TELESTREAM

APP NOTE

FlipFactory®

USING TELESTREAM PLAYBACK SERVICE FOR AVID INTERPLAY TRANSFER ENGINE

This App Note applies to FlipFactory versions 6.1 & later

July, 2009

P/N 74-0201-01

Synopsis

Telestream's Playback Service for Avid Interplay Transfer Engine enables Avid editors (Avid Media Composer, for example) to easily and seamlessly use Interplay Transfer Engine to wrap Avid sequences in TIFO file format and save these files to specified share destinations for ingest into transcoding workflows by Telestream products including FlipFactory.

Operational Overview

When you create a FlipFactory workflow for exporting media from Avid for processing, you create a factory utilizing an Avid Playback Service monitor or Network monitor.

Next, you add a new destination entry using the Telestream Playback Service Configuration Utility – assigning a fully-qualified share path as the destination folder, and an arbitrary, unique port number to be associated with it. This port number is used by the Avid Interplay Transfer Engine to identify which playback service to use (in this case, the Telestream Playback Service). To publish the current list of destination:port entries, you restart the Telestream Playback Service.

Last, you use the Avid Interplay Transfer Engine Configuration Manager to add the new playback device – specifying the Interplay Transfer Engine server and port for this destination. Then, restart Interplay Transfer Engine to publish the current list of playback devices. Each entry ties Interplay Transfer Engine to a port, which in turn ties the port to the destination folder.

In operation, an Avid operator can seamlessly transcode media in FlipFactory directly from an Avid Editor via Interplay Transfer Engine. The Avid user simply selects a playback device to export a clip sequence from Avid Media Composer, for example, 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.

The monitor polls the share identified by the destination:port entry specified in the Playback Configuration Utility – the destination where the TIFO files are delivered from Avid Interplay Transfer Engine via the Telestream Playback Service. You can also add an Avid Interplay Transfer Engine Notify to return the transcoded media back to the Interplay Transfer Engine for ingest into Avid clients with MOBIDs attached for identification via XML, providing a seamless round-trip Avid-FlipFactory-Avid transcoding workflow.

Up and Running

Before you can use the Telestream Playback Service, perform these one-time tasks:

1. Install Telestream Playback Service (Page 3)
2. Configure Telestream Playback Service and re-start it (Page 7)
3. Configure Avid Interplay Transfer Engine and re-start it (Page 9)

Naming Conventions

In FlipFactory V6.1, the Avid monitor & notification refer to *TransferManager*. In 7.0, they refer to the *Interplay Transfer Engine*. In this document, the phrase *Interplay Transfer Engine* is used to refer to the Avid monitor & notification in both versions of FlipFactory.

Installing Telestream Playback Service

Follow these steps to review software requirements, obtain the Telestream Interplay Transfer Engine Playback Service installer (a zip file), and install the software directly on your Avid Interplay Transfer Engine server.

Avid Interplay Transfer Engine & FlipFactory Requirements

Avid Interplay Transfer Engine. Version 1.6.0 or later

FlipFactory. Version 6.1 with Update Pack 3
Version 6.1 with AvidSendtoPlaybackMonitorMOBIDSupport_6_1_44866 patch
Version 7.0.

Obtain and Unzip the Software

To obtain the Telestream Playback Service software zip file, go to Telestream's Web site and download the file from the FlipFactory Web page – select the zip file from the list of links in the left column, near the bottom. Or, obtain the file from your Telestream representative.

After obtaining the zip file, copy the zip file directly onto the Interplay Transfer Engine server or onto a share that it can access.

Open (unzip) the zip file, which contains three program files (noted below), and one or more App Notes (the document you're reading now).

Install the Software and Copy the App Notes

Install the following components directly onto the Avid Interplay Transfer Engine server:

TS_AvidPlaybackVC7.dll. This DLL implements communication between Avid Interplay Transfer Engine and the TS_PlaybackService service.

Place this DLL in the same folder as the XferMgrServer.exe file.

Default folder: C:\Program Files\Avid\Avid Interplay Transfer Engine.

TS_PlaybackService.exe. This is the Telestream Playback Service Windows Service installer, which installs the Telestream Playback Service. This service communicates with Interplay Transfer Engine via TS_AvidPlaybackVC7.dll to wrap Avid sequences in a TIFO file and save them to specified share destinations.

Suggested install folder: C:\Program Files\Telestream\Telestream_Avid_PlaybackService. Create this directory in Windows Explorer.

PlaybackService_IF.exe. This utility is used to configure Telestream Playback Service. Configuration settings are stored in the Windows Registry.

Suggested install folder: C:\Program Files\Telestream\Telestream_Avid_PlaybackService.

App Note. Copy app notes onto the Interplay Transfer Engine server.

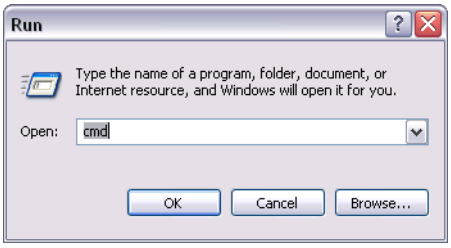
Suggested folder: C:\Program Files\Telestream\Telestream_Avid_PlaybackService.

Install the Telestream Playback Service Software

Before the Telestream Playback Service can operate, you need to install the Telestream Playback service and start it. To do so, follow these steps:

Open a Command window by selecting Start > Run.

Figure 1. Select Start > Run and enter 'cmd' to display the Command window



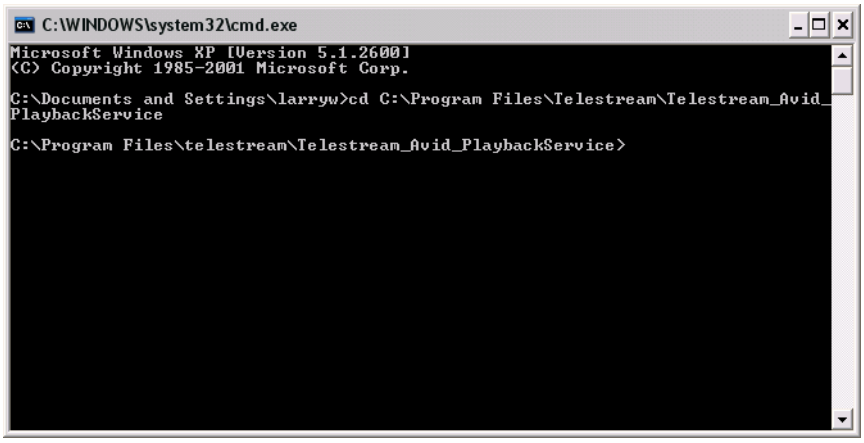
Enter **cmd** in the Open field and click OK.

Figure 2. The Command window

Next, change to the folder where you saved the TS_PlaybackService.exe installer (default: C:\Program Files\Telestream\Telestream_Avid_PlaybackService):

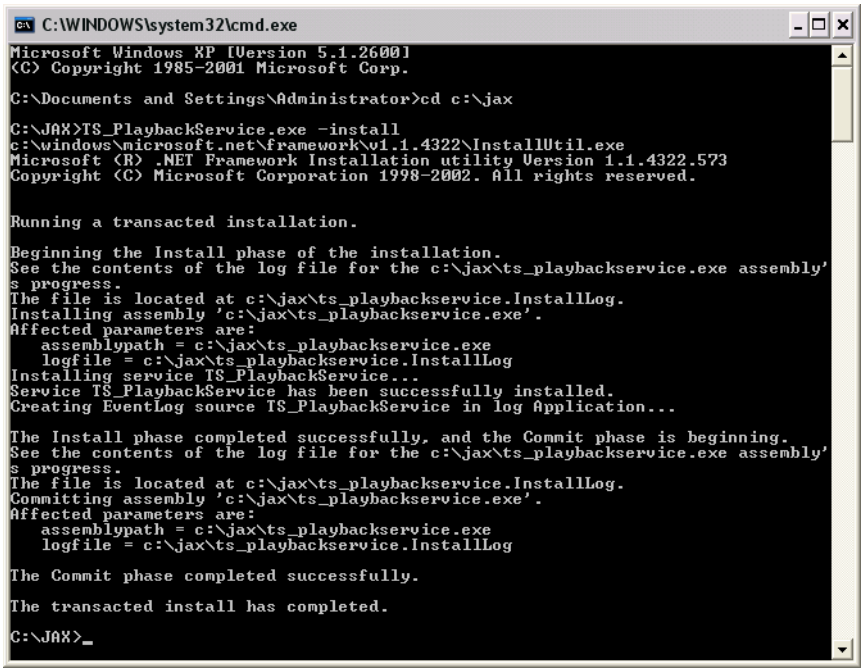
Enter **cd C:\Program Files\Telestream\Telestream_Avid_PlaybackService** (or the correct path, if different from the suggested default) and press enter, as shown below.

Figure 3. Change to the Avid Playback Service folder



Enter the command **`TS_PlaybackService.exe -Install`** and press Enter to install the Telestream Playback Service as a Windows Service, as shown below:

Figure 4. Install the Telestream Avid Playback Service as a Windows Service



This command installs the Telestream Playback Service as a Windows service. Several lines of information display when you execute the command. Look for the following text:

`The Install phase completed successfully, and the Commit phase is beginning.`
`The Commit phase completed successfully.`
`The transacted install has completed.`

Also, review the information to determine if any errors occurred. If the Install, Commit, and Completed lines are present and there are no errors, the Telestream Playback Service has been installed correctly.

Note: *If the Unable to Locate Component Error window displays, you're probably not installing the software on an Interplay Transfer Engine server. Contact your system administrator.*

Stopping PlutoPlayServer & AvSony Services

Two services must be stopped (if they are running) before you can use the Telestream Playback Service.

In the Services window, look for the PlutoPlayServer. If running, right-click the service and select Stop. Next, right-click on it again and select Properties. Change the Startup type to Manual.

Look for the AvSony service. If it is running, stop it also, and change the startup type to Manual.

Close the Services window.

Starting Telestream Playback Service

With the Telestream Playback Service installed, you can start it. To do so, follow these steps:

Display the Services window. Go to Start > Control Panel > Administrative Tools > Services
–OR–
Select Start -> Run; type **`services.msc`** and press Enter). Scroll through the list of Windows services until you locate TS_PlaybackService.

Note that the Startup Type is set to Automatic – this service starts automatically whenever you reboot the server. Rather than rebooting and affecting all applications on this server, you can start the service directly. Right-click on the service and select Start from the menu.

Wait for the Status to change to Started and then close the window.

Note: *Anytime you modify the file destination entries in the Telestream Playback Service Configuration Utility (Starting the Configuration Utility on page 7), 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.*

Uninstalling Telestream Playback Service

If you need to uninstall the Telestream Playback Service, open a command window and change to the folder where you saved the TS_PlaybackService.exe installer (default: C:\Program Files\Telestream\Telestream_Avid_PlaybackService):

Enter **`cd C:\Program Files\Telestream\Telestream_Avid_PlaybackService`** (or the correct path, if different from the suggested default) and press enter, as shown below.

Run this command:

```
TS_PlaybackService.exe -Install /u
```

Delete the following files from the Avid Interplay Transfer Engine server in the directories where you installed them:

TS_AvidPlaybackVC7.dll. Default folder: C:\Program Files\Avid\Avid Interplay Transfer Engine.

TS_PlaybackService.exe. Suggested install folder: C:\Program Files\Telestream\Telestream_Avid_PlaybackService. Create in Windows Explorer.

PlaybackService_IF.exe. Suggested install folder: C:\Program Files\Telestream\Telestream_Avid_PlaybackService.

App Note. Suggested folder: C:\Program Files\Telestream\Telestream_Avid_PlaybackService.

Configuring Telestream Playback Service

Each time you add or delete playback devices in Interplay Transfer Engine (using the Interplay Transfer Engine configuration application), you need to run the Telestream Playback Service Configuration Utility to create (or delete) a matching destination folder entry.

Note: *Each time you modify the destination entries, you need to restart the Telestream Playback Service (Restarting the Telestream Playback Service on page 8) in order to publish the current list to FlipFactory.*

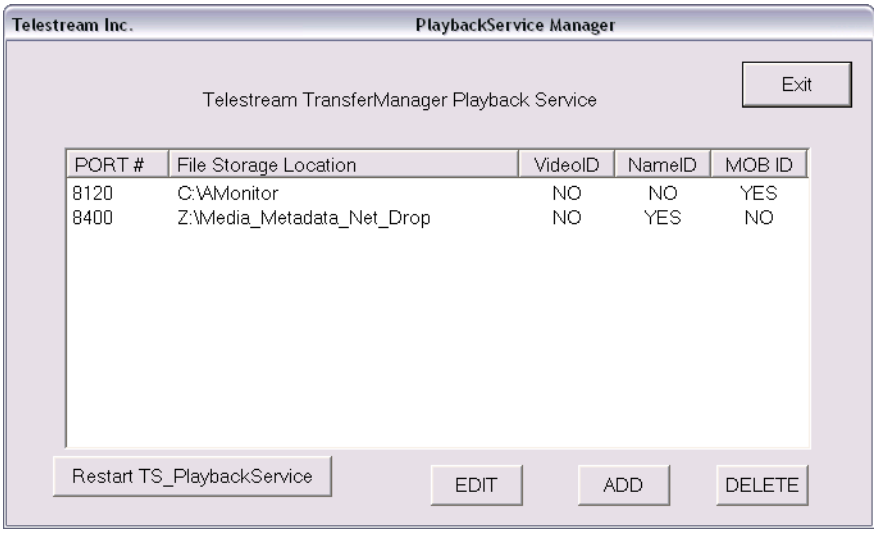
The Playback Service Configuration Utility saves these settings in the Windows Registry for use by the Playback service at runtime, under control of Interplay Transfer Engine.

When you're done managing your file destinations, click Exit to quit the utility.

Starting the Configuration Utility

Double-click PlaybackService_Config.exe to start it. (The recommended installation folder is C:\Program Files\Telestream\PlaybackService.)

Figure 5. Telestream Playback Service Configuration Utility



Managing Interplay Transfer Engine Destination Directories

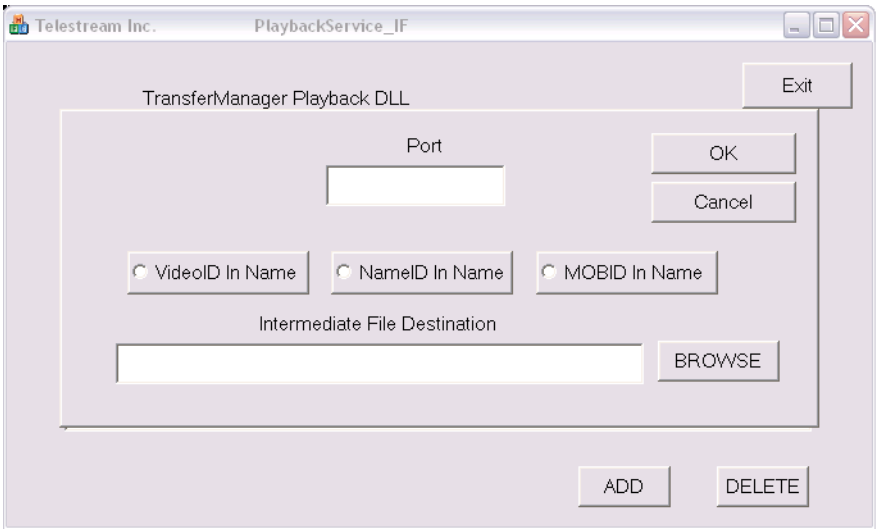
For each destination folder you create, click ADD and provide the details to create a Destination:Port entry in the table. To modify an existing entry, select the entry and click EDIT to update the entry. To permanently remove the entry, select it and click DELETE.

These Destination:Port entries are saved in the Windows registry, and provided to client applications (editors such as Avid Media Composer) under control of Interplay Transfer Engine, so users can select where to deliver the media for processing by a FlipFactory or Pipeline workflow.

Adding an Entry

When you click ADD, the Playback Service Configuration Utility displays this dialog:

Figure 6. Adding a destination entry



Update the following fields and controls:

Port. Enter the port number to be used for this file destination. Suggested ports: 1001-65535.

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 below (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.

Note: *The MOBID is always passed as metadata directly in the TIFO file, but all three are optionally part of the TIFO file name, based on your settings.*

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 (FlipFactory, for example) have access to the media.

Restarting the Telestream Playback Service

Restart Telestream Playback Service by clicking Restart TS_Playback Service.

Stopping the Configuration Utility

Click Exit to quit the Configuration Utility.

Updating Interplay Transfer Engine Settings

You must update the settings and re-start the Interplay Transfer Engine to support the Telestream Playback service before you can start using it (this is a one-time task).

Additionally, for each destination folder you intend to use in Avid-Telestream workflows, you must update Interplay Transfer Engine to provide a playback device for each destination folder. (Typically, you have one destination for each factory.)

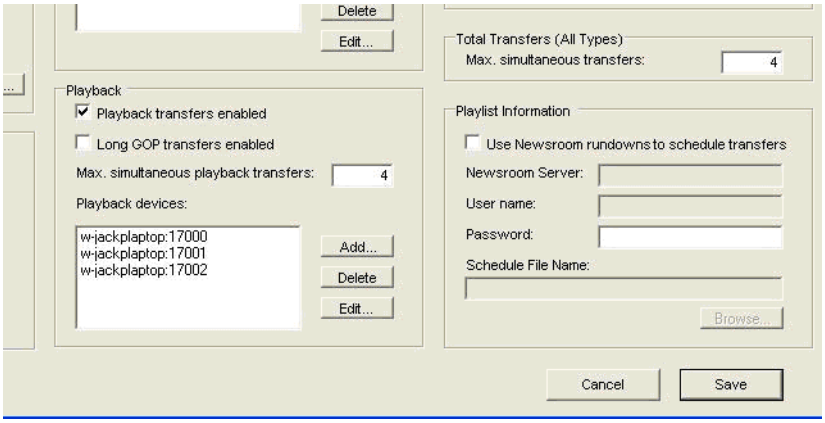
To change these settings, use the Interplay Transfer Engine configuration application.

Note: *Each time you modify settings or add or delete playback devices in Interplay Transfer Engine, you need to run the Telestream Playback Service Configuration Utility (Page 7) to create (or delete) a matching destination folder entry.*

Configuring Interplay Transfer Engine

To update Interplay Transfer Engine settings to support the Telestream Playback service, start the Interplay Transfer Engine configuration application:

Figure 7. Configure Interplay Transfer Engine to support the Playback service.



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

Max. Simultaneous Playback Transfers. Also under Playback, enter 4 in Max. simultaneous playback transfers.

Max. Simultaneous Transfers. Under Total Transfers, enter 4 in max. simultaneous transfers.

Save and close the configuration application.

Re-start Interplay Transfer Engine.

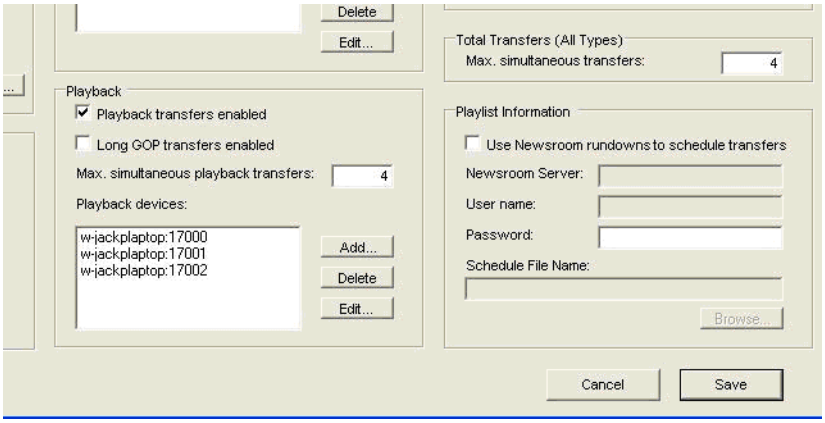
Adding and Deleting Interplay Transfer Engine Playback Devices

For each destination folder you intend to use in Avid-Telestream 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 remove the associated playback device.

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

Figure 8. Configure Interplay Transfer Engine with playback devices for each destination folder



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.

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 application.

Re-start the Interplay Transfer Engine.

Re-start Interplay Transfer Engine Server

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

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 improve 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 monitor is functionally a network monitor, with special functionality to improve and automate Avid media processing. The monitor regularly queries the target folder to identify new TIFO files. (The Accept filename pattern in the monitor settings is set to **`*.tifo`** by default). When a TIFO file is closed (finished writing) the file is detected as new and it is submitted for processing.

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.

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 file(s) 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.

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

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.

Using Telestream Playback Service with Avid Media Composer

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

First, create a sequence.

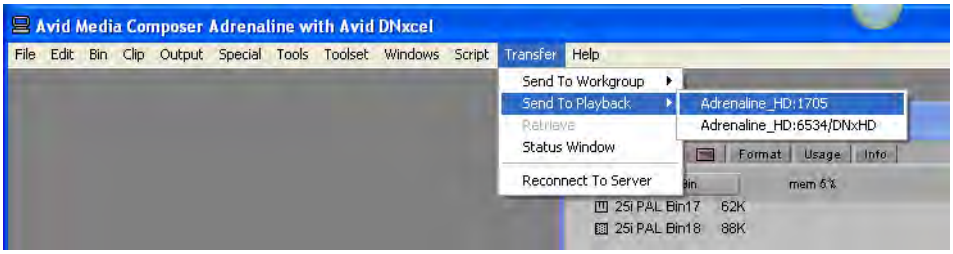
Next, add a clip to the sequence that you want transcoded by FlipFactory. Provide the sequence a Tape ID (no spaces, but numbers are allowed. The actual data that is placed in this ID is irrelevant and isn't used, but Interplay Transfer Engine won't transfer the sequence without it.

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 you want the media delivered as a TIFO file. The list of playback devices is the list published from Interplay Transfer Engine and previously configured using the Avid Interplay Transfer Engine configuration application.

Figure 9. Performing a Send To Playback operation.



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 timeline, 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.

Send to Playback/QuickTime Export Options

In the context of Avid TransferManager 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 (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.

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 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.

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FlipFactory has been designed for professionals skilled in the art of digital media transformation and workflow automation, to facilitate the automation of complex media operations and workflow that require a multitude of input and output media formats, delivery to numerous types of media devices and file systems, and notification of media systems including broadcast automation systems and media asset management systems.

The FlipFactory architecture and user interface is designed to provide maximum flexibility in the setup and configuration of these complex media transformations & workflows. In providing this high degree of flexibility, it is possible for media transformation & workflow processes to be configured that are impractical, likely to result in unexpected or unintended results, or beyond the limits of FlipFactory to perform satisfactorily. Additionally, FlipFactory may be executed on a platform that lacks the performance or capacity to perform the media transformations and workflows you've configured, which is your responsibility to specify. Telestream has chosen to implement FlipFactory to provide the greatest flexibility without limiting its functionality to only those transformations and workflow that are known with certainty to be within its performance capabilities, including those limits imposed by the platform upon which you have installed FlipFactory.

Therefore, you acknowledge that you may create transformations and workflow that are impractical or beyond your FlipFactory server's limits, and Telestream does not warrant that each transformation or workflow you specify or use will complete without error or perform in a timely manner.

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