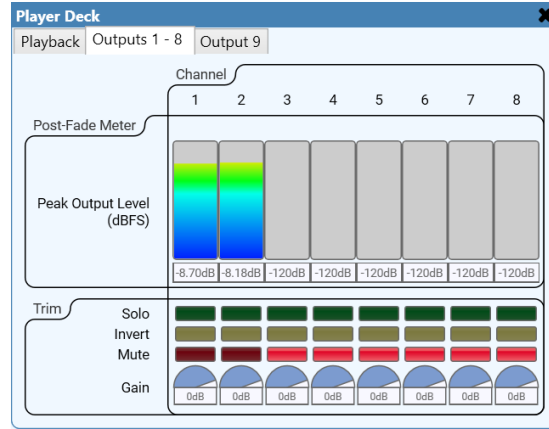
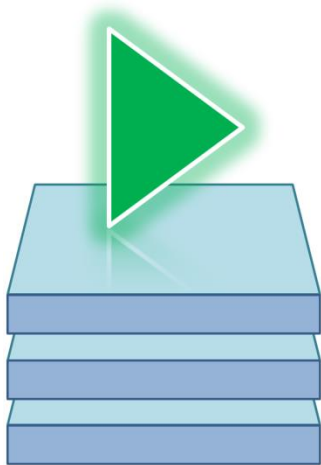


PLAYER DECK

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PLAYER DECK

is an advanced audio player plugin with extended features. Its purpose is to tackle any scenario with flexibility while maintaining ease of use and controllability by external control systems. The player features three methods for jumping through a track via scrubbing with the scrub slider and direct time entry on both the elapsed time and remaining time fields. Playback begins and ends smoothly with definable fade-in and fade-out times as well as convenient duck and silence buttons which will fade to either a set level or to silence. This is perfect for voice-over-on-demand applications or fading out walk-in music beds.

The advanced playlist controls offer a different mode of operation with every combination from random one-shot sound effects, party playlists, sequential shows, and general background music applications. Loop delay offers the extra benefit of repeating a single track with a definable number of seconds between each iteration. Perfect for playing an announcement every few minutes without scheduling.

Unique to the player deck is the ability to pre-select a new track, playlist, or folder of files while without interrupting playback. The Cue features allow the new selection to be placed at the ready for when the current track finishes playback. The deck will automatically switch to the new track or playlist without user intervention. This is perfect for live DJ control, or changing playlists throughout the day to change the mood of the venue.

Each individual channel of audio can be monitored and directly controlled from the Outputs pages. A meter allows you to see the real-time effects of the fade and duck features and overall master gain. Furthermore, each channel provides discrete gain trim, mute, polarity inversion, and solo-in-place.

Properties

Audio Tracks

an integer between 1 and 128 that determines the number of channels available to the player

This number counts against your audio player quota which may require additional licensing on your core.

Label

convenient textbox for identifying the player with a friendly name

Current Track

displays the file path and filename of the currently loaded track

Current Playlist

displays the name of the current deck of files or playlist and how many songs are left

Scrub

position fader that advances playback to a desired point in time. It automatically updates its position as the track is playing. When using during playback, audio will skip and stutter which is useful for trying to find a particular point of interest in the track.

Elapsed Time

textbox that displays the current elapsed timestamp of playback and also allows the direct entry of a desired time marker to jump to. Time should be entered using the HH:MM:SS format. Time may also be entered by a whole number of seconds which will automatically be converted. Time entries are only accepted if they do not exceed the length of the track.

Remaining Time

textbox that displays the current remaining timestamp of playback and also allows the direct entry of a desired time marker relative to the end of the track. The same formatting rules as the Elapsed Time control apply.

Status

displays the current status of the player deck, information about the currently loaded audio file, and whether any tracks are cued. The string format of this control is as follows:

state [tab] file information [carriage return]
Cued: filename (number of tracks cued)

state will be one of the following:

Stopped
Starting
Cued
Playing
Paused
Loop Delay
Loop Hold
Stopping

file information will contain the sample rate, bit depth, and multi-channel information

Play

trigger button that begins or resumes playback. Its effect varies depending on the current state:

When state is	Play will
Stopped	Load the selected track and begin playback normally. Sound will fade up to the <i>Transport Gain</i> value over the <i>Transport Attack</i> time value.
Starting	Seek to the beginning of the track, only if <i>Allow Re-Play</i> is enabled
Cued	Begin playback immediately with no fade up time. See “notes” below for further explanation
Playing	Seek to the beginning of the track, only if <i>Allow Re-Play</i> is enabled
Paused	Resume playback
Loop Delay	Resume playback immediately
Loop Hold	Resume playback immediately
Stopping	Cancel the fade out and fade back up to the previous gain level and continue playback

Playing

LED indicator that is true when the player is in process of “Starting”, “Playing”, or “Stopping”. See notes section below for further explanation.

Pause

trigger button that pauses or cues playback. Its effect varies depending on the current state:

When state is	Pause will
Stopped	Load the selected track and cue playback. There will be no fade up. See “notes” below for further explanation.
Starting	Playback is paused as expected. Any fade-in will also pause. The fade-in will resume with playback
Cued	No action
Playing	Playback is paused as expected
Paused	Resume playback. This is the same as pressing <i>Play</i> in this state.
Loop Delay	The loop delay countdown is frozen and the state changes to <i>Loop Hold</i>
Loop Hold	The loop delay countdown resumes
Stopping	No action

Paused

LED indicator that is true when the player is “Paused”, “Cued”, or is in a “Loop Delay” or a “Loop Hold” state. See the notes section below for further explanation.

Stop

trigger button that stops playback. When the player is playing, it will fade out playback following the *Transport Release* time value before stopping. Otherwise, playback is terminated immediately. Pressing *Stop* again while in the “Stopping” state, playback will terminate immediately and the player will reset.

Stopped

LED indicator that is true when the player is “Stopped” or is “Stopping”

Master Gain

displays the current playback level of the player, affecting all individual channels. This level will change following the actions of the *Transport Gain*, *Duck*, and *Fade* controls as well as rapidly increase or decrease while “Starting” or “Stopping”.

Duck

toggle button that causes the *Master Gain* level to ramp to the *Duck Gain* level over the *Duck Attack* time when set. Turning it off will ramp the *Master Gain* level back to the previous level over the *Duck Release* time value. *Duck* can be used at any time for any state. Upon “Starting”, the player will ramp to the *Duck Gain* level rather than the *Transport Gain* level.

Fade

toggle button that causes the *Master Gain* level to ramp to silence over the *Duck Attack* time value. The behavior is otherwise similar to the *Duck* function.

Mute

toggle button that causes a hard mute for all channels immediately without affecting playback. This mute is separate from the individual channel mutes. This mute will never clear by itself so it may serve as an emergency mute.

Auto-Play

toggle button that causes the player to attempt playback autonomously when the design starts (when the core boots or when the Design is committed). Normal playback rules apply.

Allow Re-Play

toggle button that causes a track to restart if the *Play* button is triggered during playback. When this option is disabled, pressing *Play* during normal playback operation will have no effect.

Loop

toggle button that causes a track to loop seamlessly. The loop feature overrides any playlist rules and will indefinitely loop the same track. Cued items, however, will be advanced to automatically at the end of the current loop cycle from when the item is cued or when the *Loop* button is engaged. Due to system limitations, the transition between tracks is not seamless. Once the cued item is moved to the current playback, it will be seamlessly looped while the *Loop* button is engaged. *Loop* may be toggled at any time and playback will follow its direction accordingly at the end of the current track.

Loop Delay

decimal number of seconds from 0 to 999 seconds inclusive to wait between loop iterations. The state will change to “Loop Delay” and the *Status* will show the countdown time between iterations. Setting the delay time to a value of less than 0.1 will engage a seamless loop. Due to system limitations, the countdown timer resolution is set to 0.1 seconds. Any non-conforming numbers will be rounded up to the nearest tenth of a second.

Shuffle

toggle button that allows for randomized playback of a playlist or a deck. See the notes section below for further details.

Repeat

toggle button that sets whether the player will continue playback after a playlist or deck has been exhausted. See the notes section below for further details.

Advance

toggle button that controls whether playback automatically advances to the next track when the current track finishes. See the notes section below for further details.

Top

trigger button that immediately jumps to the top of a playlist or a deck. Playback is interrupted when in the “Playing” state. Otherwise, the first track is cued.

Previous

trigger button that immediately jumps to the previously played track of a playlist or a deck. Similar behavior to the *Top* button.

Next

trigger button that immediately jumps to the next track in a playlist or a deck. Similar to *Previous* or *Top*.

Transport Attack

decimal number between 0 and 600 seconds that specifies the fade up time when beginning playback

Transport Gain

decibel level between -100dB and +10dB that specifies the overall playback level. This level is separate from the individual channel trim gains. Changing this during playback will fade to the new target over one second to provide a smoother transition.

Transport Release

decimal number between 0 and 600 seconds that specifies the fade down time when stopping playback. If the number is longer than the time remaining in the current track, then playback will naturally end at the end of the track. A new track will not be automatically loaded, even if one is cued.

Duck Attack

decimal number between 0 and 600 seconds that specifies the ramp down time of both the *Duck* and *Fade* buttons

Duck Gain

decibel level between -100dB and +10dB that sets the target for the *Duck* feature. This is an absolute target level and not a relative trim value. Changing this value while *Duck* is engaged will have a real time effect to aid in the setting of this level during testing or commissioning. The *Master Gain* will ramp over one second to the new target level.

Duck Release

decimal number between 0 and 600 seconds that specifies the ramp up time of both the *Duck* and *Fade* buttons

Playlist

combo box that allows selection of a playlist as configured by Administrator or Core Manager. To play individual files, set *Playlist* to “<None>”.

Root

combo box that allows selection of the top most folder of the media directory of the core.

Directory

combo box that allows selection of any sub folders of the root folder. The first choice is “<Root>” which will cause the *Filename* control to only present files that are within the specified *Root* path (hiding all files in any sub-directories).

Filename

combo box that allows selection of any file within the specified *Playlist* or combination of *Root* and *Directory*. This control will show all available audio files found in the specified directory and below (recursively). Items from subfolders will be listed with their folder names prepended. All items are list alphabetically.

If a *Playlist* is selected, then this control will list the contents of the playlist in the order as defined in Administrator or Core Manager.

If *Filename* is set to “<All>” then all the files shown in the list will be played as a “deck” (an ad-hoc playlist).

Refresh

trigger button that rescans the media drive for file changes and updates the available filename options.

Cue

trigger button that takes the current selections from the *Playlist*, *Root*, *Directory*, and *Filename* controls and prepares it for playback immediately following the current track. Only one command can be cued at a time. The last command will overwrite any previous commands. Cue can only be triggered if the file selection controls change. Triggering *Cue* while “Stopped” will enter the “Cued” state.

Take

trigger button that takes the current selections from the *Playlist*, *Root*, *Directory*, and *Filename* controls and immediately loads and commences playback. *Take* will always interrupt audio and immediately begin playback regardless of any state. Using *Take* from a “Stopped” state will bypass the fade-in feature.

Output Meter

“post-fade” decibel level meter that shows the real-time output level of the given channel of the player. The meters reflect all processing and effects as it pertains to the given channel, including *Solo*, *Mute*, and *Output Gain*.

Output Solo

toggle button that activates a solo-in-place for any enabled channels

Output Invert

toggle button that activates polarity inversion of the given channel

Output Mute

toggle button that mutes the given channel

Output Gain

decibel knob from -100dB to +10dB that controls the trim of the given channel. This gain is downstream of the *Master Gain* and is additive.

The Cue Feature

While the word is the same, “Cue” applies to two slightly different topics in regards to the Player Deck; however the two concepts are intertwined. “Cue” is used as a term to mean “to make ready” or “prepare for playback”. When the player is currently in a “Stopped” state, pressing either the *Pause* button or the *Cue* button will enter into a “Cued” state. This means that the selected file is loaded into the player and the fade up will be bypassed. The goal is to make playback begin as quickly as possible to hit the mark of the show as accurately as possible. There is a performance advantage to using this feature over the use *Play* with an *Attack Time* of 0. When the player is completely stopped, the internal player file and buffer are cleared. Issuing *Play* will first consider the current settings of the player, choose a file from the list if it is a *deck* or a *playlist*, then load the player, then begin the process of playback. Even with an *Attack Time* value of 0, the *Master Gain* is still first set to silence and then immediately set to the *Transport Gain* value after the player is started. The control engine lags at one frame when the audio player buffer is filled so the actual play command must be delayed slightly or else the beginning of the file will be clipped off. The “Cue” feature minimizes this by preloading the audio file into the buffer and setting the *Master Gain* appropriately.

Secondly, the *Cue* button is a command that identifies a different track to auto-follow the current track after it reaches the end. In a way, the next track is entering a “cued” state; however there is no performance benefit here – only a convenience benefit for the operator and audience. If any item is Cued during playback it is the second highest priority command (right behind stopping) and will override loop functionality, loop delay, and next in playlist or deck.

Changing the *Playlist*, *Root*, *Directory*, or *Filename* controls will enable the use of the *Cue* and *Take* buttons. The control that differs from the currently playing audio file will be highlighted yellow to indicate that a selection change has been made and is not yet in affect. When the file is played, cued, or taken, the highlighting will be removed to show that the controls match the current track.

Playlist Controls: Shuffle, Repeat, Advance

A collection of files, either from a directory or a playlist, is collectively referred to as a “deck”, synonymous to a “deck of cards”. The Playlist Controls are only considered when a deck is loaded or cued, and not for a single audio file. While the options that each control represents make sense by its own concept, the combination of these settings make for an advanced, complex feature set as each option can influence the behavior of the other options. The table below lists the various setting combinations, the player behavior, and a suggested use case.

Use Case	Shuffle	Repeat	Advance	Behavior
General BGM	TRUE	TRUE	TRUE	The deck is shuffled once before playback and the entire deck is played through once autonomously. When the last file is played, the process repeats with a fresh shuffle.
Randomized list, triggered	TRUE	TRUE		The deck is shuffled once before playback. The player halts and enters the “Cued” state after each track finishes playback. Once the deck is exhausted, triggering <i>Play</i> again will repeat the process with a fresh shuffle.
Party Playlist	TRUE		TRUE	The deck is shuffled once and played autonomously. Once the deck is exhausted, playback will end.
Random sound effects	TRUE			The deck is shuffled upon each trigger and one track is selected for playback. The rest of the deck is discarded. See the following note regarding shuffle selection.
Canonical album order		TRUE	TRUE	The deck plays in the order shown in the filename list autonomously, indefinitely.
Guided story narration		TRUE		The deck is loaded sequentially but each track is played when triggered. The process repeats after the deck is exhausted.
Atmospheric/ Pop-up Show			TRUE	The deck is played sequentially, autonomously. Playback halts after the deck is exhausted.
Classic CD				The deck is loaded sequentially but each track is played when triggered. The player reverts to a “Stopped” state rather than a “Cued” state when the deck is exhausted, signifying the end of the list.

Shuffled Selection

In the event that a new shuffled deck begins with the same track that is currently playing or most recently played, the player will move it to the end of the list to prevent back-to-back songs. In the event that shuffle is enabled but only track is selected at a time, the player will continue attempting to find a different track to prevent back-to-back triggered sounds. Note, however, that a track may appear on the second trigger (i.e. A->B->A but never A->A->B).

Status Indicators

The *Playing*, *Paused*, and *Stopping* LED indicators may seem obvious in their purpose, however the Player Deck uses a combination of them to indicate more advanced situations than a traditional audio player. The following matrix lists the states of the player with the indicator patterns.

Player State	Playing	Paused	Stopped
Stopped			TRUE
Starting	TRUE		
Cued		TRUE	
Playing	TRUE		
Paused		TRUE	
Loop Delay	TRUE	TRUE	
Loop Hold	TRUE	TRUE	
Stopping	TRUE		TRUE

V1.0.0 – SEPTEMBER 24, 2019

Original release

V1.1.0 – MAY 7, 2022

- Prevent the player from attempting to start if no audio file is specified, fixing an issue where the play and pause states will rapidly alternate. Status control will indicate that no file is loaded.
- Directory names are now sorted alphabetically.
- Added new "Root" directory to filter the filenames list to only show files at the root level, rather than all files in all sub-directories.
- Fixed an issue where playing a track would occasionally cause the player to immediately stop or enter the Cued state if a deck of files was selected for playback.
- Improved time display behavior when beginning playback to immediately refresh.
- Added refresh button to rescan for audio files after changing audio files loaded on the core.
- The Output tab names now correctly reference the number of tracks used by the player.