophileOptimizer, you must send your support request via email to support@highend-audiopc.com.

Please understand that we do not offer free email-support for all topics aside from the AudiophileOptimizer, like general Windows handling questions, setting up and configuring TCP/IP settings, mapping network drives, installing any kind of drivers, and so on.

SUPPORT THREAD

If you have questions regarding best practices as they relate to the AudiophileOptimizer, Windows 10, Windows Server 2012 R2/2016/2019, core mode, network driver installation, or any other product that you would like to run on Server 2012 R2/2016/2019, or you just need tips and tricks, please submit a post to the official support thread found here: https://www.highend-audiopc.com/how-to/support-thread

Highend-AudioPC Shop

Please visit our Highend-AudioPC shop, especially made for computer audiophile enthusiasts. Here you can find carefully selected computer audiophile products from MUTEC, SOtM-Audio, Pachanko Studio, VOVOX, JCAT, JPLAY, Fidelizer Audio and others.

Should you want to order a product not listed in our shop, need technical assistance or have any questions, please **don't hesitate to contact us** via e-mail to shop@highend-audiopc.com. We are very confident that we will find the perfect solution for your setup.

Visit our Computer Audio Web Shop:
https://shop.highend-audiopc.com

MUTEC Smart Clock MC-3+ USB
Digital Audio Master Clock, 1G Audio Re-Clocker & USB Interface
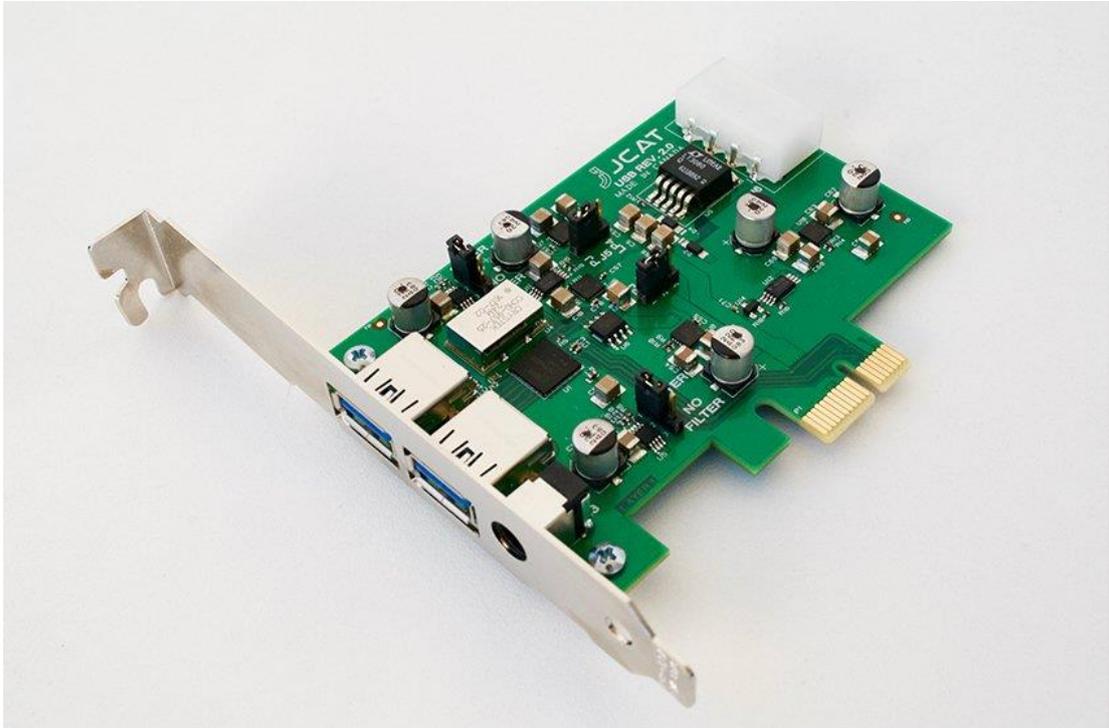
JCAT USB Card FEMTO

JCAT Reference LAN Cable

JCAT Reference USB Cable

**SOtM dx-USB HD
USB/AES Converter**

SOtM tx-USBhubEx (external)

SOtM iSO-CAT6 LAN Isolator