



# FlipFactory®

## USING FLIPFACTORY PLAYBACK SERVICE FOR AVID INTERPLAY TRANSFER ENGINE

Synopsis ..... 2

Installing Telestream Playback Service ..... 4

Configuring Interplay Transfer Engine..... 15

Creating Avid–FlipFactory Workflows..... 18

Avid Media Composer and Playback Service..... 20

Testing Playback Service Through FlipFactory ..... 27

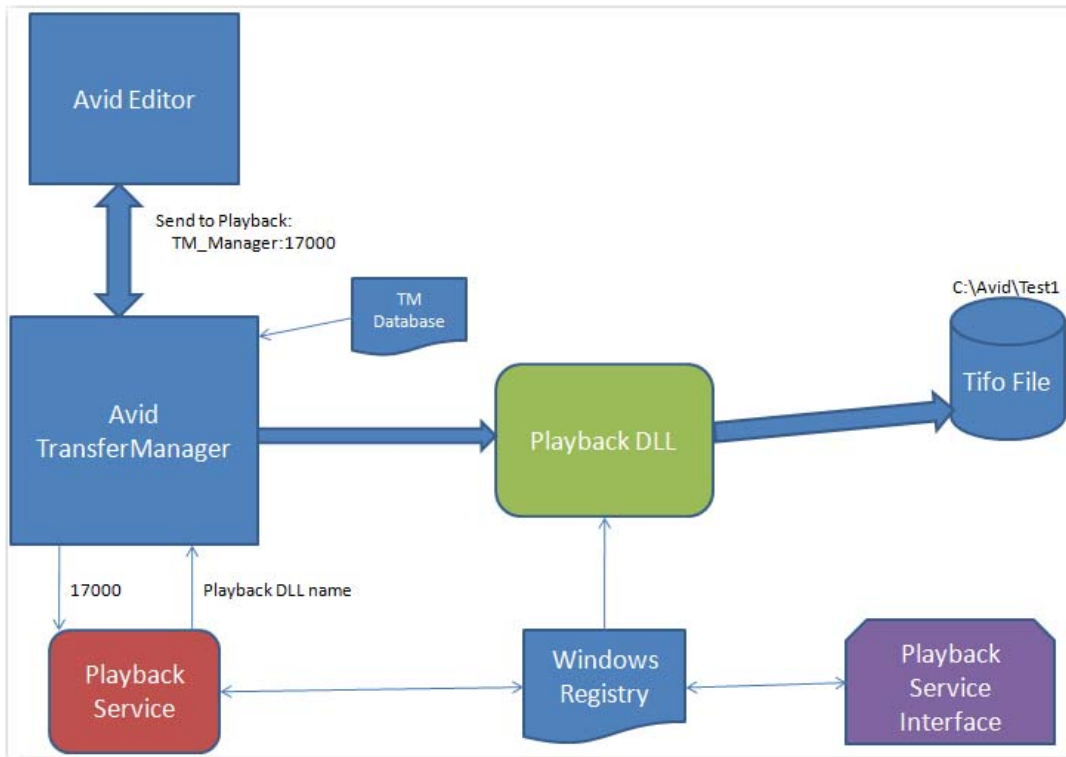
Send to Playback/QuickTime Export Options ..... 28

Telestream Intermediary Format (TIFO) ..... 28

Copyright and Trademark Notice..... 29

# 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 FlipFactory.



## Operational Overview

In operation, an Avid operator can now seamlessly transcode media in FlipFactory 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 FlipFactory for processing.

A FlipFactory monitor polls the share identified by the *destination:port/Name* entry specified in the Playback Configuration Utility. This is the destination where the TIFO files are delivered from Avid Interplay Transfer Engine via the Telestream Playback Service. An Avid Interplay Transfer Engine Notify can also be added to return the transcoded media back to the Interplay Transfer Engine for ingest into Avid clients with MOBIDs attached for identification via XML. This provides a seamless round-trip Avid-FlipFactory-Avid transcoding workflow.

## 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 FlipFactory.

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. Each connection uses the same port number.
4. Create a FlipFactory Monitor that watches the Storage Location entered in the Playback Service Configuration. When a file is submitted it is ingested by the FlipFactory factory.

*MYSERVER:*  
*16000 /Test*

*16000*  
*C:\MyStorage*

*C:\MyStorage*



# Installing Telestream Playback Service

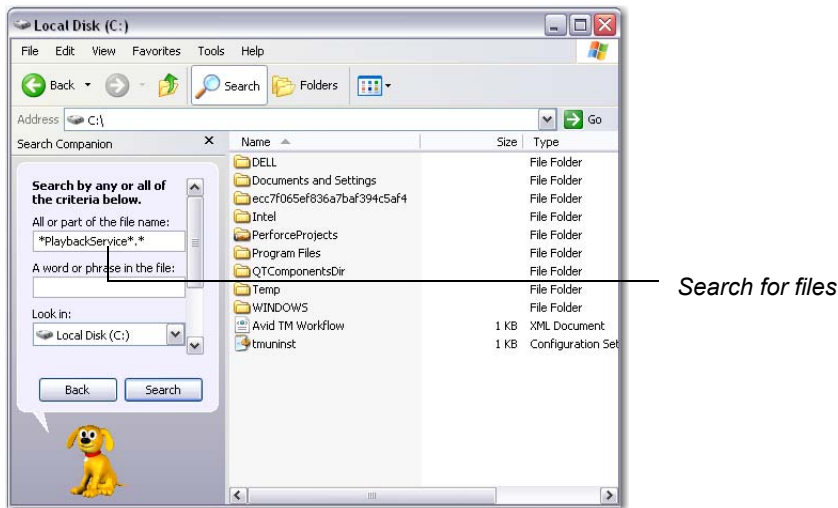
Follow these steps to remove older versions (if required), then obtain the Telestream Playback Service installer and install the software on the Avid Interplay Transfer Engine server.

**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: [Install the Playback Service Software on page 6](#).*

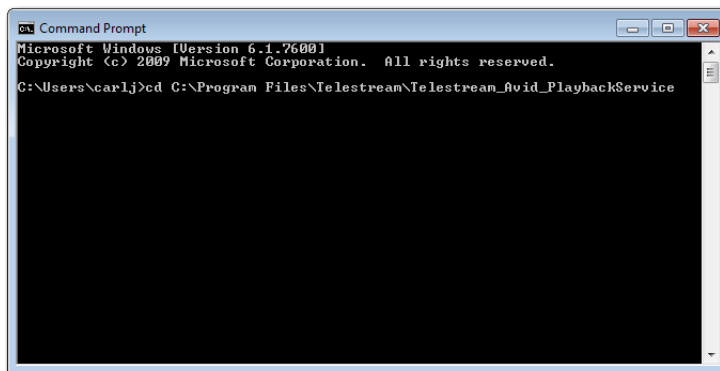
## Steps to Remove Older Version of Avid Playback Service

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

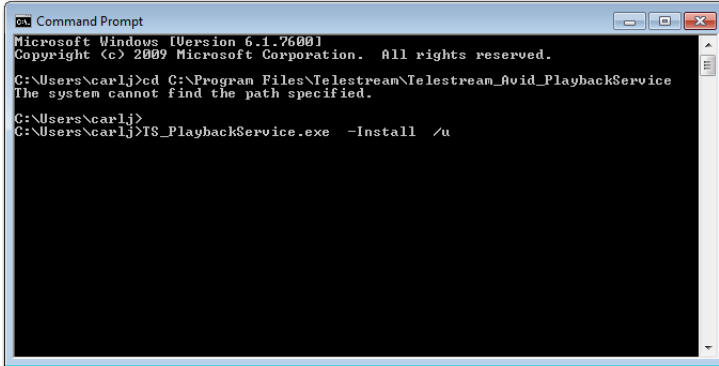
1. There are three files on the Avid TransferManager server that need to be removed. The first two files, *TS\_PlaybackService.exe* and *PlaybackService\_IF.exe* are in a directory on the server. Use the search string *\*PlaybackService\*. \** to search and find the directory containing these two files:



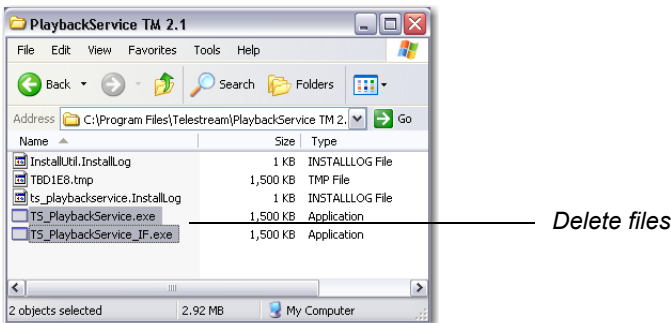
2. Open a command window and navigate to the folder where the files are located. To do this enter `cd <path to files>` and press the Enter key. (Example: `cd C:\ProgramFiles\Telestream\Telestream_Avid_PlaybackService`):



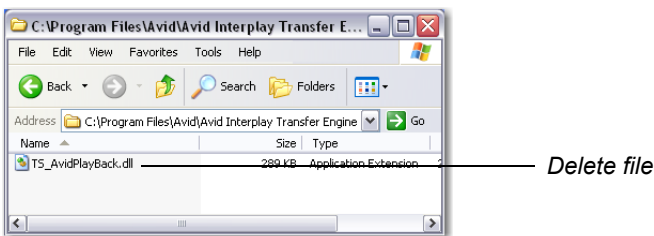
3. At the command prompt, run the command: `TS_PlaybackService.exe -Install /u`. This runs the uninstall function and you should see about thirty lines of text, followed by the words *uninstalled successfully*:



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`

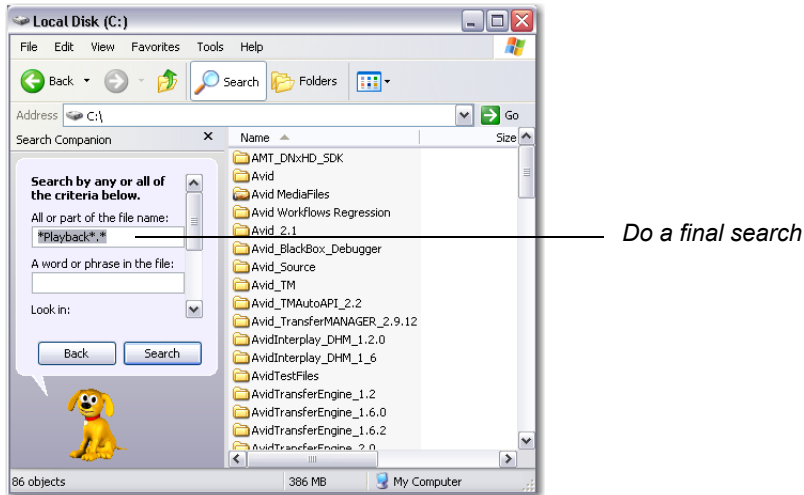


5. Delete the file: `TS_AvidPlayback.dll` in the directory where Transfer Manager is installed (Example: `C:\Program Files\Avid\Avid Interplay Transfer Engine`):



**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`)

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:



## Obtain the Software

To obtain the Telestream Playback Service software installer, go to Telestream's Web site and download the file from the FlipFactory 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).

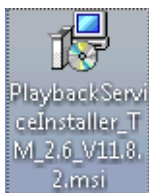
**Note:** *You must install Microsoft .NET Framework Version 4.0 before installing the Playback Service software.*

## Install the Playback Service Software

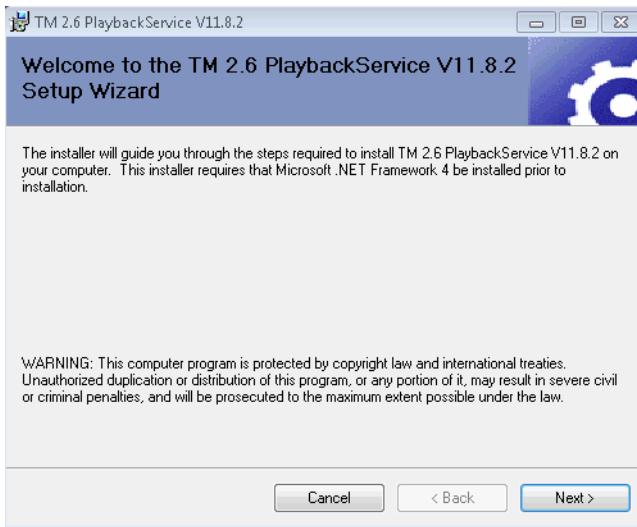
To install the Telestream Playback Service, follow these steps:

1. Unzip the downloaded installer file and run the TE Component Prerequisites installer to install all required DLL libraries.

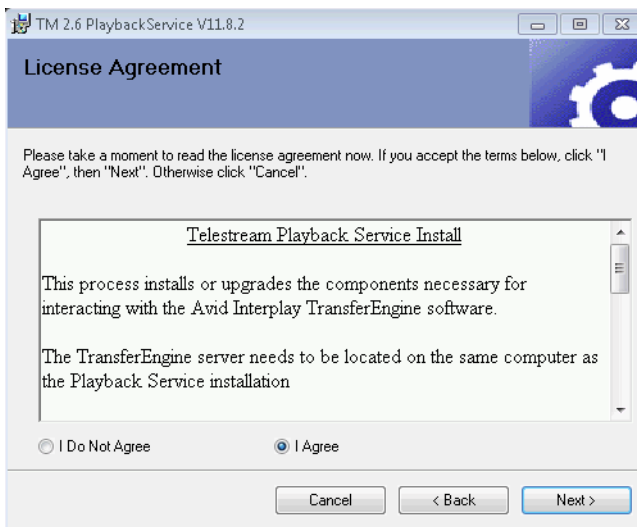
Next double-click *PlaybackServiceInstaller\_TM\_2.6\_V11.8.2.msi* file:



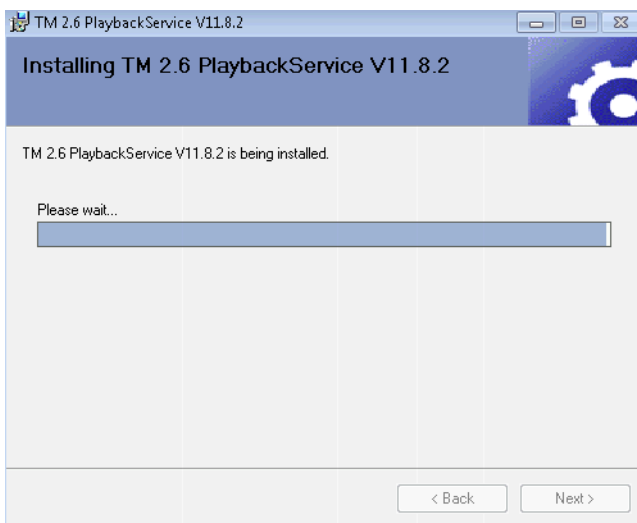
2. Click Next:



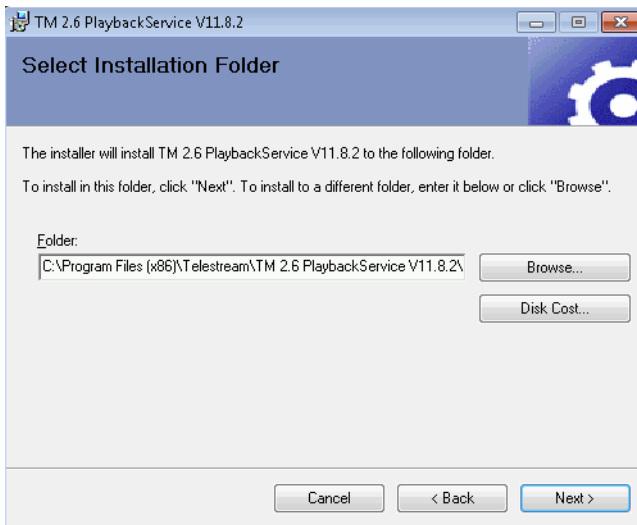
3. Select / Agree and click Next:



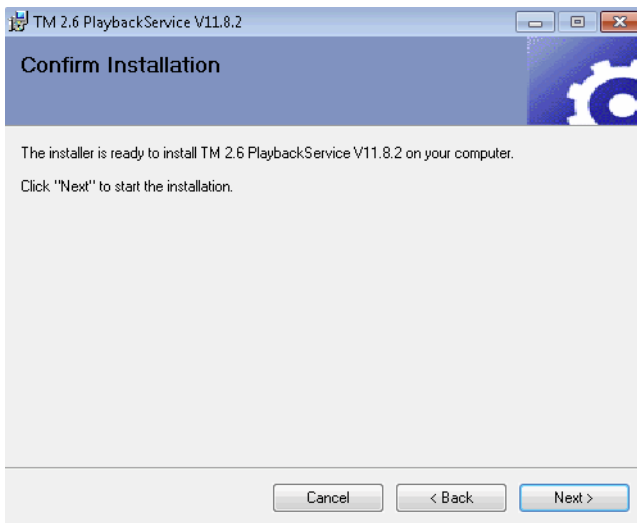
4. Wait for install to complete:



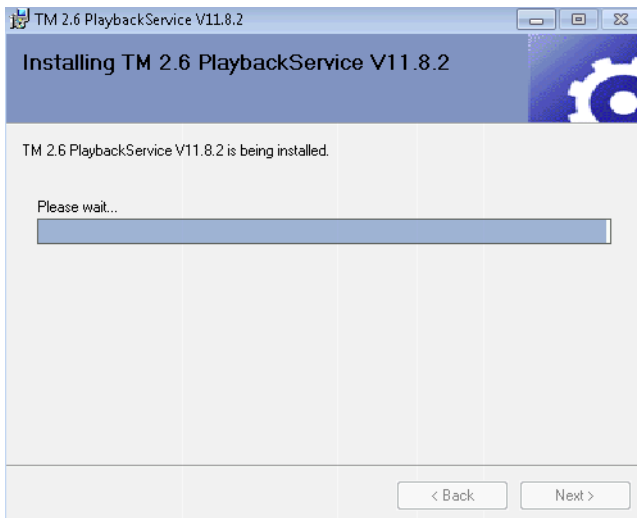
5. Click Next to accept the default location:



6. Click Next to start installation:

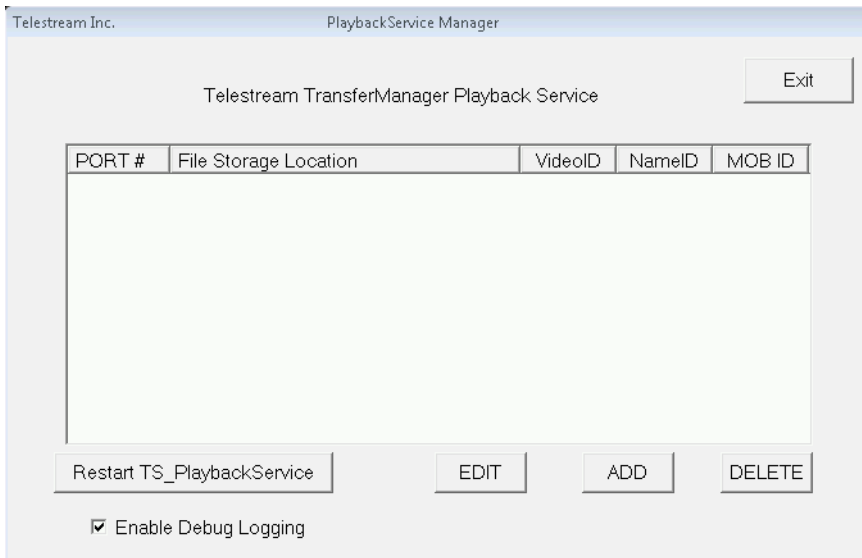


7. Wait for progress to finish:

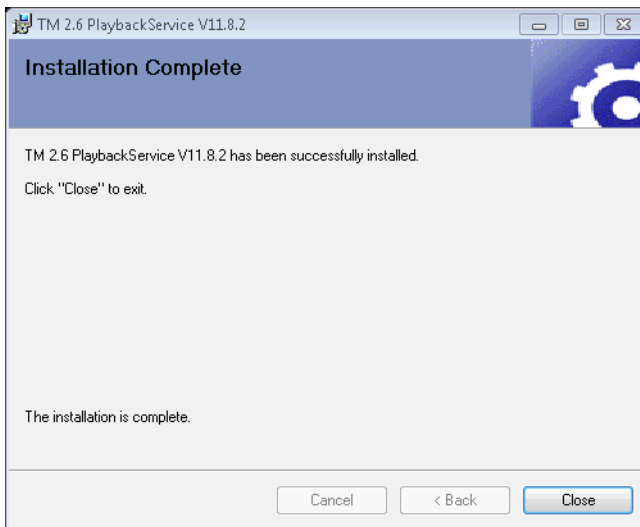




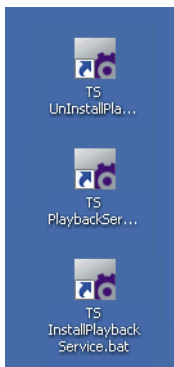
8. Click *Exit* to close window:



9. Installation complete. Click *Close*:



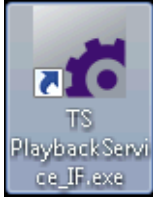
10. The installation creates three desktop icons: a bat file that does some preliminary clean-up, an installer exe file, and an uninstaller bat file (see [Uninstalling the Playback Service Software](#) for use of this bat file.)



11. Double-click the *TSInstallPlaybackService.bat* icon to run the bat file:



12. Double-click the *TSPlaybackService\_IF.exe* icon to run the exe file:



## Configuring Telestream Playback Service

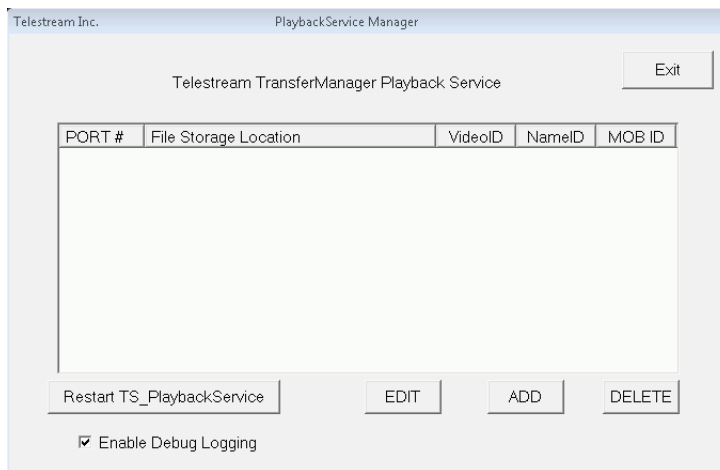
For each TIFO destination folder you intend to use in Avid-Telestream workflows, it must be shared with full read and write access, and you must update the Telestream Playback Server to provide a playback device for each destination folder. (You typically have one destination for each factory.)

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 in order to publish the current list. (See [Restarting and Stopping the TS Playback Service](#)).*

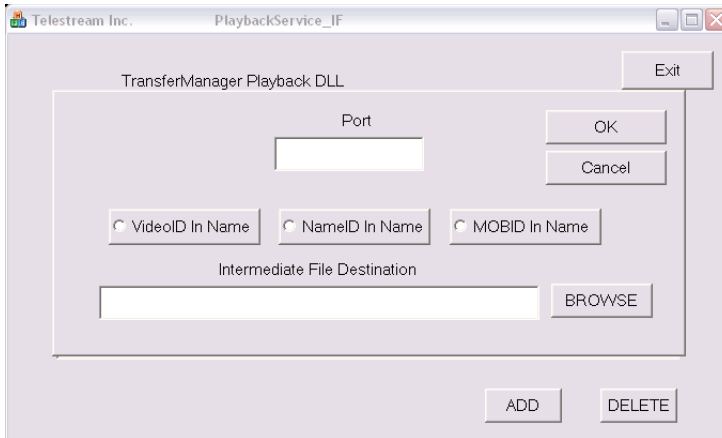
## Starting the Configuration Utility

To start the configuration utility, double-click the *TSPlaybackService\_IF.exe* icon on the desktop, or navigate to the installation folder (*C:\Program Files(86)\Telestream\PlaybackService*) and double-click *TSPlaybackService\_IF.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 VideoIDs attributes in the Interplay environment.

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

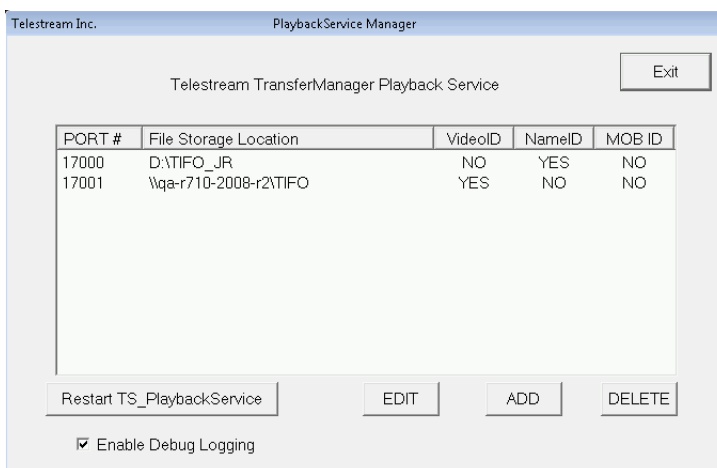
**MOBID in Name.** The internal system identifier used by Interplay to track the video Sequence.

**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.

When you are done configuring, click *OK*.

13. To setup another configuration, click *Add*. To edit an existing configuration, click *Edit*. To delete a configuration, click *Delete*.

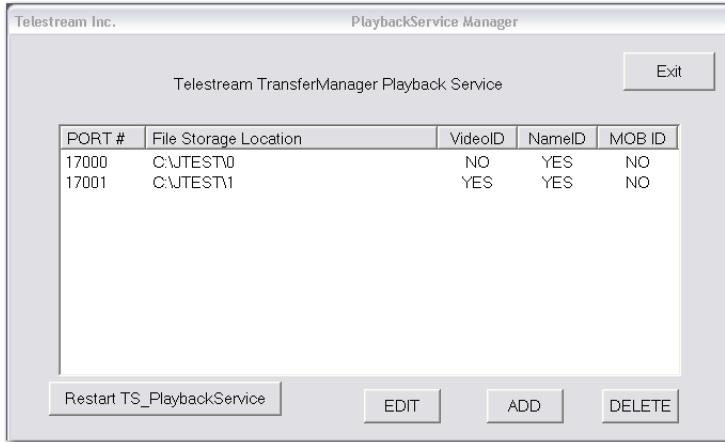
14. Set up any desired configuration and click *Restart TS\_PlaybackService*:



15. Click OK:



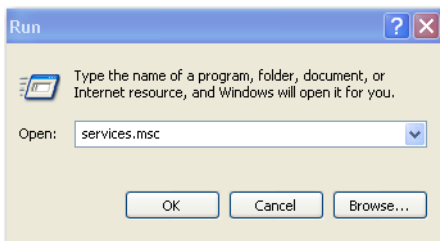
16. Click *Exit* to quit the Playback Service Configuration Utility:



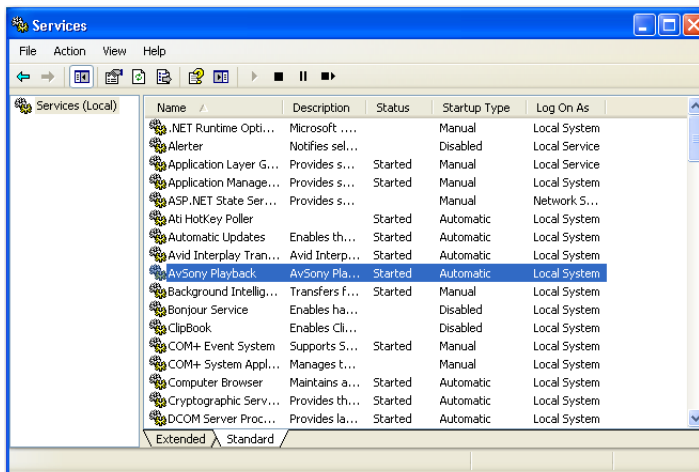
## Stopping AvSony & Pluto PlayServer Services

Two services must be stopped (and changed to Manual Startup Type) before you can use the Telestream Playback Service.

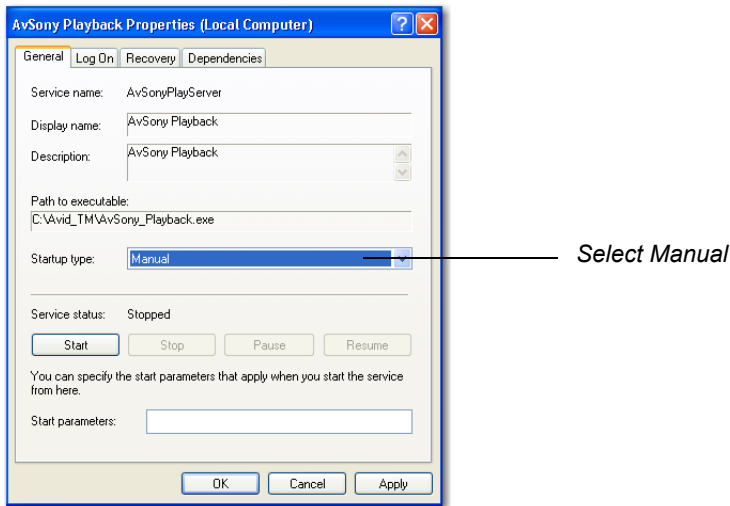
1. To open the Services window, open the Run window, enter *services.msc*, and click OK:



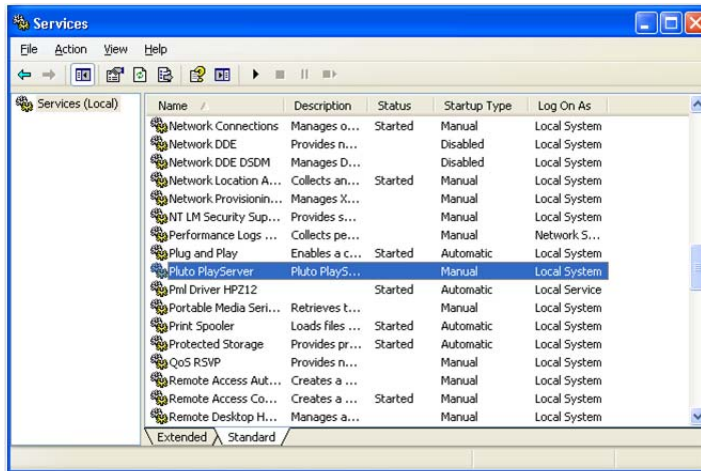
2. In the Services window, find AvSonyPlayback. If running, right-click select Stop. Right-click on it again and select Properties:



3. Change the Startup type to Manual:



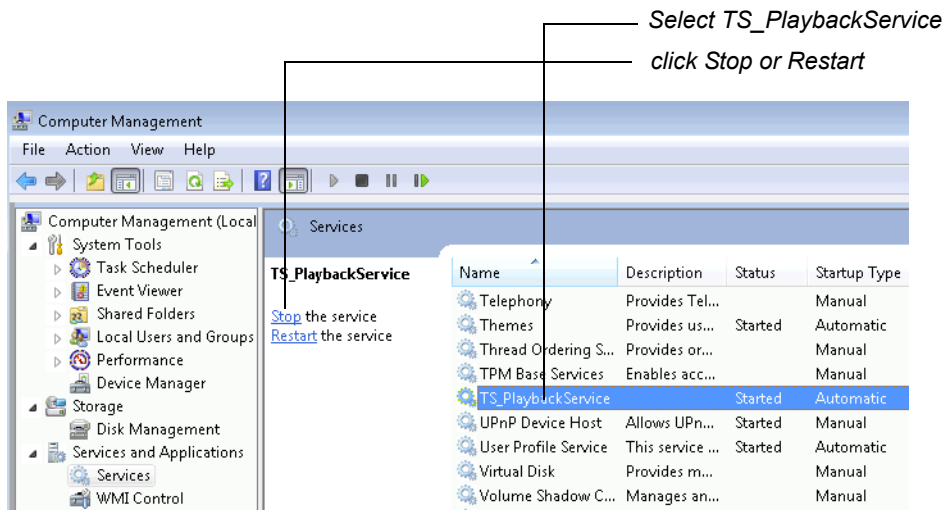
4. Find the Pluto PlayServer. If it is running, stop it, open properties, and change the startup type to Manual:



5. Close the Services window.

## Restarting and Stopping the TS Playback Service

To restart or stop the TS Playback Service, open Windows Services (Control Panel > System and Security > Administrative Tools), scroll down to *TS\_PlaybackService*, and click either *Restart the service* or *Stop the 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*), 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.

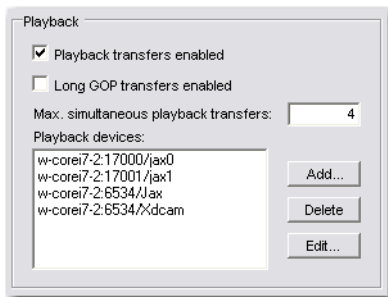
# Configuring Interplay Transfer Engine

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 factory workflows, you must update the interplay Transfer Engine Configuration to provide a playback device for each destination folder. (You typically have one destination for each factory.)

## 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.

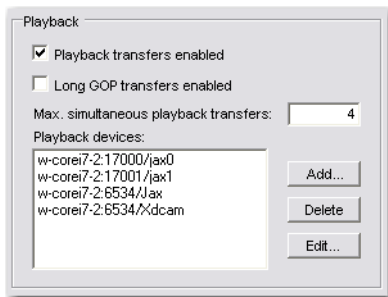
**Max. Simultaneous Transfers.** Under Total Transfers, enter 4 (minimum value) in Max. simultaneous transfers.

Save and close the configuration program.

## Managing Interplay Transfer Engine Playback Devices

For each destination folder you intend to use in Avid-Telestream factory workflows, you must update Interplay Transfer Engine to add a playback device for each destination folder. (Typically, you have one destination for each factory.) If you eliminate a destination folder, you should also delete the associated playback device.

To add or remove playback devices, start the Interplay Transfer Engine configuration application:



**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 *server:port* identifier. This name should describe the purpose of

the Playback Device or the factory in which it is utilized. It cannot contain spaces. Example:  
*AnyServer:17000/Playback\_Service\_1*



The screenshot shows a dialog box titled "Playback Device". It contains several input fields and checkboxes. The "Profile Name" field is empty. The "Device Name" field contains "Jax". The "Service Host" field contains "QA-Avid-PC". The "Service Port" field contains "170002". Under the "Catalog" section, there are two checkboxes: "Enable Playback Catalog Name" (unchecked) and "Allow Ancillary Data Tracks" (checked). At the bottom, there is a "Device String:" label and two buttons: "OK" and "Cancel".

**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.

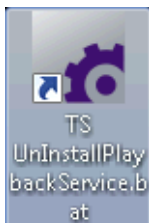
The Playback Service handles insertion of Black Frames and Fill Frames into the video sequence when using the Avid Editors. The Black Frames are the appropriate size and format for the factory workflow that is edited.

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.

## Uninstalling the Playback Service Software

To uninstall the Telestream Playback Service, follow these steps:

1. Double-click the *TSUnInstallPlaybackService.bat* icon:

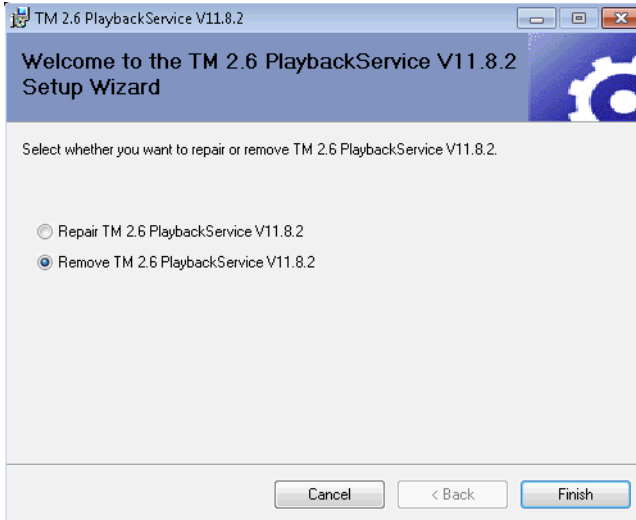




2. Double-click the *PlaybackServiceInstaller\_TM\_2.6\_V11.8.2.msi* icon.



3. Select *Remove* and click *Finish*:



# Creating Avid–FlipFactory Workflows

Using Telestream Playback Service, you can create FlipFactory workflows that automatically process sequences that have been 'Sent To Playback...' from Avid Interplay clients such as Avid Media Composer, for direct-convert operations or transcoding by FlipFactory. These types of workflows can optionally deliver the media that FlipFactory has processed back to an Avid client as a new master clip via Interplay Transfer Engine, creating a round-trip workflow.

Telestream has implemented an Avid Playback Service monitor in FlipFactory – and an AVID Interplay Transfer Engine Notification – to implement automation of these types of workflows.

When creating a workflow that processes media sequences that have been 'Sent To Playback...' via Interplay Transfer Engine using Telestream Playback Service and require pass-through of the MOBID, you should include an Avid Playback Service monitor in your factory. If you don't need the MOBID passed through, you can simply implement a network monitor.

When delivering transcoded media back to Interplay Transfer Engine for ingest into an Interplay environment, you should include an Avid Interplay Transfer Engine Notify in your factory.

## Avid Playback Service Monitor

The Avid Playback Service is a stand-alone feature that creates TIFO files. These files are saved into a folder monitored by FlipFactory. (The Accept filename pattern in the monitor settings is set to **\*.tifo** by default). When a new TIFO file is saved in the monitor folder, FlipFactory reads and processes it. The TIFO file can be written by the Avid Playback Service and read by FlipFactory simultaneously.

Upon accepting the file, the monitor extracts the MOBID (if present) from the **TIFO** file, generates a new, unique MOBID and writes both MOBIDs to an XML file to pass along with the job.

To deliver the MOBID XML file, add an Avid Interplay Engine Notification to the factory, and specify the destination folder where you want the XML file and media file delivered for pick up by Interplay Transfer Engine.

**Note:** *If your workflow doesn't require pass-through of the old and new MOBIDs, you don't need to use the Avid Playback Service monitor. Instead, you can use a Network monitor.*

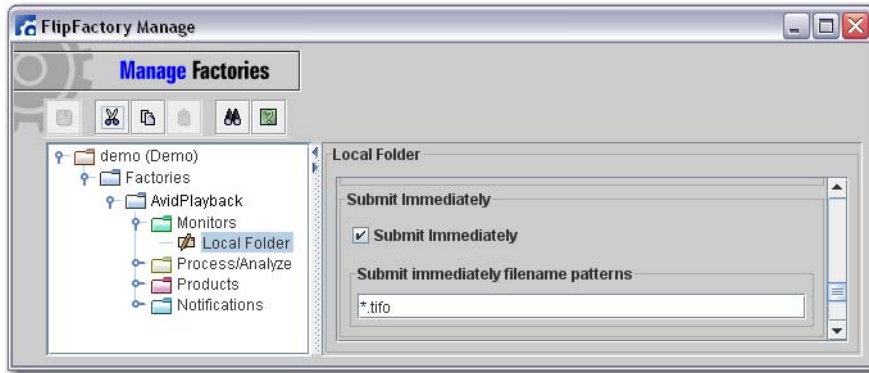
The name of the **TIFO** file optionally includes the MOBID, video ID, and Name ID, based on how the destination entry was configured in the Playback Service Configuration Utility.

On an Avid editor, when sending a sequence, you provide a tape ID and name of the sequence. Both of these are sent to the Interplay Transfer Engine.

Most controls in the monitor are general-purpose and network controls. The only Avid-specific field is the Monitored Folder field.

**Monitored Folder.** You should enter the domain/workgroup name, then click Browse to navigate to and select the server and share that is the file destination you specified in the Telestream Playback Service Configuration Utility where Avid Interplay Transfer Engine should deliver the **TIFO** file using the Telestream Playback Service.

In FlipFactory where the TIFO file will be transcoded, processing of the file can start immediately (before the TIFO file is fully created) by selecting *Submit Immediately* in the monitor configuration as shown below:



## Avid Interplay Transfer Engine Notify

If you're returning transcoded media (and optionally, the MOBID XML file) to Avid, implement an Avid Interplay Transfer Engine Notify in the factory. The Avid Interplay Transfer Engine Notify in FlipFactory sends a message to the Interplay Transfer Engine when the job is complete and the transcoded media (and optional XML file) is ready to be imported into the Interplay production environment. Avid Interplay Transfer Engine then ingests the files referenced by the notification.

Update these settings:

**Unity/LANShare Workspace (optional).** Enter the name of the Unity/LANShare Workspace. The workspace parameter is only applicable when the Interplay Transfer Engine is attached to a Unity/LANShare. If a Unity/LANShare isn't present, this parameter is ignored.

**Ingest Type.** Specify the ingest type as AAF or OMF.

**Domain/Workgroup Name.** Enter the domain name or IP address of the server where you want the XML files stored.

**Transfer Engine Name.** The name of the Transfer Engine can be entered as an option.

**MOBID Map Destination Folder.** Click Browse to locate and select the XML Destination folder which FlipFactory uses to save the associated MOBID XML file for each job. This folder serves as the ingest point for the MOBID XML files by Avid Interplay Transfer Engine. This folder must be a UNC-accessible folder accessible by the Interplay Transfer Engine server.

If a MOBID file is supplied, the XML file name is automatically generated. The XML file has 2 elements – a new, unique, randomly-generated MOBID and the original MOBID passed in from the TIFO file.

**Destination Folder.** Click Browse to locate and select the destination media folder for FlipFactory, which serves as the source of the ingest point for media files by Avid Interplay Transfer Engine. This folder must be a UNC-accessible folder accessible by the Interplay Transfer Engine server.

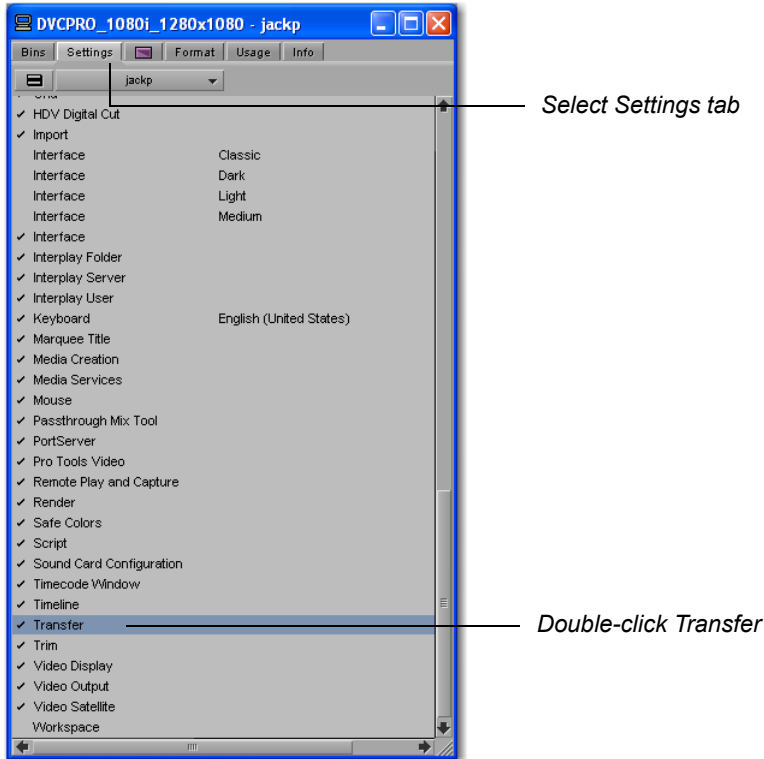
# Avid Media Composer and Playback Service

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

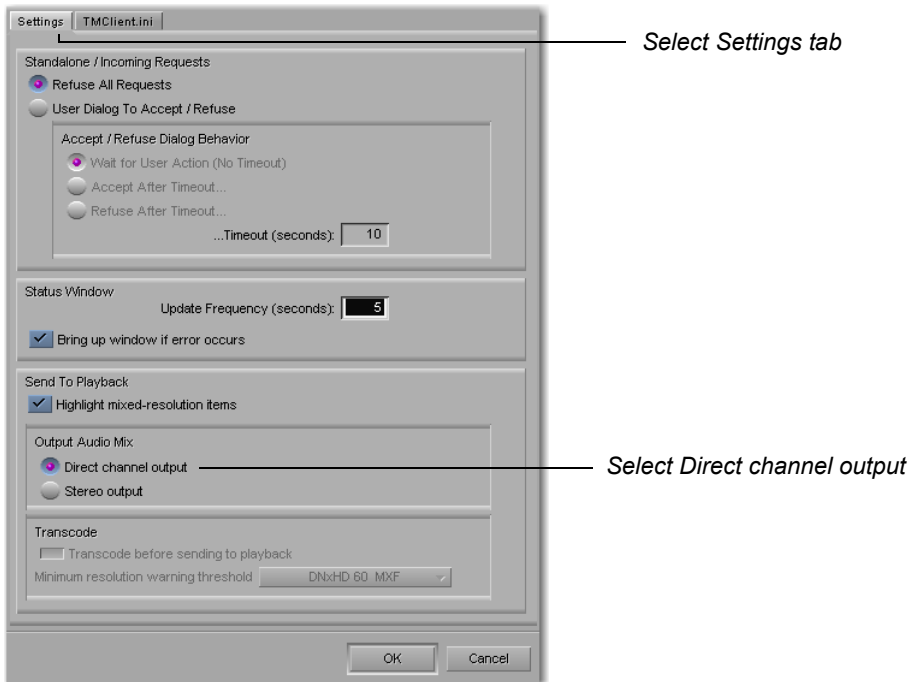
## Setting Up Avid Media Composer

To setup the Avid Media Composer, follow these steps:

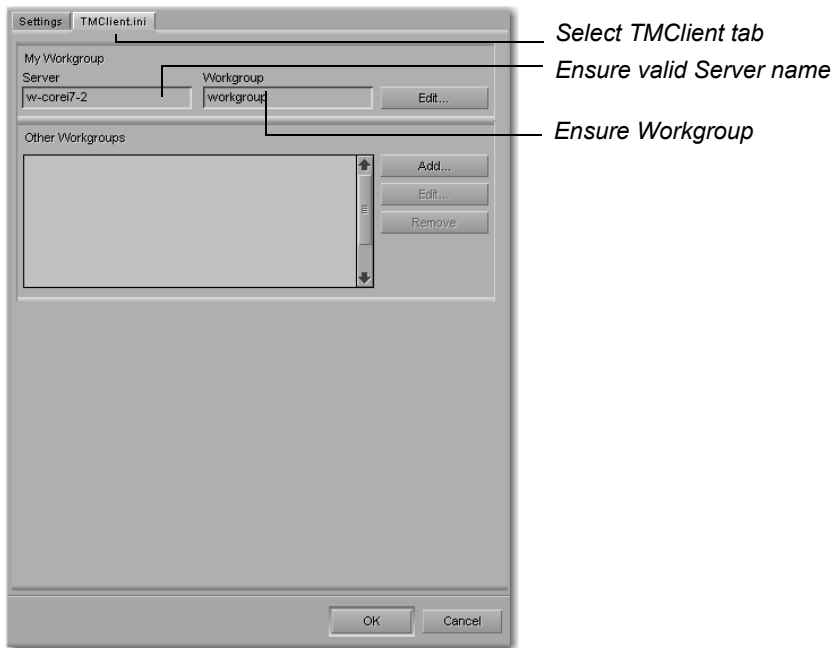
1. Open the Avid Media Composer and select the Settings tab in the Bin window. Double-click on Transfer:



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



- 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.



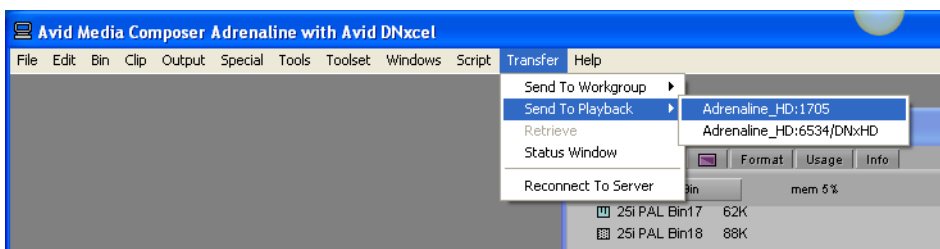
## Using Telestream Playback Service

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 FlipFactory-monitored folder.

- Create a sequence.
- Add a clip to the sequence that you want transcoded by FlipFactory. 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).
- 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.

- Now, select Transfer > Send To Playback > Playback Device, where the playback device is the *destination:port/Name* and optional 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.

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

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	720p	1280x720	23.976
AVC Intra 50	8	720p	960x720	23.976

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	720p	1280x720	25
DVCPRO HD MXF	8	720p	960x720	25
AVC Intra 50	8	720p	960x720	25

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	720	1280x720	29.97

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC-Intra 100	8	720	1280x720	50
DVCPRO HD MXF	8	720p	960x720	50
AVC Intra 50	8	720	960x720	50

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	720	1280x720	59.94
DVCPRO HD MXF	8	720p	960x720	59.94
AVC Intra 50	8	720	960x720	59.94

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	1080	1920x1080	50
DNxHD TR 120 MXF	8	1080i	1440x1080	50
DVCPRO HD MXF	8	1080i	1440x1080	50
AVC Intra 50	8	1080	1440x1080	50

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	1080	1920x1080	59.94
DVCPRO HD MXF	8	1080i	1280x1080	59.94
AVC Intra 50	8	1080	1440x1080	59.94
DNxHD TR 145 MXF	8	1080i	1440x1080	59.94

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	1080	1920x1080	23.976
AVC Intra 50	8	1080	1440x1080	23.976

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
DNxHD 36 MXF	8	1080p	1920x1080	25
DNxHD 120 MXF	8	1080p	1920x1080	25
DNxHD 185 MXF	8	1080p	1920x1080	25
DNxHD 185 X MXF	10*	1080p	1920x1080	25
AVC Intra 100	8	1080	1920x1080	25

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
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
AVC Intra 100	8	1080	1920x1080	29.97

\* 10 bits are truncated to 8 bits

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
DV25P 411 MXF	8		720x480	23.976p
DV50P MXF	8		720x480	23.976p

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
DV25P 411 MXF	8		720x576	24p
DV25P 420 MXF	8		720x576	24p
DV50P MXF	8		720x576	24p
DV25P 411 MXF	8		720x480	24p
DV50P MXF	8		720x480	24p



<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
DV25 420 MXF	8		720x576	25i
DV25 411 MXF	8		720x576	25i
DV50 MXF	8		720x576	25i
MPEG 30 (IMX) MXF	8		720x576	25i
MPEG 40 (IMX) MXF	8		720x576	25i
MPEG 50 (IMX) MXF	8		720x576	25i

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
DV25P 420 MXF	8		720x576	25p
DV25P 411 MXF	8		720x576	25p
DV50P MXF	8		720x576	25p

<b>Format</b>	<b>Bits</b>	<b>Resolution</b>	<b>Frame Size</b>	<b>Rate (fps)</b>
DV25 420 MXF	8		720x480	30i
DV25 411 MXF	8		720x480	30i
DV50 MXF	8		720x480	30i
MPEG 30 (IMX) MXF	8		720x480	30i
MPEG 40 (IMX) MXF	8		720x480	30i
MPEG 50 (IMX) MXF	8		720x480	30i

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

<b>Project</b>	<b>Edit Rate</b>	<b>Resolution Name</b>	<b>MB/Sec</b>	<b>Raster Size</b>
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	29.97	AVC-Intra 100	100MBit	1920x1080
1080p	23.976	AVC-Intra 50	50MBit	1440x1080
		AVC-Intra 100	100MBit	1920x1080
1080p	25	AVC-Intra 100	100MBit	1920x1080
720p	23.976	AVC-Intra 50	50MBit	960x720
720p	25	AVC-Intra 50	50MBit	960x720
720p	59.94	AVC-Intra 50	50MBit	960x720
720p	50	AVC-Intra 50	50MBit	960x720

- Support for Data Tracks (for Avid v2.3 and later)
  - CC1
  - CC3
  - V-Chip
  - Content Advisory Information
- Active Format Description

# Testing Playback Service Through FlipFactory

Start the Flip Factory Playback Service by double clicking on the TS\_PlaybackService\_IF.exe and selecting <Restart TS\_PlaybackService> button

In FlipFactory

- Create a factory and use the Avid Playback Service Monitor and point it to monitor the TIFO directory you created above
- Create a product (QT, MPEG or Windows)
- Select a destination directory

In the Avid Media Composer

- Transfer > Reconnect to Server
- Drag the file from the Bin directory to the Sequence window. This will automatically create a new sequence and you will see an untitled sequence in the Bin directory
- Name your sequence
- Enter a Tape ID
- Right click on the sequence in the Bin directory > Send to Playback > Select the server

This will create a .tifo file in the TIFO directory you created above. The FlipFactory monitor will pick up the .tifo file and flip it to whatever product you selected above.

To test that black frames can be inserted into the sequence and that the sequence can be transferred and then decoded, you need to do the following steps in the Avid Media Composer:

- Drag the file from the Bin directory to the Sequence window. This will automatically create a new sequence and you will see an untitled sequence in the Bin directory
- Mark a duration on the sequence



- Select <Add Edit> off the toolbar



- Select <Lift> off the toolbar
- Play your sequence out to verify the black has been inserted into your clip

To test that you can make an Video Stream only sequence that can be transferred

- The audio tracks will need to be deleted. Hoover your mouse above the tracks and then right click and select delete tracks



**Note:** Note - Avid Media Composer will not transfer a audio only file.

# 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 FlipFactory for transcoding. (Be sure that the VideoID (TapelD) 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 and 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 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 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 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.

# Copyright and Trademark Notice

©2013 Telestream, Inc. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, altered, or translated into any languages without written permission of Telestream, Inc. Information and specifications in this document are subject to change without notice and do not represent a commitment on the part of Telestream.

Telestream, Vantage, Flip4Mac, FlipFactory, Episode, ScreenFlow, Wirecast, GraphicsFactory, MetaFlip, MotionResolve, and Split-and-Stitch are registered trademarks and Pipeline, Launch, and Videocue are trademarks of Telestream, Inc. All other trademarks are the property of their respective owners.