

## Preferred configuration for a Masterplay playback system and some hints:

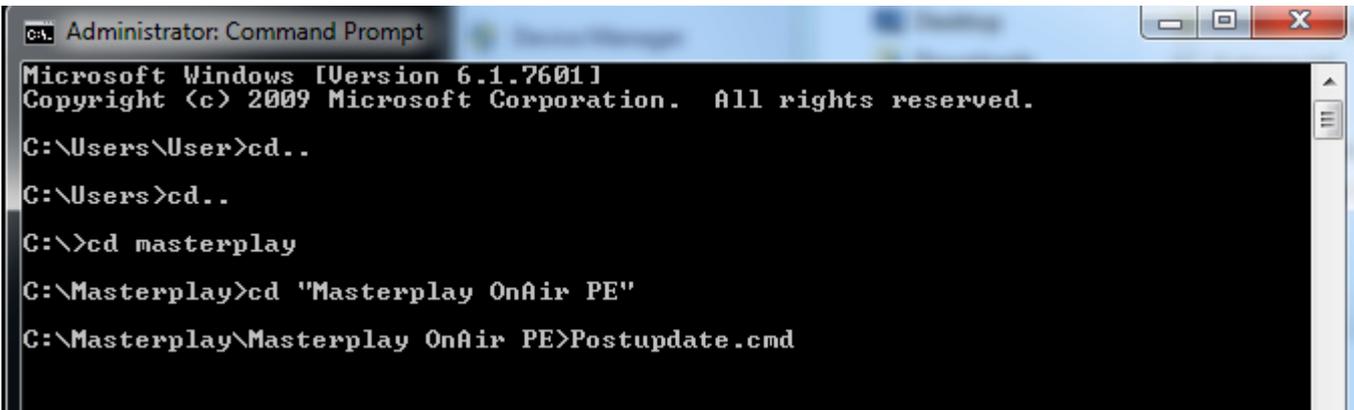
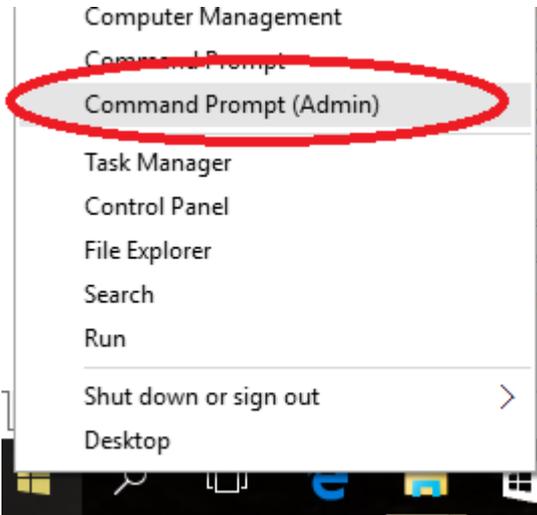
- Windows 7,8.1,10 64 Bit NEW installations for PE2 advised to be Windows 10 64bit
- At least 4GB 2400Mhz memory or faster. Systems with DDR4 memories are preferred as they have higher memory bandwidth. If memories are used higher than default processor memory speed, make sure the bios is configured correct. Might you need to enable XMP and make sure that cpu strap is 100Mhz and not 125 or even higher. (CPU strap higher than 100Mhz can affect Decklink stability) The processor usage between 2400Mhz and 3200Mhz DDR4 is around 10% lower if using 3200Mhz. For systems where encoding/streaming is needed, that 10% can make a difference. In case of DDR3 memories the roles are similar.
- Try to avoid RECC memory, as they are slower.
- In case of HD content or HD playback, the memory MUST run at least in dual channel mode. In case of using X79, X99, X266 chipset, 4 memory banks should be used so they work in quad mode. Check motherboard manual for the correct memory banks.
- One channel system SD, at least Intel i3 3 Ghz processor.
- Two channel system SD, at least Intel i5 3 Ghz processor.
- Four channel system SD, at least Intel i7 3 Ghz processor.
- Per channel is at least 1GB free memory needed.
- Make sure UAC (user account control) is disabled during installation or updates.
- Use latest Decklink drivers, at least version 11.1.0. If you remove/add Decklink cards ALWAYS uninstall the Decklink drivers, restart computer, install the Decklink drivers, restart computer again. The "Remove Field Jitter On Pause" in the Decklink Control panel needs to be disabled. If it is enabled, there is might distortion of output video.
- Also make sure you have accurate drivers for Graphic, Sound, Raid, Network.
- For your convenience check <http://www.masterplay.tv/> downloads or <ftp://masterplay.dyndns.tv> user: HowTo with no password, there you may find some of the latest drivers, which might also work on your system.
- Use of the Intel Graphic inside of the latest iX processors is possible. (ATI or Nvidia is possible too, and suggested to use IF there are several video sources you may want show on the desktop at same time)
- In case of h.264 streaming Intel and if latest Nvidia cards is used, even h.265 is possible to stream with hardware accelerated encoding.
- Use for the Decklink/AJA/Bluefish card the fastest PCI-e slot available on the motherboard. In case you use discrete graphic card, then that card does need the fastest.
- Use of riser cards together with Decklink cards are known to be problematic.
- Disable virtual memory. Doing so, mini dumps don't work and you might keep getting in the system log an accordingly error message. If you need them keep the virtual memory 400MByte.
- Disable hibernation in cmd window with PowerCFG -h off
- Configure in power options the preferred plan to "High performance"
- Configure in power options the "Turn off the display" to "never"
- Configure in power options "turn off hard disk after" to 0 (disable)
- Disable automatic Windows Updates. Install our control software and enable there "Check every 5 minutes the Windows Update service and try to kill it, if running" checkbox. (This is to avoid automatic install of updates and automatic restarts)
- USB hard drives can be used but be aware, that they mostly do ignore the power options in Windows, which means, there can be serious issues, like staggering and delays when Mplay should start a file from a hard drive which is in sleep mode. A work around would be using the prefetch option and enable prefetch local files too.
- If you use OnBoard Intel hard disk controller make sure you configure it to AHCI or RAID and that you have at least RST 15.2.16.1060 installed. In case of RAID1 and SSD use the RSTe driver if possible! Only these drivers do avoid speed degradation over time, because they support trim also in RAID1 mode (Mirror). Suggested version to use is RSTe 4.6.0.1085.

- Format data partitions of regular hard drives/raids where you have the Video files with a block size of 64Kbyte.
- Download the Setup PE2 from [www.masterplay.tv](http://www.masterplay.tv)
- Do not install Mplay into the Windows default program folder. Install it to for example C:\Masterplay\Masterplay OnAir or on d:\... So you avoid problems if you don't want have administrator rights after installation.
- After installation of Setup PE2 install the latest version of Mplay which you can download from the homepage or use the update function in Mplay. You get to the update function by keep pressing the CTRL-key while clicking on the Help menu. The menu item is called "Download and install latest build"
- If you have PE and want change to PE2 download the update for PE2 and put the downloaded file into the directory where Mplay.exe is. Start Mplay. Mplay will recognize the file and automatically upgrade. If you need to go back, do the same as with PE2 but download PE update instead.
- In the help menu there is an entry "Send License to register server" with this you can request a valid license. If you have already an Order/Invoice# please enter that number in that field. If you don't have, keep it empty and you will get a demo license which is valid for 30 days.
- That you are able to playback nearly anything you may want install the K-lite Mega codec pack. Not needed anymore on PE2 6.x and newer.
- If a file is not recognized in PlaylistEditor/Mplay you may need to add the file extension to the Video file extensions which you find in Configuration/Options/System Tab. If you can't see it, make a right click in the selection area and click on enhanced. Now add the extensions you need to the text called "Video". Make sure you use semicolon to separate between the extensions. Like ;\*.mkv;\*.mp4
- If you are playing your files and your processor usage is over 50% you might want consider to get a faster processor. Just rarely be over 50% is might not a problem, but keep in mind your system is OnAir and you like to have some headroom. Especially if you like to have several animated logos you need some headroom. To be too long in the area above 50% processor usage can result in staggering and might even other not expected strange behavior.
- Disable of Real-time preview can save a lot of processor power. You could do that in configuration/Options/Interface. (To see that option you need to enable enhanced configuration by right clicking in the selection area and select "Enhanced"), double check in configuration/Options/Board/Playback Engine the checkbox "video" is NOT checked. If it is enabled change the preview skip fields in Board/Others to 1 or higher and select down scale to lowest cpu usage to save processing power.
- CC preview enabled does use quite a lot of processing power. Especially if a file might does have several CC levels which all do get showed on the preview. To save processing power keep it on passing only.
- AMD processors are ok too, BUT keep in mind the processor usage role. (Try to keep below 50%)
- In case of using prefetch, make sure that the prefetch folder is NOT on the same physical hard drive as the operating system.
- Disable automatic input detection in the sound card driver.
- Make sure that the Decklink card is NOT used as default windows audio out.
- What is a good speed of a Raid 5? Take the numbers of disks subtract one and multiply that number with an expected speed of a single drive. For example: # of disks 6, single drive 80MByte/s:  $(6-1)*80=400$ Mbyte/s. If you reach on your server with one single stream just reading around 400MByte/s then your Raid is speed is good. You could use our FileTransfer utility or, if you make a copy in Windows explorer of a 100GB file to the same folder and you reach at least half of that speed continuously over the whole copy process, the raid is pretty good too. If you test the drive with HD Tune pro the seeking time shouldn't go below a single drive.
- If as remote tool LogMeIn is used make sure following checkboxes are UNCHECKED:
  - "Disable wallpaper..."
  - "Use display accelerator"
  - "Lock when connection has been lost"
  - "Lock when connection has been timed out"

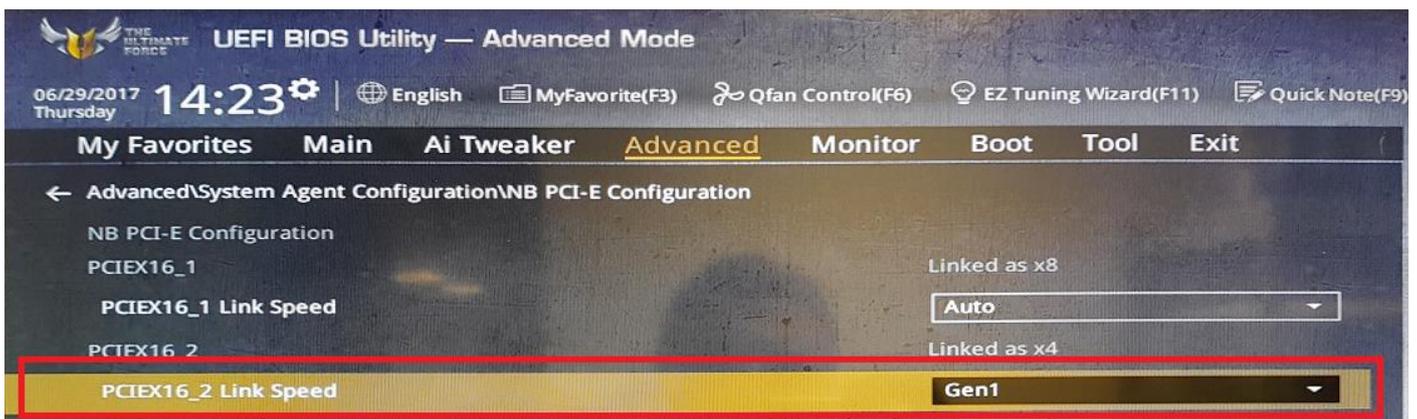
- To be able to use the audio jukebox functions, the Mixer mode needs to be enabled in the board tab.
- If as remote tool Teamviewer is used, make sure following checkboxes are UNCHECKED:  
 "Play computer sounds and music"  
 "No conference data for audio" is selected

In case the Program directory is changed (where Mplay.exe is) or if the whole program directory is copied/moved to other system or update from 32 to 64bit is installed and Mplay doesn't see the Decklink card, it is needed to call the Postupdate.cmd manually from an elevated command window:

You can find the command prompt with a right click on the start button:



In case of issues like blue screens or unstable frame rate when capture with Decklink Cards may change the PCIE link speed from automatic to whatever is the specification of the Decklink Card. The older cards are mostly Gen1. Newer cards like the 4K cards are usually Gen2.



## Suggested hardware:

WARNING: regular 6xxx processors do have a calculation fault, which can freeze the whole system! Verify that your Motherboard does have as latest as possible processor microcode update and does load it.

So far even with MU065E03A6 we do experience rare problems on some system.

With MU065E0374 we can confirm problems on all systems. Xeon processors are not affected.

On our FTP server (<ftp://Masterplay.dyndns.tv> user HowTo) there is a pdf called "How to load latest Intel Processor microcode.pdf"

ASUS Prime Z270M-Plus  
Intel Core i7-7700K  
Kingston Fury KHX424C15FBK2/8

ASUS Prime H370M-Plus  
Intel Core i7-8700K  
Kingston Fury HX426C15FBK2/8

Asus Z490-Plus TUF  
Intel Core i7-10700K  
Kingston Fury KHX424C15FBK2/8

Asus Z590M-Plus  
Intel Core i7-10700K or i7-11700K  
if 10 series CPU then Kingston or Crucial 2933 or 3000Mhz Memory  
if 11 series CPU then Kingston or Crucial 3200Mhz Memory  
Some 11 series CPU's produce up to 125 Watts heat, proper cooling is required!

Asus Z690M-Plus or Asus Z790M-Plus D4  
Intel Core i7-12700K or i7-13700K  
Kingston or Crucial 3200Mhz Memory  
proper cooling is required!

Be aware, in case of experience sudden death of applications on i7 or i9-13xxx processors, that may be because of intel default overclocking settings are too high. In that case configurate the maximum turbo frequency manually lower. On the i9-13900K 5.3Ghz is the better way to go.

For 4 Channels or more in one computer

Asus TUF-X299-Mark-1  
i9-9980XE  
Kingston KHX4000C19 16 or 32GB (4x4GB or 4x8GB) DDR4-4000Mhz Memory  
Or at least memory with 2666Mhz.

Asus Prime X370-Pro  
AMD Ryzen 1800X  
Kingston Fury KHX424C15FBK2/8

Asus Prime X399-A  
AMD Threadripper  
Kingston Fury HX426C15FBK2 (4x4GB or 4x8GB)

Asus TUF-X299-Mark-1  
I9-10940X

Kingston KHX4000C19 16 or 32GB (4x4GB or 4x8GB) DDR4-4000Mhz Memory  
Or at least memory with 2666Mhz.

#### Known limitations:

- Disconnecting or connecting of a USB Keyboard while playing, can affect the playback. (PE, PE2)
- If you are copying huge files with Windows Explorer to the hard disk where you are playing OnAir at the same time or to a slow disk in the same system, there is the risk that after a while the playback could start staggering, the staggering does disappear a while after you cancel the stop the copy process. The reason is because writing of a file does have a higher priority than reading. So after a while when the write cache is full Windows does limit the read speed and that's the point when the staggering might does start. The only solution to avoid this problem for sure: Use a NAS or a FileServer where you have the files and preferable you use there a Raid 5/6. To be sure that Network problems would not affect playback, enable prefetch on the Player. That option will copy files which are currently in the playlist to the local disk and play then from local disk. Because you can limit the write speed in that function it will not affect the playback. If you do not have the possibility for a NAS or FileServer, make sure that you have enough memory in your system so Windows can cache enough, use of a raid controller like 3ware or LSI can help as well. Side notice: If virtual memory is enabled, Windows does also use virtual memory for the write cache. Which isn't very smart, especially if might the virtual memory is on the same physical hard drive as the video files. In worst case your system does choke even more when reaching the limits. That's why virtual memory is suggested to be disabled.
- If you have audio drop outs most likely you have a hard drive speed problem. Mostly the audio will come back again automatically, if not you can go into board tab and uncheck/check the Decklink board so it does get initialized. If you use a crawl, might the length of the text in the crawl could affect audio out of the Decklink card as well. Make sure that the overlay thread is enabled in the playback engine configuration. If enable of overlay thread didn't help and the audio does come back after you disable crawl, please make the crawl shorter or use faster processor. Also make sure the system is in "High performance" mode.
- Decklink Mini cards are very sensitive in which slot on the motherboard they are in. If issues are noticed, like slow playback in passing mode may change the slot.
- After update of Decklink drivers you may power off and disconnect the computer from power complete for couple of minutes to make sure that the latest fireware on the Decklink card is active and all old configurations are lost. Especially on Decklink Quad cards remove computer from power is important.

#### Licensing:

- All licenses are non-transferable and may be used ONLY by the licensee.
- Once a permanent license has been delivered, there will be NO refund. It is the responsibility of the licensee to try the free evaluation license to make sure the software will work the way licensee expects.

Masterplay GmbH, 2021-07-17