Vantage
Application Note

Ingesting Media into Avid via Interplay Transfer Engine V2.7.0

For use with Vantage 6.0 or later

142927

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Synopsis

This application note describes how to set up and implement media processing workflows for automatically transferring Vantage-originated media into an Avid system for import into Media Composer and NewsCutter via Interplay Transfer Engine.

Note: When you are installing software or otherwise modifying Avid programs or systems, always confer and coordinate with your Avid systems administrator to make these changes, including restarting any systems. Always refer to Avid documentation if you have questions about the use of Avid products.

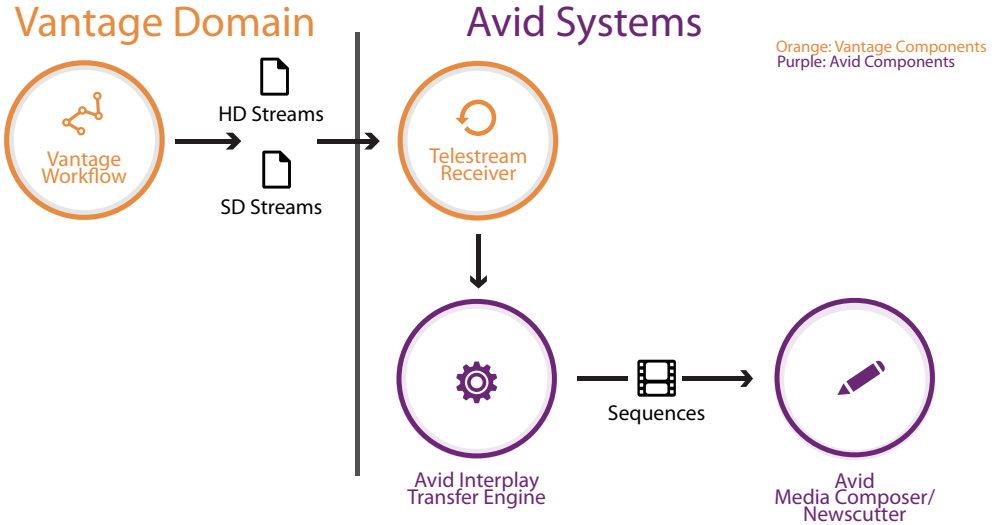
Overview

To facilitate the automatic ingest of media from Vantage workflows into Avid systems via Interplay Transfer Engine, Vantage provides these Vantage Transfer Manager Interplay Components:

- Avid Transfer Manager/Transfer Engine encoder
- Telestream Receiver—an Avid Transfer Engine Data Handler Module (DHM)

Note: Avid's DHM toolkit enables vendors to create a plug-in to work with Interplay Transfer and Transfer Engine for playback and ingest transfers. These transfers are distinct from standard file transfers in that they convert a sequence to/from a stream of video frames and audio samples that are transferred over a network. For example, during an ingest, the Transfer program accepts a multiplexed stream of video and audio frames and converts the stream into an Avid-compatible clip by wrapping it in MXF, AAF, or OMF format and checking the metadata into the Interplay Engine.

Figure 1. Logical Vantage-Avid Media Processing Workflow



These components work together to enable Vantage workflows to automatically submit transcoded media to an Interplay Transfer Engine for background clip ingest, re-wrapping, and writing to an Avid editing storage volume (ISIS or DAS) for import into Media Composer and NewsCutter by operators.

During Vantage workflow execution, the raw media stream is generated by the Avid Transfer Manager/Transfer Engine encoder (executing in a Flip action), and transmitted to the Telestream Receiver via a Deploy action, which passes it on to the Avid Transfer Engine in real-time.

The encoder creates the media in a video compression supported by Transfer Engine. Thus, no re-encoding is required when writing the media files to Avid storage. The Transfer Engine direct-converts the media to an Avid OP-Atom MXF file, and writes the media file in the correct directory for an Avid editing client to import.

Features

The Transfer Manager/Transfer Engine encoder and Receiver provide several features:

- Background ingest of media to the directory managed by the Avid linking model
- Deploys into Standalone, Network Storage, and Interplay-equipped environments
- Works for both Direct Attached Storage and ISIS Shared Storage users
- Deploys into an Interplay PAM environment when the Transfer Engine is configured to notify the Interplay system upon receipt of media from a Vantage workflow.
- The Vantage Avid Transfer Manager/Transfer Engine encoder supports a broad set of media formats (see Supported Avid Media Formats).

These media processing workflows may require a dedicated Avid Transfer Engine server for deployment into an Interplay Production Asset Management system.

Software Version Requirements

The following software versions are required:

- Vantage version 6.0 or later
- Avid Interplay Transfer Engine version 2.7.0*
- Avid Interplay Transfer Client V2.7.0 32-bit installer
- Avid Media Composer 6.5 or later or NewsCutter 10.0 or later

Note: *Interplay Transfer Engine version 2.7.5 (or other 2.7 versions) is not supported.

Licensing Requirements

The use of the Vantage Avid Transfer Manager/Transfer Engine encoder requires a Vantage ProConnect License. Please contact your Telestream representative or Telestream Customer Service (Table 1, Telestream Contact Information), to purchase a license.

Instructions for updating the license file are provided by Telestream via email.

Supported Interplay Transfer Engine Configurations

Avid Interplay Transfer Engine supports the following configurations:

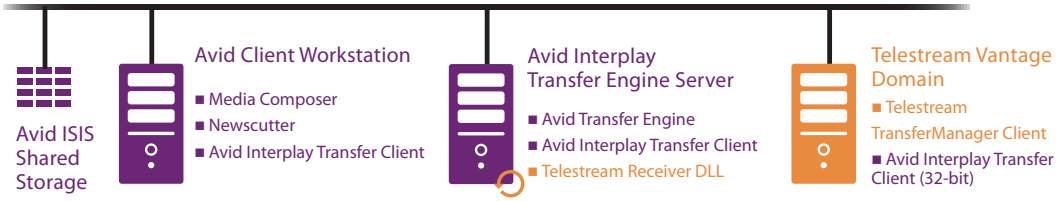
- A dedicated Interplay Transfer server connected to an Interplay environment that includes an Avid ISIS shared storage system (see Figure 2 below).
- Standalone Interplay Transfer software installed on an Avid editing system, connected to Avid shared storage without Avid Interplay Engine. Each client must install both Interplay Transfer Engine and Interplay Transfer client software (see Figure 3, on the next page).
- Standalone Interplay Transfer software installed on an Avid editing system with local storage (see Figure 4, on the next page).

The following diagrams depict these systems, including key software components from both Avid and Telestream. Avid components are indicated in purple; Vantage components in orange.

Avid Client & Transfer Engine in Interplay ISIS Workgroup

In this configuration, Interplay Transfer Engine is hosted on a dedicated server.

Figure 2. Avid Client & Transfer Engine Components on Dedicated Computers



The Media Composer and NewsCutter workstations are on separate workstations, all sharing ISIS storage.

Avid Client & Transfer Engine with ISIS Shared Storage

In this configuration, Avid clients—Media Composer or NewsCutter—are on a single computer that also hosts Interplay Transfer Engine.

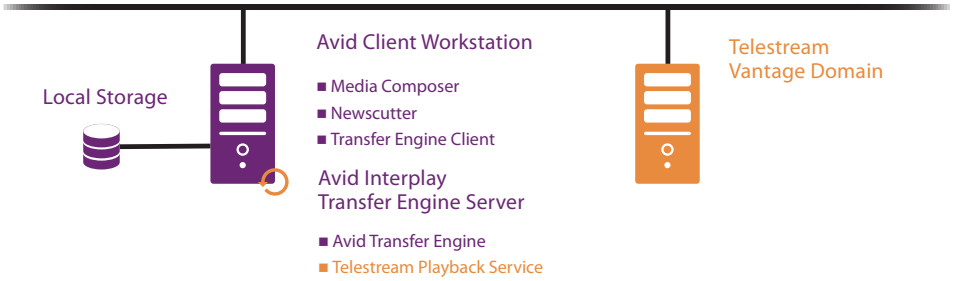
Figure 3. Avid Client & Transfer Engine Components on an Edit Workstation with ISIS

As in the previous illustration, all Avid components share ISIS storage.

Avid Client & Transfer Engine with Local Storage

In this configuration, Avid clients—Media Composer or NewsCutter—are also on a single computer that hosts Interplay Transfer Engine.

Figure 4. Avid Client & Transfer Engine Components on an Edit Workstation—Local Storage



In this case, however, the Avid clients utilize local storage.

Implementing Vantage-to-Transfer Engine Media Processing

Before you can process media in Vantage workflows and automatically deliver it to an Interplay Transfer Engine, your Avid system must be operational and be configured appropriately. You must also install Telestream software, perform some configuration tasks on both systems, and create and configure one or more Vantage workflows.

Note: These procedures assumes that your Avid system is already installed and is fully operational. Ensure that your Avid system is operational before proceeding.

To implement a Vantage-to-Transfer Engine media processing system, perform these tasks:

1. Installing the Avid Interplay Transfer Client—Installing the Avid Interplay Transfer Client on both the Avid and Vantage systems.
2. Installing Telestream Transfer Manager Interplay Components—Installing the Telestream Receiver and the Configuration for the Telestream TransferManager Client program.
3. Configuring the Transfer Engine—Configuring the Interplay Transfer Engine to work with the Telestream TransferManager Client.
4. Configuring the Telestream TransferManager Client—Setting up the Vantage domain to identify the Transfer Engine servers you are utilizing.
5. Sharing the Media Output Location—Setting up the media output folder as a share.
6. Setting up a Vantage Transfer Engine Workflow—Creating a Vantage workflow to encode your media and deploy it to a specific destination folder that is monitored by the Telestream Receiver for automatic ingest via Avid's Transfer Engine.

Installing the Avid Interplay Transfer Client

Use this topic to install the Avid Interplay Transfer Client.

Note: The Avid Interplay Transfer Client is presumed to already be installed on each Avid Transfer Engine server being used to transfer assets to another workgroup or playback device.

Install the appropriate version of the Avid Interplay Transfer Client on all Vantage servers running the Vantage Transport Service. Use the Avid Interplay Transfer Client 32-bit installer to install the 32-bit version on either a 32 or 64-bit operating system.

Installing Telestream Transfer Manager Interplay Components

Use this topic to install Telestream's Transfer Manager Interplay components on each Vantage domain computer running the Vantage Transport Service. The installer installs DLL library files, a configuration utility, a ReadMe file, and other miscellaneous files.

In an All-in-One domain, you install them on the Vantage domain computer. In a distributed domain (Vantage array), you need to identify each computer in the domain where the Vantage Transport Service is running. Typically, the Vantage Transport Service is running on the database server. However, in a large domain where the database is hosted on a dedicated server, the Vantage Transport Service may be installed and running on multiple servers.

Note: Be sure to coordinate with your Avid systems administrator to make these changes or restart any computers.

Perform these tasks to install the Telestream components:

- Meeting Prerequisites
- Obtaining the Installer
- Performing the Installation
- Moving the Telestream Receiver to the Interplay Transfer Engine Server

Meeting Prerequisites

Review and meet these prerequisites before proceeding with installation:

1. Have the following information available:

- The name of the Transfer Engine server
- The name you plan to assign the ingest device

2. Determine if the Transfer Engine is on the same domain/workgroup as the Vantage domain. If not, identify the domain/workgroup name that the Transfer Engine is running in.
3. If any target computer has an older version of the Telestream Receiver DLL (*Telestream_Receiver.dll*.) on it, delete it.

Obtaining the Installer

To obtain the Vantage Components for Interplay Transfer Engine installer, follow these steps:

1. Go to the Telestream Web site Download Vantage page and log in with your Telestream customer credentials.
2. Scroll down to view the tabbed area and display the Additional Components tab.
3. Under Avid Updates, click the Download Now link under Vantage Component for Interplay Transfer Engine Version 2.7.
4. Copy the zip file to the target computer or to a share that the server can access.

Performing the Installation

Note: You must stop the Vantage Transport Service prior to installation.

To install the Vantage Components for Interplay Transfer Engine, follow these steps:

1. Open Add/Remove programs and look for the Vantage TM Interplay Components. If present, remove it.
2. Stop the Vantage Transport Service (either in Windows Services or in the Vantage Management Console).
3. Open/unzip the installer Zip file and run the TE Component Prerequisites installer to install all required DLL library files.
4. Now, run the Vantage.Interplay.TM.2.7.Update_V7.1.2.msi installer.
5. If the Open File security warning displays, click Run to continue.
6. The installer displays the Welcome panel—click Next.
7. License Agreement panel—Read the license, click I Agree (if you do), and click Next.
8. Pre-Install Check panel—make sure the Vantage Transport Service is stopped. Click Next to continue.
9. Select Installation Folder panel—(default: C:\Program Files (x86)\Telestream\Vantage\) or click Browse to select the path where Vantage is installed. Click Next to continue.
10. Confirm Installation panel—Click Next to continue.
11. Installing Vantage TM Interplay Components—wait until complete, and click Next.
12. The installer launches the Telestream Transfer Manager Client. Provide the following information in the Primary Work Group panel to configure Interplay Transfer Engine:

    Workgroup Name. Domain/workgroup name of the Transfer Engine server.

    Host Name. Computer name of the Transfer Engine server.

    (If you do not have this information at this time, it can be added later. See Configuring the Telestream TransferManager Client.)

    If you are using more than one Transfer Engine servers add them to the Other Transfer Engine list. Use the Add, Edit, and Delete buttons to create a list of all the other Transfer Engine Servers that will be used.

Note: Since the servers in the Other Servers list obtain licensing information from the primary server, it must always be running. Make sure that the servers in the Other Servers list are running to prevent Vantage workflows from slowing down searching for servers.

13. Click Save to continue.
14. Component Installation Almost Complete—click Next to continue.
15. Installation Complete—Click Close to quit the installer.
16. Restart the Vantage Transport Service.

Moving the Telestream Receiver to the Interplay Transfer Engine Server

Note: If a Telestream_Receiver.DLL file already exists, always delete it first.

The *Telestream_Receiver.dll* file must be copied to each Transfer Engine you plan to use (those listed in the Primary Workgroup and Other Transfer Managers in WorkGroup list).

Follow these steps to copy the *Telestream_Receiver.dll* file to each Interplay Transfer Engine server you plan to include in Vantage-Avid media processing workflows:

1. In Windows Explorer, browse to the Vantage installation folder (default: *C:\Program Files (x86)\Telestream\Vantage*) and locate the file named *Telestream_Receiver.dll*.
2. Copy this file.
3. In Windows Explorer, navigate to the Interplay Transfer Engine server, open the C:*Windows\sysWOW64* directory and paste the file into the directory.

Repeat this process for every Transfer Engine in your list.

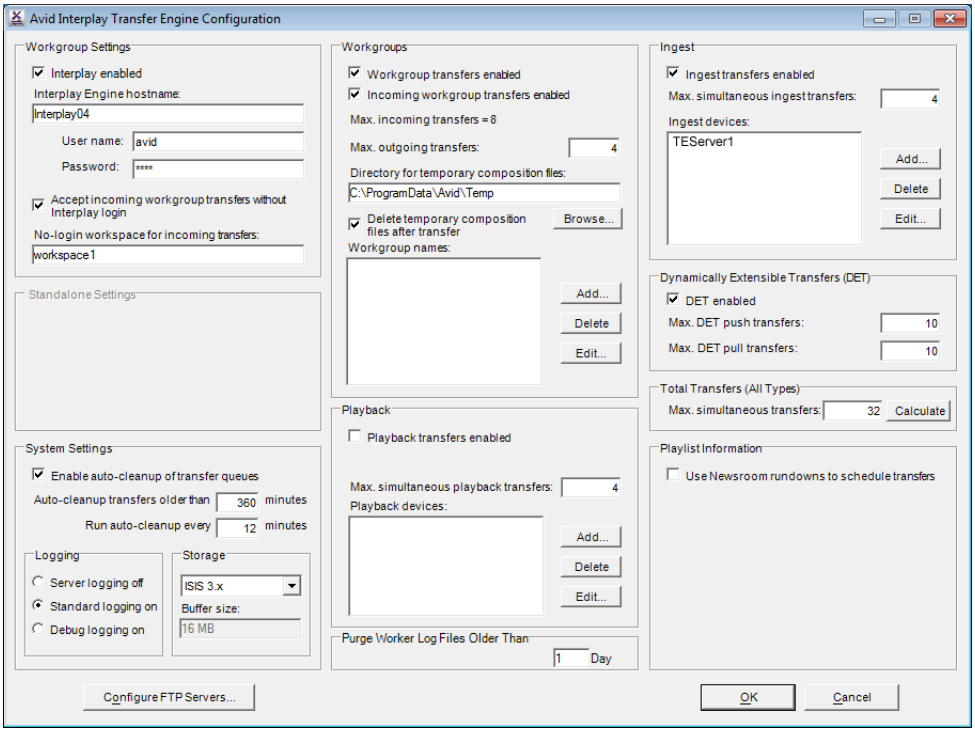
Configuring the Transfer Engine

Note: Be sure to coordinate with your Avid systems administrator to make these changes or restart any computers.

After copying the *Telestream_Receiver.dll* file to your primary Transfer Engine (and other Transfer Engines as appropriate), each Transfer Engine configuration must be updated.

To manage ingest devices when using Interplay Transfer Engine delivery, start the Interplay Transfer Engine Configuration Manager (double-click the desktop icon):

Figure 5. Sample Configuration Window for Transfer Engine



Perform these tasks to configure each Transfer Engine:

- Specifying Interplay vs. Standalone Mode Delivery
- Adding or Editing Ingest Devices
- Deleting Ingest Devices

Specifying Interplay vs. Standalone Mode Delivery

The Transfer Engine provides two methods for media file delivery: Interplay and Standalone Mode Delivery.

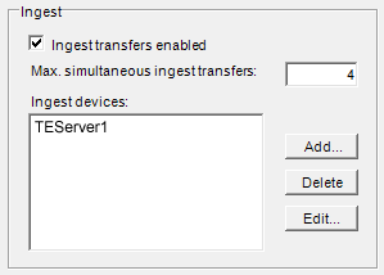
To use the Interplay method, check the Interplay Enabled checkbox in the Workgroup Settings panel in the upper left corner (as shown above) and configure the associated controls appropriately. To use the Standalone Mode Delivery method, uncheck it.

Adding or Editing Ingest Devices

Note: In the main panel, note the Ingest devices list in the top right Ingest panel.

In the Ingest panel, click Add or select an Ingest Device and click Edit to display this dialog:

Figure 6. Adding Ingest Devices to a Transfer Engine



Enter/update the name of the Ingest Device. The Ingest Device name must match the name of the Transfer Engine server.

Save and close the configuration program.

Restart the Interplay Transfer Engine to obtain and publish the new list of Avid ingest devices.

Deleting Ingest Devices

Select the device you want to remove from the list and click Delete to remove it.

Save and close the configuration program.

Restart the Interplay Transfer Engine to obtain and publish the new list of Avid ingest devices.

Configuring the Telestream TransferManager Client

To identify the Transfer Engine servers to the Vantage domain, start the Telestream TransferManager Client. To start the program, double-click the shortcut icon named *TS_TMClientConfig*.

Note: You should have installed this program on the Vantage server in an All-in-One domain, or in a Vantage array on every server running the Vantage Transport Service.

The purpose is to enable the Deploy action to communicate with the required Transfer Engine server or servers during workflow execution. (The Deploy action utilizes the Vantage Transport Service to perform its tasks.)

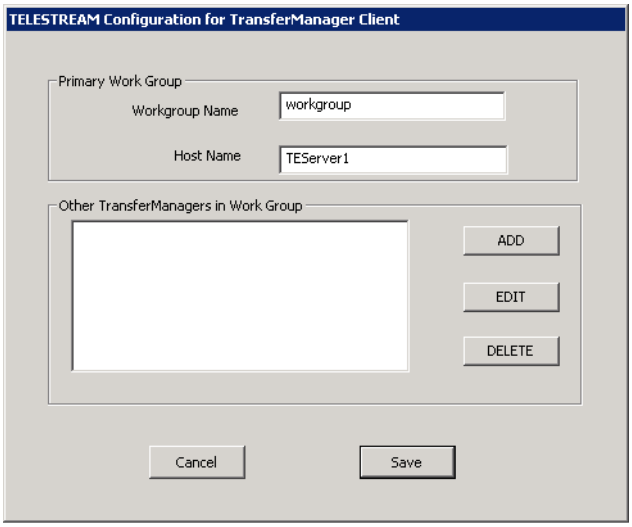
Perform these tasks to configure the Telestream TransferManager Client:

- Configuring the Primary Workgroup
- Managing Multiple Transfer Engine Servers

Configuring the Primary Workgroup

To configure the primary workgroup, follow these steps:

Figure 7. Configuring the Primary Workgroup in the TransferManager Client



In the Workgroup Name field, enter the domain or workgroup name of the Primary Transfer Engine server.

In the Host Name field, enter the host name of the primary Transfer Engine server.

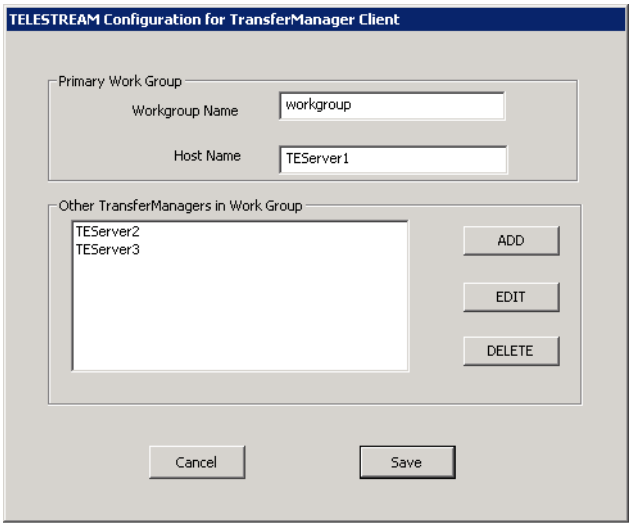
Click Save and close the program.

Managing Multiple Transfer Engine Servers

In an environment with more than one Transfer Engine, the primary Avid Transfer Engine Server must be running in order for secondary servers to work. If the primary server is not running, then media file transfers from Vantage to the Avid Transfer Engine will fail.

Each of the Vantage domain server (or servers) where the Vantage Transport Service is running require that their Transfer Engine Client Configuration identify the primary server as well as each of the secondary servers.

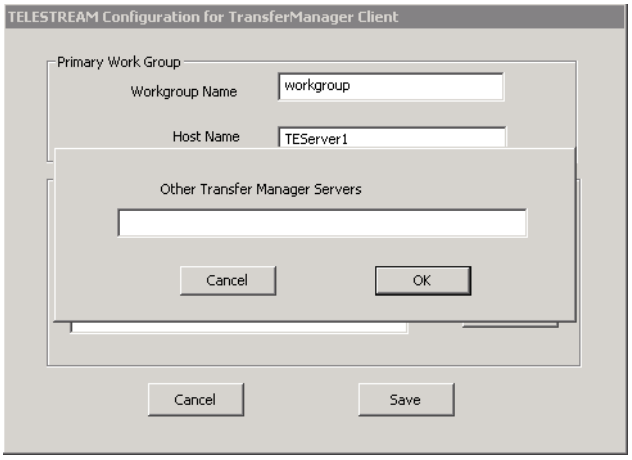
Figure 8. TransferManager Client Main Window



Adding/Editing Secondary Transfer Engine Servers

In each Telestream TransferManager Client in your Vantage domain, click Add or select a Transfer Engine server, and enter/update the name of each secondary Transfer Engine Server. (TE Servers 2, and 3, for example.)

Figure 9. Adding Secondary Transfer Engine Servers to the TransferManager Client



Click Save and close the program.

Deleting Secondary Transfer Engine Servers

Select the secondary Transfer Engine server you want to remove from the list and click Delete to remove it.

Click Save and close the program.

Sharing the Media Output Location

When a Flip action-based workflow encodes media, you can specify where the new files are written. You can write the file to an available Vantage store, a specific Vantage store or folder, or other location, as long as the Telestream Receiver can access the location as a share, with read access.

Figure 10. Specifying the Output Location for Media in the Flip Action Inspector

Upon notification by the Deploy action, the Telestream Receiver reads the media file from the share, using its UNC path. Telestream recommends using either the default Vantage Store (named *VantageStore*) or a specific path you specify. In a default Vantage installation, the default Vantage store folder is at the path: *C:\VantageStore*.

Share the media folder (for example, as *\\Vantage\store* or a share name you choose for your specific path) so that the folder can be accessed the Telestream Receiver in your Avid system. The folder must be given read permission to allow the Telestream Receiver to read files.

Setting up a Vantage Transfer Engine Workflow

For each Transfer Engine you target, you should create a separate Vantage workflow to encode your media and deploy it to a specific destination folder that is monitored by the Telestream Receiver on behalf of the Transfer Engine.

After configuring the workflow, you must activate it before you can start processing media for ingest into your Avid system.

A prototypical Vantage-to-Transfer Engine workflow is presented here. You can use it as a baseline workflow to get started. Here are the typical steps you should take to implement it:

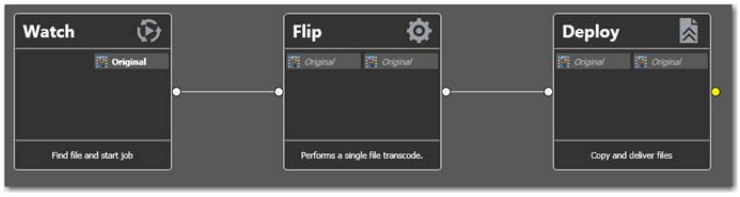
- Prototypical Transfer Engine Workflow
- Configuring the Flip Action
- Configuring the Deploy Action

A Smart SD/HD Transcoding Workflow is also presented for study.

Prototypical Transfer Engine Workflow

Here is a simple prototype workflow, depicted in Figure 11, below. Your workflow of course, should be designed and configured to meet your media processing requirements. The essential actions are the Flip and Deploy actions.

Figure 11. Prototypical Workflow for Transcoding and Deployment to Transfer Engine



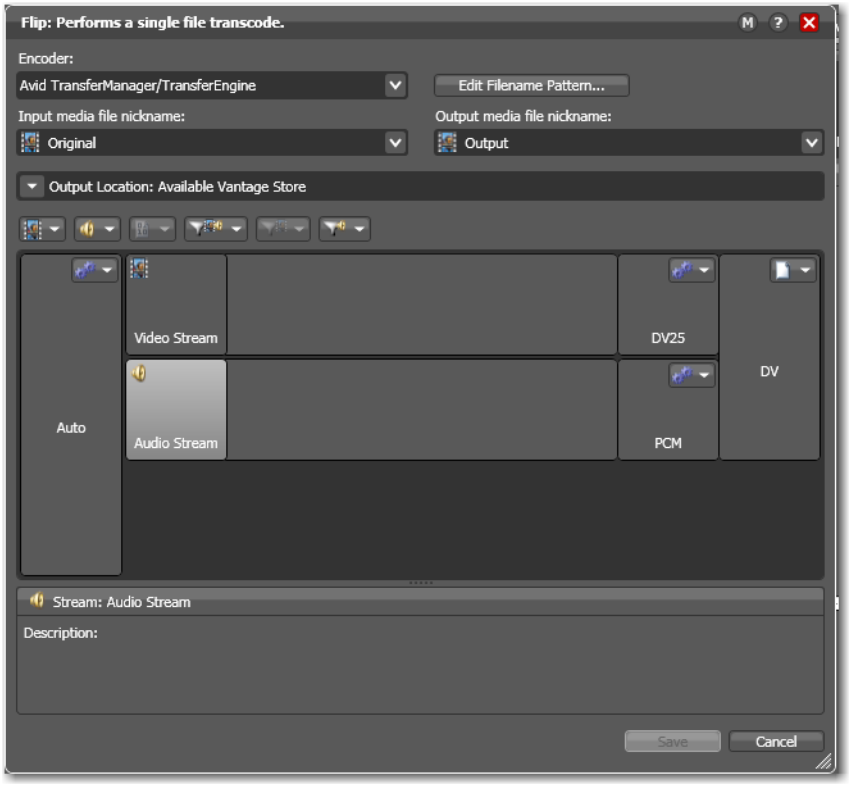
The basic workflow includes a Watch action to pick up new media, a Flip action with the Avid Transfer Manager/Transfer Engine Encoder configured to encode media per Avid requirements, and a Deploy action to deliver the encoded media to the proper location. When the workflow is activated, it polls a directory and—for each new file delivered—it starts a job to process the media through the workflow.

The only requirements for this workflow is that it has a Flip action configured with an Avid Transfer Manager/Transfer Engine encoder, and a Deploy action to deliver the media to the target destination.

Configuring the Flip Action

The Flip action must be configured with the Avid Transfer Manager/Transfer Engine encoder, with specific settings, as shown below in the Flip action Inspector.

Figure 12. Flip Action Inspector



Configure the Flip action as follows:

- *Encoder*—Avid Transfer Manager/Transfer Engine Encoder
- *Input Media File Nickname—Original* or other to match the nickname specified in the Watch action
- *Output Media File Nickname—Output* or other to match the nickname specified in the Deploy action
- *Output Location*—Specified as required for your system. The location must be a share, and accessible as a UNC path by the Telestream Receiver on the target Transfer Engine server (see Sharing the Media Output Location for details).
- *Decoder*—Auto
- *Container & Video Codec*—see Supported Avid Media Formats for details.
- *Audio Codec*—PCM—see Supported Avid Media Formats for details.

Configuring the Deploy Action

In order for the Deploy Action to successfully deliver media to your Transfer Engine, it must be configured with certain settings, as shown below in the Deploy action Inspector.

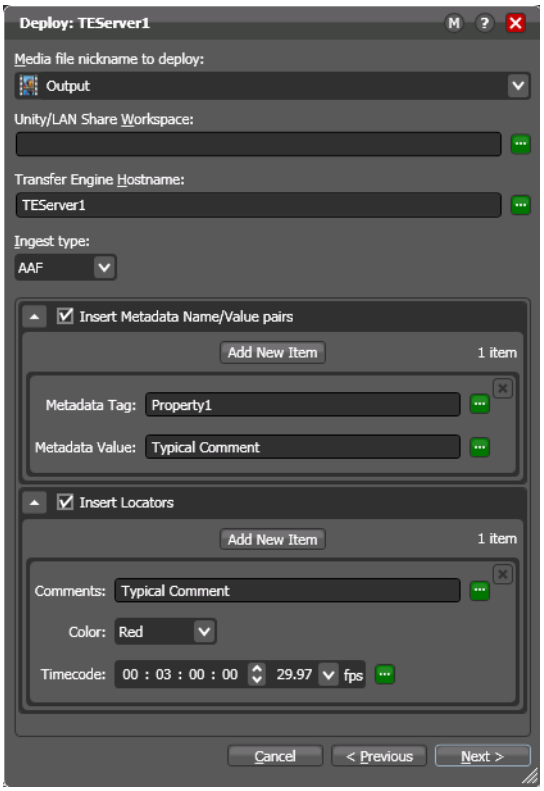
Configure the Deploy action as follows:

In the first panel (Copy and Deliver Files)...

- *Deployment Type*—Avid Interplay Transfer Engine

In the second panel...

Figure 13. Deploy Action Inspector Final Panel



- *Media File Nickname to Deploy*—*Output*, or other to match the nickname specified in the Flip action
- *Unity/LAN Share Workspace*—The name of the workspace that the deployed media should be placed in.
  - Leave blank to deliver to the default workspace that you set in the Transfer Engine Configuration utility under Workgroup Settings (top left)—for example, *Workspace1*—see Figure 5.
  - Enter another workspace here to override the setting in the Transfer Engine Configuration utility's No-login Workspace for Incoming Transfers field for the purpose of delivering media to this workspace.
  - Optionally, bind this setting to a variable to specify the workspace name on a job-by-job basis. An upstream action must extract and supply the workspace name in the Vantage workflow.

- *Transfer Engine Host Name*—The hostname of the server where the primary Transfer Engine/Transfer Manager is running. (Listed in the Ingest Devices list, in the Avid Interplay Transfer Engine Configuration Utility window).
- *Ingest Type*—Specify the format of the output media to be deployed into Avid:

  AAF: Advanced Authoring Format (AAF) is a file format for post production and authoring. It supports audio, video, image, graphics, text, animation, and other forms of media. It also supports metadata that describes how to combine or modify individual sections of media, and supplementary media information.

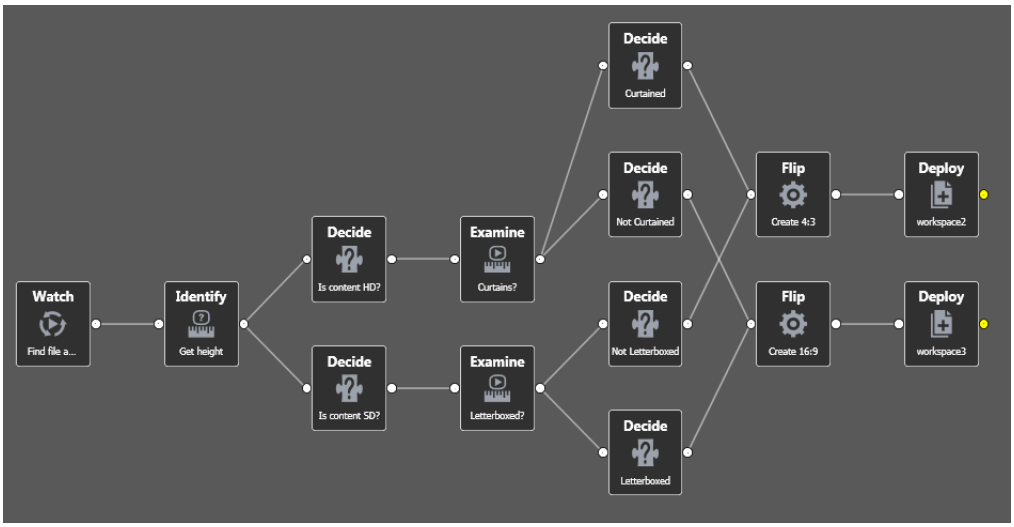
  OMF: OMF Interchange (OMFI) is a platform-independent file format that stores both media (video, audio, graphics, animation) and the information describing how the media is edited together to form a sequence, referred to as a composition.
- *Metadata Tags*—Click Add New Item to create a new metadata item, and insert metadata tags and their values into the media file.
- *Insert Locators*—Click Add New Item to create a new comment locator, and insert a comment into the media file at the specified timecode. These locators display in the timeline and the comments display in the Markers window of the sequence in Media Composer.

Smart SD/HD Transcoding Workflow

By binding the Unity/LAN Share Workspace field to a variable, multiple transcode actions in a workflow (each followed by a Deploy action) can dynamically deliver encoded media to different workspaces. This flexibility makes it easier to process media and automatically deliver it to the proper Avid workspace for further processing.

For example, in a smart SD/HD transcoding workflow you can process and deliver both HD and SD files to different workspaces from a single workflow, on a job-by-job basis.

Figure 14. Smart Avid SD/HD Transcoding Workflow



When you bind the workspace to a variable, you need to specify the workspace name that you want to deliver to on a job-by-job basis. Use an upstream action to supply the workspace name to the Deploy action.

In this example workflow, the Identify and Examine actions determines the height of the video and whether curtains or letterhead are used, and the Decide actions act on SD and HD video, respectively, to route it to either an SD or HD Flip action. After transcoding, each Deploy action delivers the media to the appropriate workspace.

Troubleshooting

If you are having problems ingesting media into Media Composer/NewsCutter from your Vantage workflow, review these tips.

Note: If you are still having problems, contact Telestream Customer Service (Table 1, Telestream Contact Information) or your Avid systems administrator for assistance.

Confirm the following:

- The target Transfer Engine is running.
- The primary Transfer Engine is set and configured in the Avid Transfer Engine Configuration utility as well as the Telestream TransferManager client(s).
- Your Vantage workflow is active in Workflow Designer.
- Your Vantage workflow's Watch action is monitoring the correct folder or share for media that you are processing and sending to the Avid system.
- The Vantage media output location is set to the correct UNC path and that the share is properly configured.
- The Avid Interplay Transfer Client version matches the Telestream installer version.
- The Avid Interplay Transfer Client installed on the Vantage domain server is the 32-bit version.
- The Deploy Action Transfer Engine Host Name matches the value entered in the Telestream TransferManager Client Host Name field.
- The Vantage Transport Service is running.
- Media Composer/NewsCutter is configured to the Primary Transfer Engine. (Settings>Transfer>TMClient.ini (tab).
- The 32-bit Telestream Receiver (*Telestream_Receiver.dll*) for Interplay Transfer Engine V2.7.0 is installed in the correct directory (C:\Windows\SysWOW64 folder).
- Authenticate all servers and workstations in the Avid and Vantage environment (Transfer Engine, Vantage & Media Composer).
- Interplay Delivery:
  - Confirm that the Avid Interplay Transfer Configuration settings are set appropriately for your environment.
  - Confirm that the appropriate ISIS Workspace is mounted.
- Security and firewall settings aren't preventing Vantage domain server access.

Supported Avid Media Formats

The following media formats can be processed by Vantage using the Avid Transfer Manager/ Transfer Engine Encoder. 10-bit mastering-quality video is processed as Full Quality (8-bit) by Vantage.

All formats except for AVC Intra can use Direct Convert encoders.

AVCI Media

Supported audio: Uncompressed 48kHz PCM with 2, 4, 6, 8 or 16 channels, 16 or 24-bit, saved as a WAV file.

Table 1. AVCI 4:2:2 100Mb Video

Format	Rate (fps)	Frame Size
1080i	29.97	1920x1080
1080i	25	1920x1080
720p	50	1280x720
720p	59.94	1280x720

Table 2. AVCI 4:2:0 50Mb Video

Format	Rate (fps)	Frame Size
1080i	29.97	1440x1080
1080i	25	1440x1080
720p	50	960x720
720p	59.94	960x720

DNxHD Media

Supported audio: Uncompressed 48kHz PCM with 2, 4, 6, 8 or 16 channels, 16 or 24-bit, saved as a WAV file.

Table 3. DNxHD Video

Format	Rate (fps)	Mb	Frame Size
1080i	29.97	220	1920x1080
1080i	29.97	145	1920x1080
1080i	25	185	1920x1080
1080i	25	120	1920x1080
1080p	29.97	220	1920x1080
1080p	29.97	145	1920x1080
1080p	25	185	1920x1080
1080p	25	120	1920x1080
720p	59.94	220	1280x720
720p	59.94	145	1280x720
720p	50	185	1280x720
720p	50	120	1280x720
720p	29.97	110	1280x720
720p	29.97	75	1280x720
720p	25	90	1280x720
720p	25	60	1280x720

DV, DVCPro, and IMX Media

Supported audio: Uncompressed 48kHz PCM with 2, 4, 6, 8 or 16 channels, 16 or 24-bit, saved as a WAV file.

Table 4. DV 25Mb Video

Format	Rate (fps)	Frame Size
DV25 SD NTSC	29.97	720x480
DV25 SD PAL	25	720x576

Table 5. DVCPro 25 and 50Mb Video

Format	Rate (fps)	Frame Size
DVCPro25 NTSC	29.97	720x480
DVCPro25 PAL	25	720x576
DVCPRO50 NTSC	29.97	720x480
DVCPRO50 PAL	25	720x576

Table 6. IMX Video

Format	Rate (fps)	Frame Size
IMX 30Mb NTSC	29.97	720x512
IMX 40 Mb NTSC	29.97	720x512
IMX 50 Mb NTSC	29.97	720x512
IMX 30 Mb PAL	25	720x608
IMX 40 Mb PAL	25	720x608
IMX 50 Mb PAL	25	720x608

DVCPro HD Media

Supported audio: Uncompressed 48kHz PCM with 2, 4, or 8 channels, 16-bit, saved as a WAV file.

Table 7. DVCPro HD 100Mb Video

Format	Rate (fps)	Frame Size
DVCPro25 HD 720p	60	1280x720
DVCPro25 HD 720p	50	1280x720
DVCPRO50 HD 1080i	60	1920x1080
DVCPRO50 HD 1080i	50	1920x1080

Sony XDCAM 4:2:2 Media

Supported audio: Uncompressed 48kHz PCM with 8 channels, 16 or 24-bit, saved as a WAV file.

Table 8. Sony XDCAM 4:2:2 50Mb Video

Format	Rate (fps)	Frame Size
Sony XDCAM 4:2:2	60i	1920x1080
Sony XDCAM 4:2:2	50i	1920x1080
Sony XDCAM 4:2:2	60p	1280x720
Sony XDCAM 4:2:2	50p	1280x720

Sony XDCAM 4:2:0 Media

Supported audio: Uncompressed 48kHz PCM with 4 or 8 channels, 16 or 24-bit, saved as a WAV file.

Table 9. Sony XDCAM 4:2:0 Video

Format	Rate (fps)	Mb/sec	Frame Size
Sony XDCAM 4:2:0	60i	35Mb	1440x1080
Sony XDCAM 4:2:0	50i	35Mb	1440x1080
Sony XDCAM 4:2:0	60i	25Mb	1440x1080
Sony XDCAM 4:2:0	50i	25Mb	1440x1080
Sony XDCAM 4:2:0	60i	17.5Mb	1440x1080
Sony XDCAM 4:2:0	50i	17.5Mb	1440x1080

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