USING VANTAGE PLAYBACK SERVICE FOR AVID INTERPLAY TRANSFER ENGINE

This App Note
applies to
ALL versions
of Vantage

Synopsis

Telestream's Playback Service for Avid Interplay Transfer Engine enables Avid editors (i.e. Avid Media Composer) to easily and seamlessly use Interplay Transfer Engine to wrap Avid sequences in Telestream Intermediary Format (TIFO). This enables open file workflows which allows files to be saved to specified share destinations for ingest into transcoding workflows by Telestream products including Vantage.
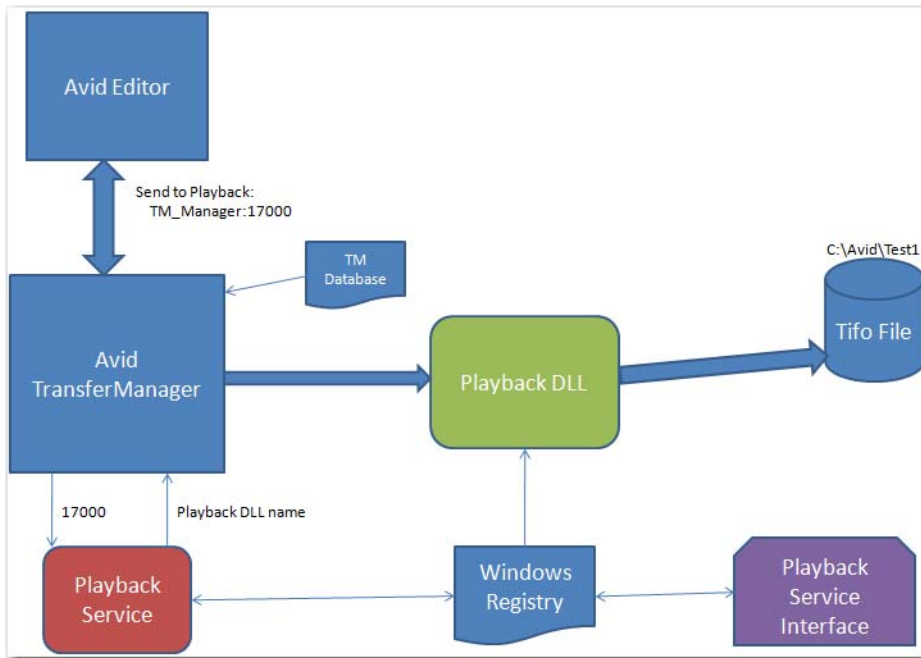
Operational Overview

In operation, an Avid operator can now seamlessly transcode media in Vantage directly from an Avid Editor via Interplay Transfer Engine. For example, the Avid user selects the playback device which exports a clip sequence from Avid Media Composer to start the clip sequence transfer. Interplay Transfer Engine uses the Telestream Playback Service to save the media into a TIFO file and store it in the destination folder monitored by Vantage for processing.

A Vantage monitor polls the share identified by the File Storage Location entry specified in the Playback Service Configuration. This is the destination where the TIFO files are delivered from Avid Interplay Transfer Engine via the Telestream Playback Service.

Workflow Development

Once the Playback Service is installed, several steps are needed to create a workflow. This process allows a video/audio sequence from an Avid editor to be sent through the Telestream Playback Service which builds a file made available for ingest into Vantage.

1. Create a new Playback Device in the Avid Interplay Transfer Engine Configuration Manager. This device will take the form of: *TMServer: Port /Name*.

2. Create a new Playback Service connection using the Telestream Playback Service Configuration utility. This will include a *Port* and *Storage Location*

3. The Port number is used to connect the TransferManager to the Storage Location. To create a connection, the port number used in the Transfer Manager and Playback Service configurations must be the same.

4. Create a Vantage Watch that monitors the Storage Location entered in the Playback Service Configuration. When a file is submitted it is ingested by the Vantage workflow. If *Submit*

Immediately is checked inside the Watch, the TIFO file will launch a job that runs while the file is created. This allows transcoding to occur while the TIFO file is growing.

MYSERVER:
16000 /Test

16000
C:\MyStorage

C:\MyStorage

| Avid TransferManager | → | Playback DLL | → | TIFO File | → | Vantage Monitor |
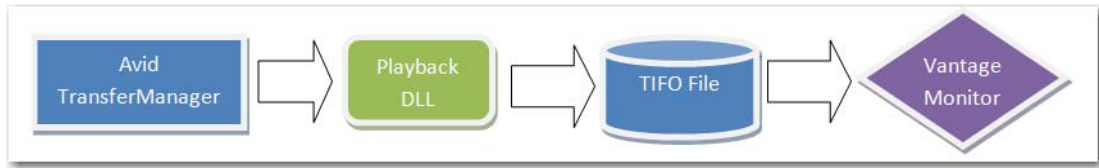
Installing Telestream Playback Service

Follow these steps to remove older versions (if required), then obtain the Telestream Playback Service installer and install the software on the Avid Interplay Transfer Engine server.

Note: *If your current version of Playback Service was not installed using an installer with a .msi extension, it must be manually removed before updating the Playback Service using a new .msi installer.* **Once you have transitioned using the new .msi installer, you never again need to manually remove the Playback Service.** *If you do not need to remove the old installer go to:*

Steps to Remove Older Version of Avid Playback Service

To manually remove an older version of the Playback Service, follow these steps:

1. There are three files on the Avid TransferManager server that need to be removed. The first two files, *TS_PlaybackService.exe* and *PlaybackService_IF.exe* are in a directory on the server. Use the search string `*PlaybackService*.*` to search and find the directory containing these two files:


Search for files
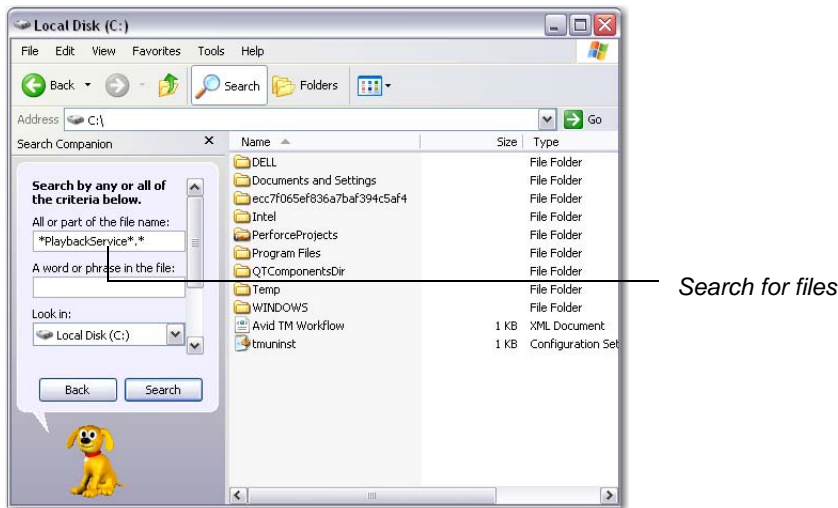
2. Open a command window and navigate to the folder where the files are located. To do this enter `cd <path to files>` and press the Enter key. *(*Example: *cd C:\ProgramFiles\ Telestream\Telestream_Avid_PlaybackService)*:
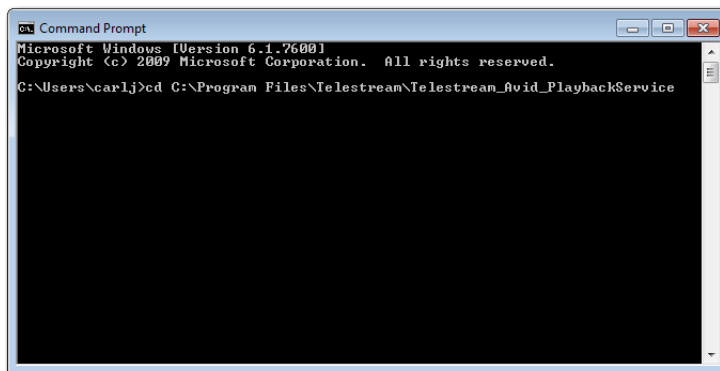
3. At the command prompt, run the command: *TS_PlaybackService.exe -Install /u.* This runs the uninstall function and you should see about thirty lines of text, followed by the words *uninstalled successfully*:
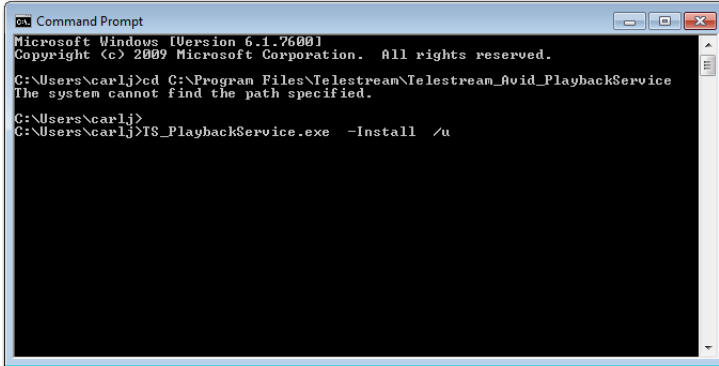
4. Delete the following files from the Avid Interplay Transfer Engine server in the directory searched and found previously:

- TS_PlaybackService.exe

- PlaybackService_IF.exe
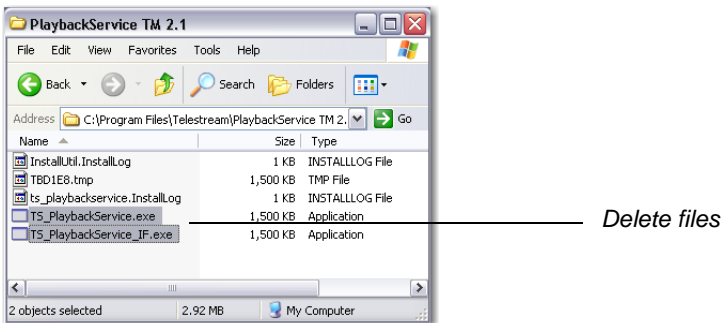
Delete files

5. Delete the file: *TS_AvidPlayback.dll* in the directory where Transfer Manager is installed (Example: *C:\Program Files\Avid\Avid Interplay Transfer Engine*):
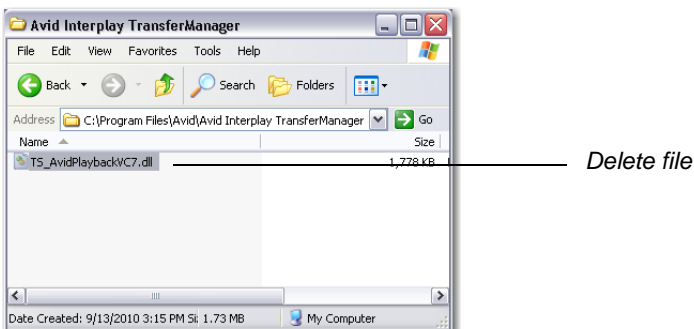
Delete file

**Note:** *If you are using Avid TM version 2.1 or earlier, delete the file:* **TS_AvidPlaybackVC7.dll** *in the directory where Transfer Manager is installed (Example:* **C:\Program Files\Avid\AvidInterplay TransferManager**)

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6. To make sure you have removed all the files, run a search on the C drive using the search string: *Playback*.* If you find any other occurrences of these three files, delete them:

Do a final search
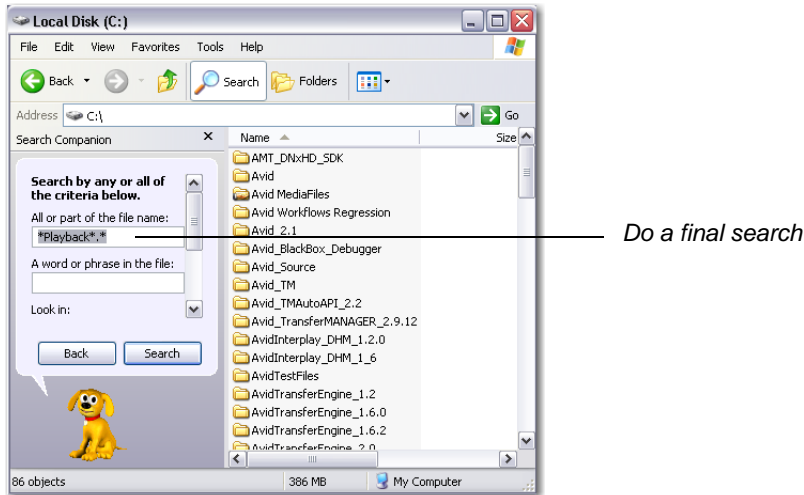
Obtain the Software

To obtain the Telestream Playback Service software installer, go to Telestream's Web site and download the file from the Vantage Downloads Web page. Select the appropriate version that matches the version of TransferManager you are running. Or, you can obtain the file from your Telestream representative.

After obtaining the file, copy it to the Interplay Transfer Engine server desktop (or to a shared location that the Interplay Transfer Engine server can access).

Note: *You must install Microsoft .NET Framework Version 4.0 before installing the Playback Service software.*
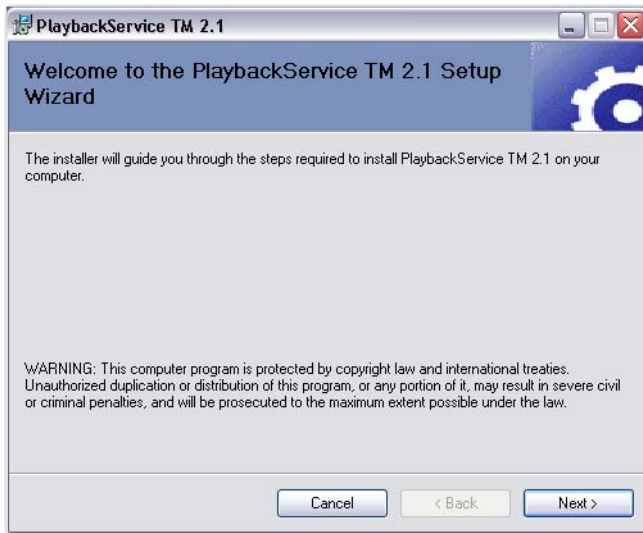
Install the Playback Service Software

To install the Telestream Playback Service, follow these steps:

1. To start the Playback Service installer, double-click the icon on the desktop (or navigate to the location where the installer was saved and run the installer program):

2. Click Next:

3. Select *I Agree* and click Next:

4. Click Next to accept the default location:
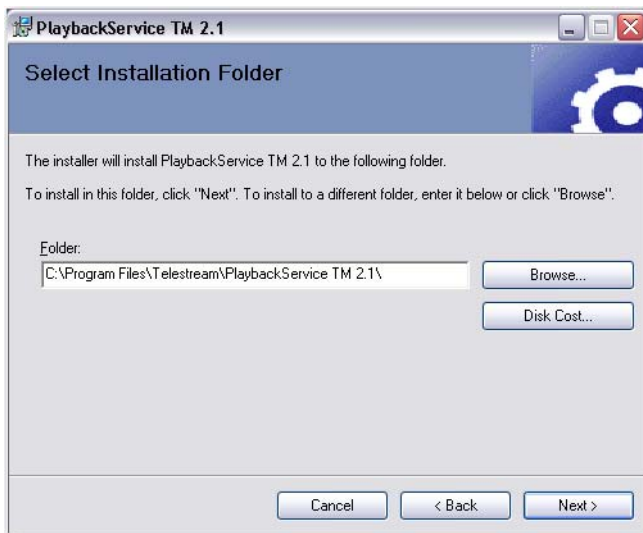
5. Click Next to start installation:
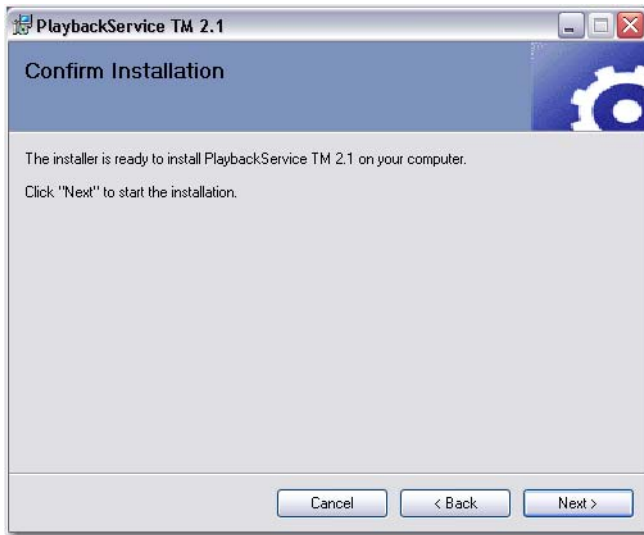
6. Wait for progress to finish:
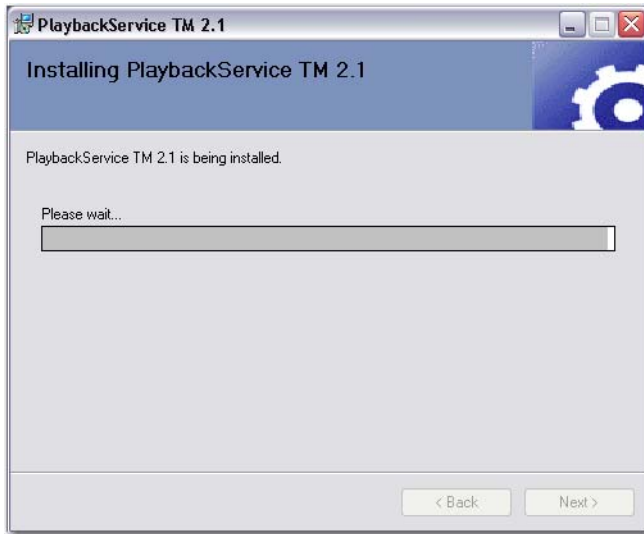
7. Set up any desired configuration and click Restart TS_PlaybackService:
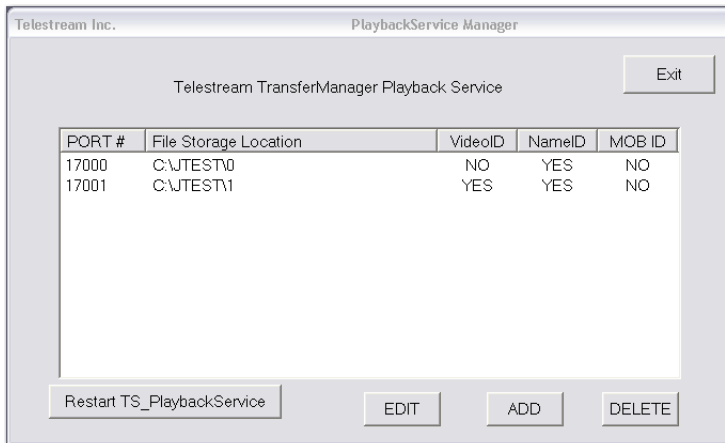
8. Click OK:
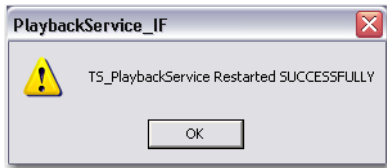
9. Click Exit when finished:
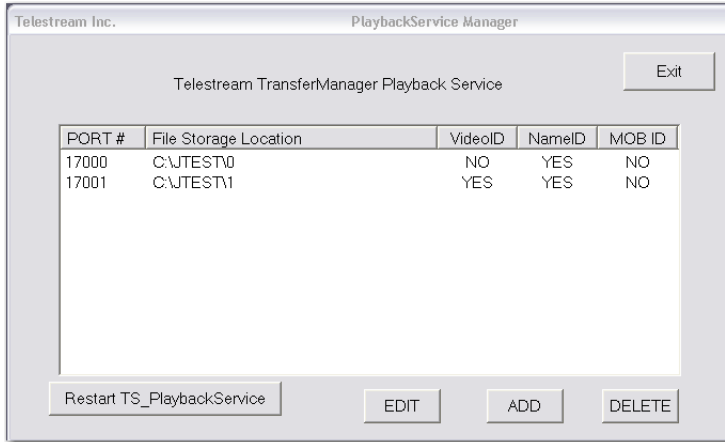
10. Click Close to finish installation:

Stopping PlutoPlayServer & AvSony Services

Two services must be stopped before you can use the Telestream Playback Service:

1. To open the Services window, open the Run window, enter *services.msc*, and click OK:
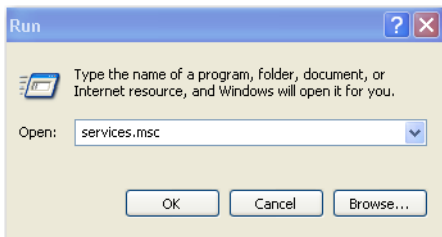
2. In the Services window, find AvSonyPlayback. If running, right-click select Stop. Right-click on it again and select Properties:
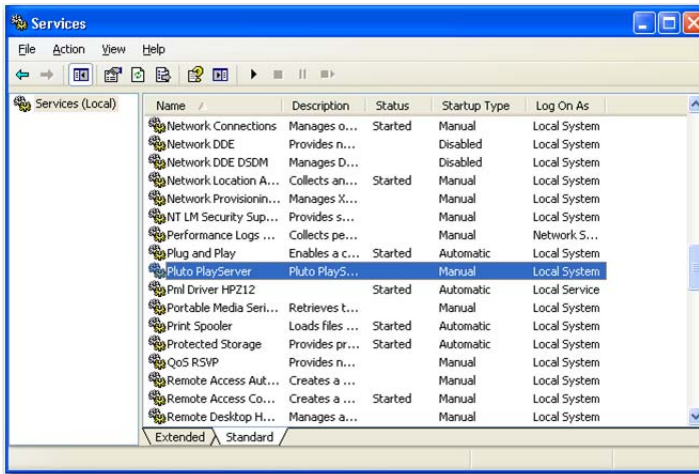
3. Change the Startup type to Manual:

Select Manual
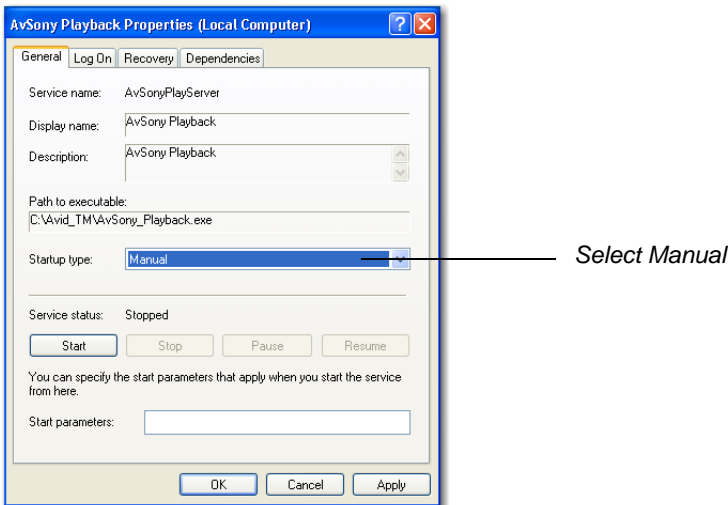
4. Find the Pluto PlayServer. If it is running, stop it, open properties, and change the startup type to Manual:
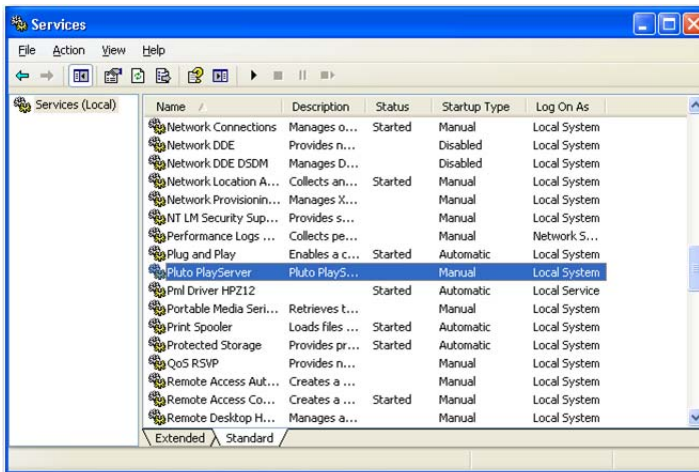
5. Close the Services window.

Configuring Telestream Playback Service

For each destination folder you intend to use in Avid-Telestream workflows, you must update the Telestream Playback Server to provide a playback device for each destination folder. (You typically have one destination for each factory.)

Note: *If you haven't started the Telestream Playback Service on your Avid Interplay Transfer Engine server, go to Restarting the Telestream Playback Service on page 12 to start it now.*

The Playback Service Configuration Utility saves these entries for use by the Playback service at runtime, under control of Interplay Transfer Engine.

Note: *Each time you modify the destination entries, you must restart the Telestream Playback Service (Page 12) in order to publish the current list.*

Starting the Configuration Utility

To start the configuration utility, double-click the Playback Service Configuration icon on the desktop, or navigate to the installation folder (*C:\Program Files\Telestream\PlaybackService*) and double-click *PlaybackService_Config.exe*:
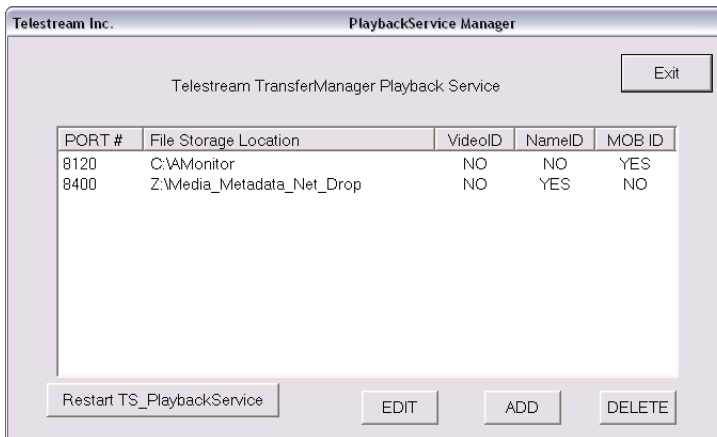

Adding an Entry

When you click ADD, the Playback Service Configuration Utility displays this dialog:
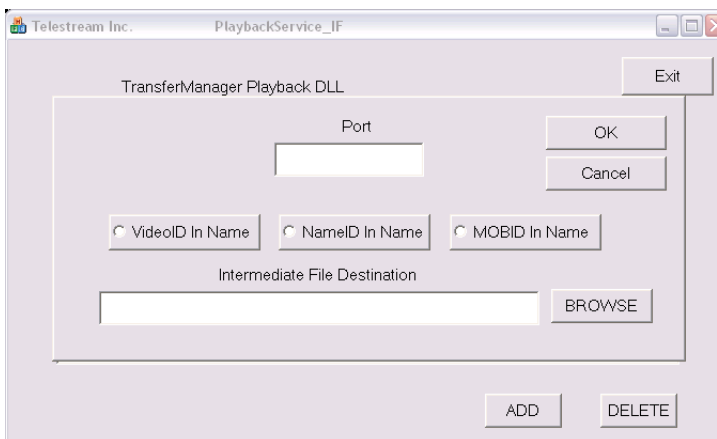
Update the following fields and controls:

Port. Enter the port number to be used for this file destination. Suggested ports: 8001-65535.

Note: *While you're unlikely to select a port already in use and create a port conflict, you can open a command window (select Start > Run, enter* `cmd` *and press OK) and run* `netstat -a` *to obtain a list of ports currently in use on this computer.*

Select one or more of the Name choices (at least one must be selected) to use these values when composing the TIFO file name for all files sent to this destination:

VideoID in Name. Unique material identifier specified in TapeID or VideoID attributes in the Interplay environment.

NameID in Name. The display name of the associated sequence in the Interplay environment.

MOBID in Name. The internal system identifier used by Interplay to track the video Sequence.

File Destination. Click Browse to navigate and select or manually enter a fully-qualified path to the server and folder where intermediate files are to be stored and retrieved. The path may be a local path or a network server path. It should be a share, so that other systems (Vantage, for example) have access to the media.

Restarting the Telestream Playback Service

Restart Telestream Playback Service by clicking Restart TS_Playback Service. You must restart the Telestream Playback Service each time you make changes to your *Destinatin:Port/Name* entries to update the list for use by other systems.

Note: *Anytime you modify the file destination entries in the Telestream Playback Service Configuration Utility (Starting the Configuration Utility on page 11), you must stop and restart the Playback service to re-publish the changed folder entries. The configuration utility displays a reminder window when you make changes and exit.*

Stopping the Configuration Utility

Click Exit to quit the Playback Service Configuration Utility.

Configuring Interplay Transfer Engine

You must update the settings and re-start the Interplay Transfer Engine to support the Telestream Playback Service before you can start using it.

Additionally, for each destination folder you intend to use in Avid-Telestream workflows, you must update the interplay Transfer Engine Configuration to provide a playback device for each destination fo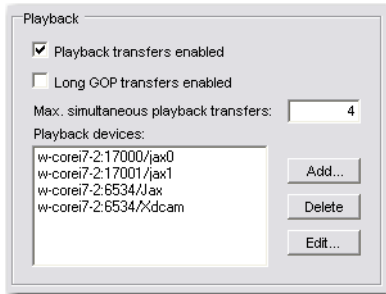lder. (You typically have one destination for each factory.) If you eliminate a destination folder, you should also delete the associated playback device.

Starting the Configuration Manager

Double-click the *Avid Interplay Transfer Engine Configuration Manager* shortcut on your desktop to start it:

Configuring Interplay Transfer Engine

To update Interplay Transfer Engine settings to support the Telestream Playback Service, update these settings:

Playback Transfers Enabled. Under Playback, check Playback transfers enabled.

Max. Simultaneous Playback Transfers. Also under Playback, enter 4 (minimum value) in Max. simultaneous transfers.

Max. Simultaneous Transfers. Under Total Transfers, enter 4 (minimum value) in Max. simultaneous transfers.

Adding Playback Devices. Click Add and create a new playback device, including the Avid Interplay Transfer Engine server's hostname and the unique port number you assigned to the File Destination entry in the Telestream Playback Service Configuration Utility. You must add a descriptive name at the end of the *sever:port* identifier. This name should describe the purpose of the Playback Device or the workflow in which it is utilized. It cannot contain spaces. Example: *AnyServer:17000/Playback_Service_1*

Note: *To improve the ability of your users to identify a specific playback device (and associated factory), you must add a unique identifier (no spaces allowed) after the hostname and port number, starting with a '/'. For example: Avid_ITE_server21:17001.*

Removing Playback Devices. Select the playback device you want to remove from the list in the Playback Devices list, and click Delete to permanently remove the playback device.

Save and close the configuration program.

Re-start Interplay Transfer Engine

Each time you make changes to your playback device list, you need to re-start the Interplay Transfer Engine to obtain and publish the new list of Avid playback devices and ports.

Updating Black Files for TransferManager

Note: *This section applies only if you are using Avid TM version 2.1 or earlier.*

The Playback Service handles insertion of Black Frames and Fill Frames into the video sequence when using the Avid Editors. The Black Frames are the appropriate size and format for the workflow that is edited.

A zip file named BlackFiles.zip is included in the update package. These files allow the Avid Fill Frames to work correctly. Move the zip file to the directory containing the Avid TransferManager (usually in *C:\Program Files\Telestream\PlaybackService TM 2.1*). Unzip BlackFiles.zip to replace the existing files.

Avid Media Composer and Playback Service

This section explains how to set up Avid Media Composer and how to use the Telestream Playback Service with it.

Setting Up Avid Media Composer

To setup the Avid Media Composer, follow these steps:

1. Open the Avid Media Composer and select the Settings tab in the Bin window. Double-click on Transfer:

Select Settings tab

Double-click Transfer
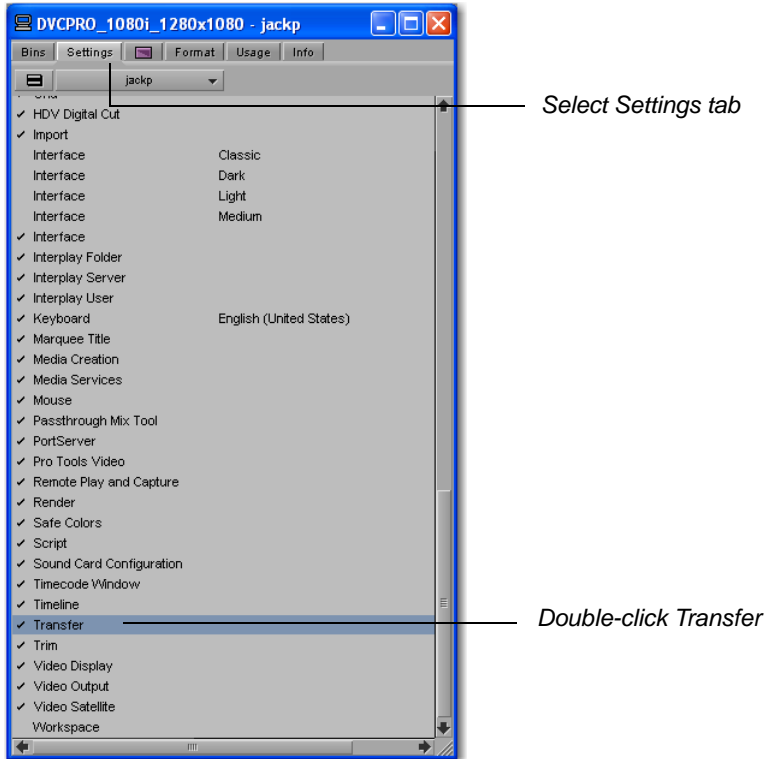
2. When the new window displays, click the Settings tab and select Direct channel output:

Select Settings tab

Select Direct channel output

---
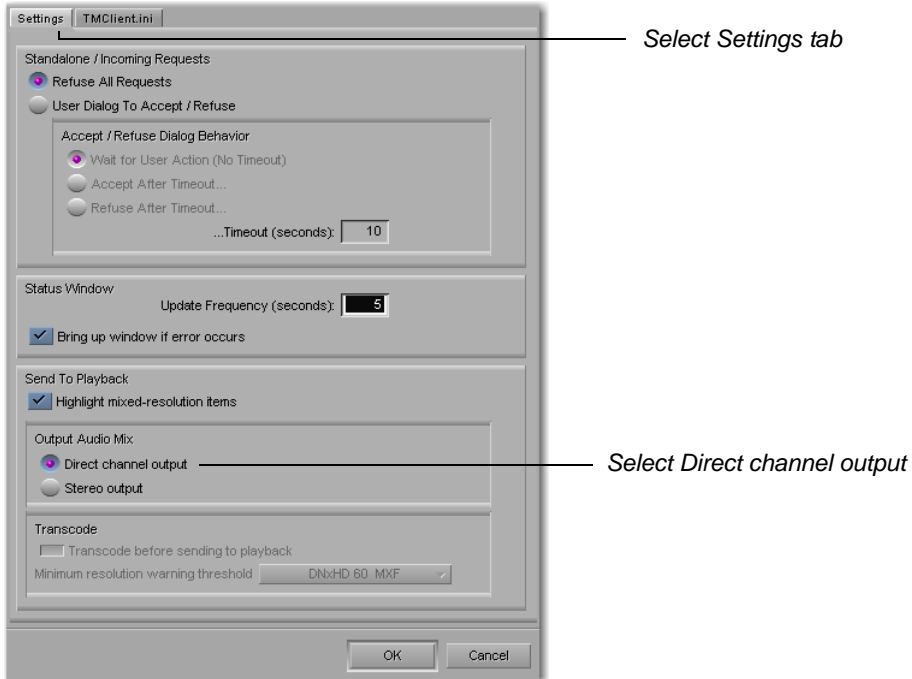
3. Click the TMClient tab and ensure that the Server name is correct and does not have quotes. Ensure also that Workgroup is displaying Workgroup or some other workgroup name appropriate for the network environment. (See your system administrator for the correct name). Click OK when finished.

Select TMClient tab

Ensure valid Server name

Ensure Workgroup
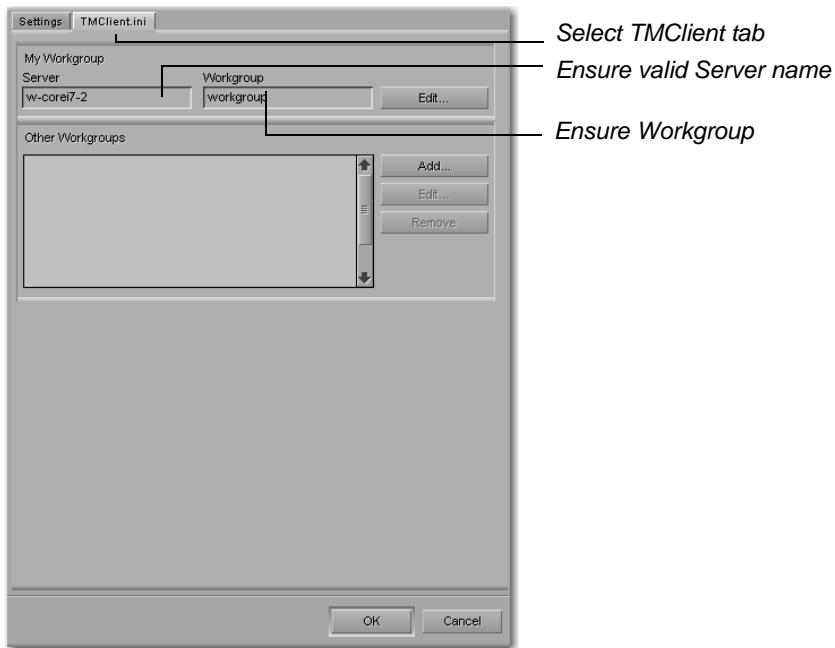
Using Telestream Playback Service

With Telestream Playback Service started, and destination entries and playback device pairs created, users of Avid Media Composer (and other Avid editors and Interplay Transfer Engine clients) can select and send sequences directly to a Vantage-monitored folder.

1. Create a sequence.

2. Add a clip to the sequence that you want transcoded by Vantage. Provide the sequence a Tape ID (no spaces, but numbers are allowed. The actual data that is placed in this ID is irrelevant and isn't used, but Interplay Transfer Engine won't transfer the sequence without it.

3. With Avid Media Composer connected to Interplay Transfer Engine, select the sequence.

Note: *The sequence must be selected by clicking the icon, not the file name.*

4. Now, select Transfer > Send To Playback > Playback Device, where the playback device is the *destination:port/Name* and optional workflow or factory identifier (/DNxHD in the figure below) that you want the media delivered to as a TIFO file. The list of playback devices is published from Interplay Transfer Engine and configured using the Avid Interplay Transfer Engine configuration application:
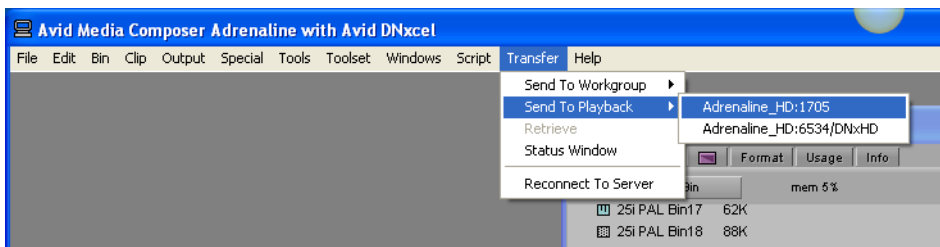
Interplay Transfer Engine connects with the Telestream Playback Service to stream the media, which is ingested, wrapped as a TIFO file, and saved in the file destination specified by the playback device you selected.

Note: *If there are un-rendered effects in the time line, the NLE will render the sequence automatically, before the transfer starts. A flattened file isn't required – in nearly all cases no file is created. The Transfer Engine assembles the video and audio frames on the fly. When using a standalone NLE workstation, Transfer Engine software can be installed on the workstation (as an option) so the user can perform Send To Playback operations.*

When the sequence has been transferred, the intermediate TIFO file in the target folder can be ingested by the Avid Playback Service monitor in your factory for processing.

Valid Formats

The formats that are currently processed by the Telestream Playback Service include:

- IMX 30, NTSC and PAL

- IMX 40, NTSC and PAL

- IMX 50, NTSC and PAL

- DV25, NTSC and PAL

- DV50, NTSC and PAL

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 60 MXF	8	720p	1280x720	23.976
DNxHD 90 MXF	8	720p	1280x720	23.976
DNxHD 90 X MXF	10*	720p	1280x720	23.976
DVCPRO HD MXF	8	720p	1280x720	23.976
DVCPRO HD MXF	8	720p	960x720	23.976

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 60 MXF	8	720p	1280x720	25
DNxHD 90 MXF	8	720p	1280x720	25
DNxHD 90 X MXF	10*	720p	1280x720	25
DVCPRO HD MXF	8	720p	1280x720	25
DVCPRO HD MXF	8	720p	960x720	25

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 75 MXF	8	720p	1280x720	29.97
DNxHD 110 MXF	8	720p	1280x720	29.97
DNxHD 110 X MXF	10*	720p	1280x720	29.97
DVCPRO HD MXF	8	720p	1280x720	29.97

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 120 MXF	8	720p	1280x720	50
DNxHD 185MXF	8	720p	1280x720	50
DNxHD 185 X MXF	10*	720p	1280x720	50
DVCPRO HD MXF	8	720p	1280x720	50
DVCPRO HD MXF	8	720p	960x720	50

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 145 MXF	8	720p	1280x720	59.94
DNxHD 220 MXF	8	720p	1280x720	59.94
DNxHD 220 X MXF	10*	720p	1280x720	59.94
DVCPRO HD MXF	8	720p	1280x720	59.94
DVCPRO HD MXF	8	720p	960x720	59.94

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 120 MXF	8	1080i	1920x1080	50
DNxHD 185MXF	8	1080i	1920x1080	50
DNxHD 185 X MXF	10*	1080i	1920x1080	50
DVCPRO HD MXF	8	1080i	1920x1080	50
DVCPRO HD MXF	8	1080i	1440x1080	50

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 145 MXF	8	1080i	1920x1080	59.94
DNxHD 220 MXF	8	1080i	1920x1080	59.94
DNxHD 220 X MXF	10*	1080i	1920x1080	59.94
DVCPRO HD MXF	8	1080i	1920x1080	59.94
DVCPRO HD MXF	8	1080i	1280x1080	59.94

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 36 MXF	8	1080p	1920x1080	23.976
DNxHD 115 MXF	8	1080p	1920x1080	23.976
DNxHD 175 MXF	8	1080p	1920x1080	23.976
DNxHD 175 X MXF	10*	1080p	1920x1080	23.976

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 36 MXF	8	1080p	1920x1080	24
DNxHD 115 MXF	8	1080p	1920x1080	24
DNxHD 175 MXF	8	1080p	1920x1080	24
DNxHD 175 X MXF	10*	1080p	1920x1080	24

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 36 MXF	8	1080p	1920x1080	25
DNxHD 115 MXF	8	1080p	1920x1080	25
DNxHD 185 MXF	8	1080p	1920x1080	25
DNxHD 185 X MXF	10*	1080p	1920x1080	25

Format	Bits	Resolution	Frame Size	Rate (fps)
DNxHD 45 MXF	8	1080p	1920x1080	29.97
DNxHD 145 MXF	8	1080p	1920x1080	29.97
DNxHD 220 MXF	8	1080p	1920x1080	29.97
DNxHD 220 X MXF	10*	1080p	1920x1080	29.97

* 10 bits are truncated to 8 bits

- AVC-Intra (for Avid versions 2.2.1 and later)

Project	Edit Rate	Resolution Name	MB/Sec	Raster Size
1080i	59.94	AVC-Intra 50	50MBit	1440x1080
		AVC-Intra 100	100MBit	1920x1080
1080i	50	AVC-Intra 50	50MBit	1440x1080
		AVC-Intra 100	100MBit	1920x1080
1080p	23.97	AVC-Intra 50	50MBit	1440x1080
		AVC-Intra 100	100MBit	1920x1080
1080p	23.976	AVC-Intra 50	50MBit	1440x1080
		AVC-Intra 100	100MBit	1920x1080
1080p	25	AVC-Intra 50	50MBit	1440x1080
		AVC-Intra 100	100MBit	1920x1080
720p	59.94	AVC-Intra 50	50MBit	960x720
		AVC-Intra 100	100MBit	1280x720
720p	50	AVC-Intra 50	50MBit	960x720
		AVC-Intra 100	100MBit	1280x720

Send to Playback/QuickTime Export Options

In the context of Avid Transfer Manager Engine, a sequence is a collection of references to master clips. So, for example, a sequence can contain a single clip.

In Media Composer and Newscutter, you can create a blank sequence and then edit a single clip into the sequence. Now, you can use the Send To Playback command to transfer the clip out to Vantage for transcoding. (Be sure that the VideoID (TapeID) is set correctly before conducting the Send to Playback operation.) This eliminates the need to perform a QuickTime export and is simpler, in that you don't need to check export settings, etc.

The process is slightly different in Avid Assist, the viewing and logging application. In Avid Assist, you can directly select a single clip and then use the Send to Playback command to transfer the clip. (In the background, the selected clip is wrapped into a sequence before the transfer occurs.)

You can choose to implement either Send to Playback transfers or QuickTime exports, depending on your workflow requirements. Workflows with large numbers of transcodes targeting different factories (drop locations), (typically large-scale broadcaster) would be good candidates for Send To Playback transfers, where you are already sending media to video servers, archives, for example, or you require process automation. Conversely, smaller broadcasters/content producers with fewer targets (drop locations) with manual workflows may benefit from QuickTime exports.

Send to Playback transfers preserve the composition timecode and support up to 8 audio channels. QuickTime exports do not preserve composition timecode, and support 1 or 2 audio channels.

Understanding your workflow requirements an choosing the right process for the job at hand is an important aspect in assessing which approach is best for your facility.

Telestream Intermediary Format (TIFO)

Telestream Intermediary Format (TIFO) is an intermediate media wrapper format designed by Telestream as a uniform, interchangeable file format to ensure interoperability among Telestream's media processing solutions, including Vantage, FlipFactory, Episode, and Pipeline. TIFO provides a lightweight, low-overhead wrapper that is essence-agnostic, with metadata, timecode, and closed caption support. TIFO improves the ability to move media files between Telestream products with all media essence elements & metadata intact, preserving the widest range of transcoding options.

Workflow Considerations

TIFO format should be used when you are encoding your files with Vantage, FlipFactory or Episode. TIFO files are unique, in that they can be transcoded as they are being captured, allowing you to create multiple different output files in real-time. TIFO files can also contain metadata such as closed captions and time code, which can be processed by Vantage, FlipFactory or Episode.

Usage Considerations

TIFO files are a Telestream proprietary format and aren't playable or readable by non-Telestream applications. You should only use TIFO format if your workflow requires transcoding by Telestream workflow automation applications. The maximum length of a TIFO file is 12 hours.

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