Telestream

DIVA

Avid Connectivity and Tools

Release: 9.0

Revision: 1.0

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DIVA Technical Support	Web Site: https://www.telestream.net/telestream-support/diva/support.htm Depending on the problem severity, we will respond to your request within 24 business hours. For P1, we will respond within 1 hour. Please see the Maintenance & Support Guide for these definitions. • Support hours for customers are Monday - Friday, 7am - 6pm local time. • P1 issues for customers are 24/7.
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Preface

DIVA version 9.0 does not support Linux for all components. Therefore, Windows-based Actors must be used for Avid Connectivity Support and the Tape Reading Utility.

Audience

This document is intended for System Administrators, and Users.

Documentation Accessibility

For information about our commitment to accessibility, visit the Support Portal located at https://www.telestream.net/telestream-support/

Related Documents

For more information, see the DIVA documentation set for this release located at:

https://www.telestream.net/telestream-support/diva/support.htm

Document Updates

The following table identifies updates made to this document.

Date	Update
October 2022	Created standalone book for 9.0 release.
April 2023	Updated book from DIVA Core to Content Manager. Updated some terminology that was reverted.
May 2023	Updated Web App term.

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Date	Update
June 2023	Removed all references to TMC (deprecated). Added new information for AWD.
September 2023	Change product name Content Manager to Content Conductor. Publish version 9.0 PDF.
January 2024	Change product name Content Conductor to DIVA. Publish version 9.0 PDF.

Overview

This chapter describes an overview of the Avid Connectivity.

Topics

- Avid Connectivity Overview
- AvidForDIVArchive and Content Conductor Release Compatibility
- AMC (AM Communicator) Overview
- AWD (Avid Workflows for DIVA) Overview

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Avid Connectivity Overview

Avid Connectivity interfaces with DIVA to transfer archival data to and from DIVA in specific formats, specifically MXF (Material eXchange Format), and to enable archiving and retrieving single clips, or a sequence of clips. The Avid Media Services manages all jobs submitted by the Avid GUI (Interplay Access or Media Composer).

Note: TMC (Transfer Manager Communicator) has been discontinued. Avid Workflows for DIVA replaces TMC in DIVA.

The AMC (Archive Manager Communicator) and AWD (Avid Workflows for DIVA) related components are not installed with the main DIVA installation, and is a separate installation process. Two different features can be installed as follows:

- AMC 2.x for AVID Direct ISIS (an Avid Shared Storage System) connectivity, using Archive Manager Engine and DMS Archive API interface.
- AWD Service for AVID Direct ISIS connectivity, using Interplay Engine and Interplay Web Services interface.

Additional installation is also required for both AMC and AWD. This document describes the installation, configuration, and operation of all Avid components.

All operations for the AM Communicator are performed from Avid Interplay, not DIVA.

DIVA includes support for the Avid Web Services API for Archive, Restore, and Partial File Restore of clips and sequences directly from Interplay. Also included is AMC support for Interplay 2.2 and later.

Certain API operations used in Avid Connectivity (such as *GetByFilename* and *DeleteByFilename*) are not supported for complex objects.

Interplay Supported Environments

The following are supported for Avid connectivity and Interplay:

- AMC [2.1]: Interplay 2.2 or later: DIVA Core 8.0 or later
- AWD [1.0]: Interplay 3.6 or later: DIVA Core 8.3 or later

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AvidForDIVArchive and DIVA Release Compatibility

AvidForDIVArchive is compatible with the following DIVA releases:

- The feature AMC 2.1 for direct ISIS is compatible with DIVA Core releases 8.0 and later.
- The feature AWD 1.0 is compatible with DIVA Core releases 8.3 and later.

AMC (AM Communicator) Overview

The AMC (AM Communicator) enables interaction between the Avid Archive Manager solution and DIVA. AMC receives Push, Pull, and Remove jobs from the Avid Media Services and Avid Archive Engine, and translates them into DIVA API calls.

Direct ISIS Connectivity AM Communicator

Using Direct ISIS Connectivity, data is directly read from, and written to, the ISIS server by the Actor using an AVID_DIRECT Server Type. AVID_DIRECT is built on top of the CIFS protocol, and has similar access mechanisms. Therefore Direct ISIS only works with AVID_DIRECT Server Types.

Note: Linux-based Actors do not support UNC paths for CIFS Source Servers and Destination Servers.

The ISIS Client must be installed and configured on each Actor that reads to, and writes from, the ISIS server; otherwise, the Actor cannot access the ISIS Server. The configuration must match the AP (Archive Provider) configuration, and the AVID_DIRECT Server must be configured with proper authentication for the ISIS server.

All Restore jobs from Avid are converted into Partial File Restores. Therefore, AMC never submits full Restore jobs to DIVA, because the Actor requires the complete ISIS path for files. If a full restore is required, Avid sends a Partial File Restore job with [Begin, End] to accommodate the full path requirement.

Metadata files (.AAF) are archived as part of the object (like in Legacy Mode) if the Allow Metadata Archive value is set to Yes. This value is configured in the Archive Manager under Interplay Administrator > Site Settings > Asset Tracking/Archive Settings.

The throughput can be increased using dedicated network adapter cards. Telestream recommends Intel Pro for 1 Gbps, and Myricom for 10 Gbps, for the ISIS server interface on the Actor computers. You can increase overall throughput by increasing the number of Actors, and is limited only by the ISIS server bandwidth. The number of simultaneous jobs that can be submitted by Avid are greatly increased (this value is configurable in amc.conf; the default setting is 100) because AMC and fpdiDET2 are only processing commands.

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- Data flows through a single path using Avid Direct Mode compared to the multiple paths used by a legacy configuration so there are no data bottlenecks.

- The Actor reads and writes data to the ISIS server through the ISIS Client rather than the legacy's fpdiDET2 (AP - Archive Provider).

- All features of the legacy workflows are retained except the data path.

- One AMC, and one Backup AMC, are enough per site.

- AMC can be installed on any computer, and AMC does not need to be on a Actor or archive provider computer (for example, a DIVA computer).

- ISIS Clients installed on all Actors interfacing with ISIS should have separate network adapter card cards to obtain the best throughput.

- All objects archived using Legacy AMC are compatible with both the new AMC, and fpdiDET2.

The following figure demonstrates the standard workflow for AM Communicator Push job (Archive) processing using Direct ISIS Connectivity. See *Direct Connect AMC Workflows* for detailed information.

DIVA_035
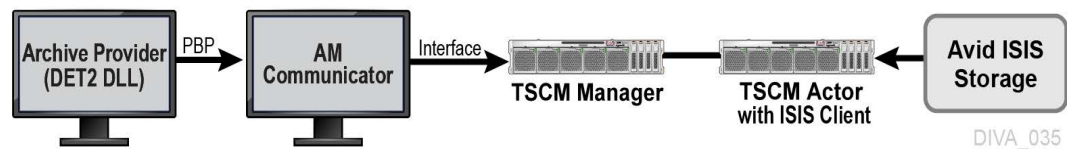
AWD (Avid Workflows for DIVA) Overview

AWD is a Windows executable running as a service. Its role is to link the Avid environment, that is, Interplay Engine (via Interplay web services) and Avid Shared Storage (ISIS or Nexis) with the DIVA (via DIVA Rest API).

Users can work with Avid to archive Avid assets or restore media files to/from DIVA, by dropping assets to specific folders monitored by AWD. Other working scenario are also possible.

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Avid Connectivity and AvidForDIVArchive Installation

Installation of Avid Connectivity is straightforward. Install Avid Connectivity using the installation wizard as follows:

1. Double-click the provided installation executable file to begin the Avid Connectivity installation program.

2. The Choose Components screen is displayed first. Select the check boxes for the desired feature(s) and click Next.

3. Next, identify the Installation Location. Telestream recommends installing in the default folder. Enter the full path in the Destination Folder field (or use the Browse button to find it) if the default folder must be changed.

4. When satisfied with the installation location, click Install to proceed with the installation. Clicking Show Details enables viewing of the details of the installation process.

5. When the wizard displays the final window, click Close to complete the installation.

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AMC Installation, Configuration, and Operations

This chapter describes installation, updating, and operations of AMC (AM Communicator) and includes the following information:

Topics

- Installation Overview
- Installing AM Communicator
- Command Line Options
- Configuring AMC for Direct ISIS/Nexis Connectivity
- Avid Archive Manager Updater Tool
- Operations
- Workflows

Installation Overview

Separate configuration stages are required for DIVA, AMC, and Avid Archive Manager servers to configure interaction between DIVA and Avid Archive Manager using the AM Communicator.

AMC can be installed on any computer, provided the computer is accessible through the network from the Actor, DIVA, and Avid Archive Manager servers. This option enables installation of AMC on its own computer, separate from any specific server, if desired.

The following definitions apply when the term or acronym is used within this chapter:

- $DLL_HOME

  This variable identifies the folder on target Avid server where the DET2.DLL is installed.

- $AMC_HOST

  This variable identifies the DNS (Domain Name Service) name or IP address of the computer where AM Communicator is installed.

- $DIVA_HOME

  This variable identifies the folder created on the target computer during the installation.

- $AMC_HOME

  This variable identifies the AM Communicator folder on the target computer.

- $AMC_INSTALLATION

  This variable identifies the AM Communicator folder created during AvidForDIVArchive, with the AMC feature installation as follows:

  - $DIVA_HOME/AMCommunicatorI22 for Interplay 2.2 and later.

Installing AM Communicator

Use the following procedure to install AM Communicator (assuming the AMC feature was selected when AvidForDIVArchive was installed):

1. Copy all files from the $AMC_INSTALLATION/bin folder to the $AMC_HOME folder on the Target Server computer.

2. The default configuration file is located in the $DIVA_HOME/conf/amc folder. Rename the file named amc.conf.ini to amc.conf.

   If multiple AMC instances are required to run on the target computer, add the corresponding service name to the file name. The service name must match the SERVICE_NAME parameter value from the AMC configuration; that is, rename the file to amc_$SERVICE_NAME.conf.

3. Edit the AMC configuration file using a plain text editor (for example, Notepad or Notepad++) to modify any required parameter values. See *AMC Configuration Parameters* for detailed parameter descriptions.

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Command Line Options

AM Communicator can be started either as a Windows system service, or as a console application. Telestream recommends running AMC as a system service in production environments. However, console mode is useful when performing troubleshooting activities.

If two AMC instances must be run on a single computer, the fully qualified configuration file path must be specified in the command-line using the `-conf` (or `-f`) option described in the following list.

The general syntax to start AMC is as follows:

`AMCService {options_from_the_following_list}`

For example, the following command starts an AMC instance using parameters from the configuration file named amc_example.conf, and runs in console mode (the option). The SERVICE_NAME parameter value must be set for this sample. See *AMC Configuration Parameters* for all AMC parameters.

`AMCService -d -conf ../conf/amc/amc_example.conf`

AM Communicator supports the following command-line options:

- `install` or `-i`

  This option installs AMC as a Windows service using the provided command-line options as the default parameters. This option will not start the service, it only installs the service.

- `uninstall` or `-u`

  This option removes AMC from the Windows services. This option will stop the service automatically if it is running.

- `debug` or `-d`

  This option starts the AMC service in console mode. The console mode provides additional information as standard output.

- `version` or `-v`

  This option displays the AMC release level, and then exits.

- `help` or `-h`

  This option displays use information, and then exits.

- `conf` or `-f`

  This option specifies a fully qualified configuration file path for AMC to use instead of the default configuration file. You use this option when running multiple instances of AMC on a single computer (as shown in the previous example).

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Configuring AMC for Direct ISIS/Nexis Connectivity

Caution: Never change any Category parameters, for example, DIVA_DEFAULT_CATEGORY when the system has been used previously. This will affect all Restore operations.

The default configuration file named amc.conf.ini is delivered with specific parameters Direct Connect. The file must be configured with the appropriate parameters. If an upgrade is being performed from a previous release, copy amc.conf and then add any new parameters for the release to the new file.

Installing the ISIS Client

The newest ISIS client must be installed on the Actor computer that interfaces with the ISIS server. Execute the ISIS client installation file, and install the program with the default settings.

If the ISIS server is on the same subnet as the Actor where the ISIS client is installed, the ISIS client will automatically detect the server. Right-click the server name in the top Systems panel, and select Connect from the resulting context menu to connect to the server.

If the ISIS server is on a different subnet than the Actor computer where the ISIS client is installed, use the following procedure to add the server to the ISIS client interface:

1. Open the ISIS client and click the Add Server icon in the icon bar (it looks like a globe). The Remote Hosts dialog box appears.

2. Enter the IP address of the remote ISIS server in the field and click + to add the host name to the Host panel.

3. Confirm that the server has connectivity, and has been added, by clicking the Network icon on the icon bar (the icon looks like two computers connected together).

   A window is displayed showing the added server on the network. Confirm that the Enabled check box is selected to use the server.

4. Right-click the server name in the top Systems panel, and select Connect from the resulting context menu to connect to the server.

Configuring AM Communicator Servers

Use the following parameters when adding a server for use with Direct ISIS AM Communicator.

The Server Root Path value must be kept empty for Direct ISIS. There is only one Server type that is AVID_DIRECT for all Actors. Multiple Actors do not require META-SOURCE.

All Actors with an ISIS/Nexis Client and the AVID_DIRECT Server must be in a single Network so that other (Legacy AMC) Actors are not used with this Server.

The other parameters are set as normal for the environment and operations.

- Source Name

  This parameter identifies the AMC Server name. The name must either match the value of the DIVA_SRCDST parameter from the AMC configuration, or the partition parameter value from the Archive Profile in Avid (depending on configuration).

- Source Type

  This parameter identifies the Source Server Type and must be set to *AVID_DIRECT* for Direct ISIS AM Communicator operations.

- **Connect Options**

  The Connect Options field must include the login and password for the Server ISIS server.

  An example entry in this field might be `-login amcdirect -pass is-admin`.

  The amc.conf configuration file must be configured with all required parameters. Important parameters for Direct Connect configuration include the following:

  – AM_MAX_CONNECTIONS - the default is 100.

  – DIVA_SRCDEST - this is a type of AVID_DIRECT.

  – DIVA_DEFAULT_CATEGORY

  Set all other parameters the same as a Legacy configuration.

Note: The AM_TIMEOUT parameter is no longer used for status because the status is not monitored by AMC. The AM_TIMEOUT parameter will continue to monitor jobs until they are canceled or terminated.

See *AM Communicator Default Configuration File* for the default, delivered amc.conf file.

Configuring the Avid Archive Manager

The Push, Pull, and Remove jobs are initiated, and processed by, three separate Avid services. The services normally reside on different computers. In a typical configuration, Archive and Restore services are installed on the Archive Provider server, and the Archive Engine server handles Remove services.

The DET2 DLL must be installed on the servers where the corresponding Avid services reside to enable Archive, Restore, Partial File Restore, and Delete functionality.

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The following procedure is identical for all Avid servers (assuming the AvidForDIVArchive AMC feature was installed on the target server):

1. Copy the fpdiDET2.dll, and all other files, from the $AMC_INSTALLATION/fpdiDET2 folder to $DLL_HOME folder on the target Avid server. Telestream recommends using the default C:\DET2\fpdiDET2 path.

2. If the selected $DLL_HOME folder is different from the recommended default path, the am_regkey.reg file's VendorFolder Key Value must be edited so it matches the $DLL_HOME value.

3. Merge the am_regkey.reg file into the Windows Registry.

4. Change the AMC parameter value in fpdiDET2.xml to define the correct AM Communicator network address using the format {IP}:{Port}.

   – IP

     This parameter is the IP address of the AM Communicator Listener. This must be consistent with the value of the AM_IP parameter from the AMC configuration file.

   – Port

     This parameter is the port number for the AM Communicator Listener. This must match the value of the AM_PORT parameter from the AMC configuration file.

5. If required, set the optional SOCKET_BUFFER_SIZE parameter in fpdiDET2.xml to enable TCP/IP Scaling.

   This parameter value specifies the socket receive and send buffer sizes in kilobytes. The value must match the value of the AM_SOCKET_BUFFER_SIZE parameter from the AMC configuration.

   Leave this parameter set to the default value if TCP/IP Scaling is not configured for your system.

6. The Archive and Restore Provider services must both be restarted for these changes to take effect. Telestream also recommends restarting the Avid Archive Engine server.

Both the Archive and Restore profiles must be defined using the Avid Interplay Media Services and Transfer Status utility to submit Archive, Restore, or Partial File Restore jobs to the AM Communicator.

The partition parameter value defines either the Destination Server tape group or disk array name, or the Server Name in DIVA. Creation and use of multiple Archive profiles enables archiving to different tape groups, disk arrays, or both.

Using the partition parameter as the Server Name enables the creation of Storage Plans based on the Server in DIVA. You can also use the Storage Plan as media.

Changing or adding Archive profiles does not require AMC Service reconfiguration or restarting.

If the partition parameter value is not specified, or a job is submitted with no profile selected, AMC uses the tape group, or disk array, and Server Names from its configuration file.

Note: All other parameters in the Archive and Restore profiles depend on your specific requirements and are left to your discretion.

Avid Interplay 1.4 and later can be configured to store AAF (Advanced Authoring Format) Metadata with the media files. This configuration enables duplicate media files in a single archive.

Use the following procedure to enable these options:

1. Open the Avid Interplay Administrator application.

2. Connect to the AvidAM database by clicking the name in the navigation tree on the left side of the screen.

3. Click the Asset Tracking/Archive Settings link.

4. Select the value for the options in the Archive and Restore Settings section of the screen.

   Enabling the Allow duplicate media file(s) option consumes more storage space in DIVA, but generally decreases the time required for archived object restoration.

   In order to archive meta-data files (.AAF) as part of the object, select the setting for Allow Metadata Archive option parameter to Yes. This requires updating the fpdi-DET2.xml file for NETWORK_STORAGE_PATH, which allows the Archive Provider to place the .aaf file in a folder where Actor can connect and add it to the object.

   Telestream recommends enabling these two parameters if using these objects with Content App workflows to create proxies by transcoding clips/sequences. Moreover, the Allow Metadata Archive option can be mandatory, following the AMC specific option in the configuration file.

5. Click Apply Changes to save the changes.

Avid Interplay 1.6 and later can be configured to enable Best Effort Restore. When the Best Effort Restore option is enabled, AMC attempts to restore as many media files as it can, and reports an error only if cannot restore any files at all.

Caution: **It is recommended to disable Best Effort Restore because the Avid Interplay Media Services, and Transfer Status GUIs, do not show partially restored, and completely restored clips and sequences differently. As a result, it may appear that some content is successfully restored while it actually is not.**

Use the following procedure to enable Best Effort Restore:

1. Open the Avid Interplay Administrator application.

2. Connect to the AvidWG database by clicking the name in the navigation tree on the left side of the screen.

3. Select the check box next to Use best effort restore option to enable the function. Deselect the check box to disable the function.

4. Click Apply Changes to save the changes.

Avid Archive Manager Updater Tool

The AM Updater is used to be able to migrate the AAF files into the AM (Archive Manager) Database. The AM Database is needed to be able to initiate restores from Avid using AMC.

The AMUpdater application is a migration/utility tool designed to import AAF metadata files into the Avid Interplay | Production Archive Engine database. The primary scope is to import the AAF files generated by Flashnet in a scenario without Archive Engine into the database of a new fresh installed Archive Engine.

Notes: In cases where the AAF has not been provided with a Flashnet IPWS archive, restore using Interplay is not possible. A destination located on the ISIS/NEXIS available to the media indexer must be added to the DIVA application. Manual restores of these archives/objects can then be restored to the folder, and the Media Indexer will pick up the media as if restored via Avid.

Partial File Restore support for assets archived using Flashnet IPWS will not be available due to incomplete archive information presented in the .aaf files at the time of archiving (a limitation of IPWS). Partial File Restore of subsequently archived AMC-DIVA assets will be available.

System Requirements

The following are the minimum requirements to run the AM Updater Tool:

- Windows (64-bit)
- 64-bit desktop or server
- .NET framework release 4.5 or later

Installation and Configuration

Use the following procedure to install and configure the AM Updater Tool:

1. Copy the unzipped package to a folder on the local disk.

2. Configure the tool by updating the xml configuration file AMUpdater.exe.config with the actual values in the appSettings section.

   In addition to Avid Interplay | Production Web Services settings (address, port, workgroup, user name and password), the following specific application settings must be configured:

   – AMUpdater.EnableAvidAMUpdate

   This is a Boolean switch to choose between the effective import (true) and the simulated import (false). In the second case the AAF files are processed without updating the AE database; this option can be useful for detection of invalid AAF files prior import.

– AMUpdater.AvidAMFolder

The destination folder in Avid AM as the target for the imported assets. In the case of multiple target folders it is the base name for all the target folders. The imported assets are evenly distributed between the target folders.

– AMUpdater.AvidAMFolder.Count

The number of destination folders in Avid AM. The default is one (a single target folder with the given name). When the option is for multiple target folders the name of the folders are composed by adding a numeric suffix to the base name. If multiple target folders are created (the automatic creation is off), the manual creation of target folders must follow the same pattern for name.

– AMUpdater.AvidAMFolder.CreateIfNotExists

This is a Boolean switch requesting the automatic creation of the target folders in case they do not exist. If the switch is off (false) then each target folder must exist in Interplay and must be manually created before running the application; otherwise the import will fail. If the switch is on (true) then each target folder will be created by the application unless it already exists.

– AMUpdater.AAF.SkipForAMA

This is a Boolean switch requesting to ignore the AMA clip assets. This option should be used for analysis purpose only; it is not recommended in a production migration as it can lead to ignoring valid clips.

– AMUpdater.AAF.SkipForSequence

This is a Boolean switch requesting to ignore the sequence assets. It can be used in a multiple phase import scenario (see also the complement *AMUpdater.AAF.SkipNotSequence*). Note when this option is active it implies and overrides AMUpdater.AAF.File.SkipForSequence.

– AMUpdater.AAF.SkipNotSequence

This is a Boolean switch requesting to ignore all but sequence assets. It can be used in a multiple phase import scenario (see also the complement *AMUpdater.AAF.SkipForSequence*). Note when this option is active it implies and overrides AMUpdater.AAF.SkipForAMA.

– AMUpdater.AAF.File.SkipForSequence

This is a Boolean switch requesting to ignore the explicit set of the media files belonging to a sequence. It can be used to minimize the overall import duration. Most parts of these files are assumed to be imported using the referred master clips. When this option is active the computed clips for the rendered effects are not imported; the effects must be re-rendered again after restore. Note that this option can be used in a multiple phase import scenario (see also *AMUpdater.AAF.SkipNotSequence*).

– AMUpdater.AAF.File.SkipForWellKnownInvalidPath

This is a Boolean switch (that applies to any kind of asset) requesting to ignore the specific media files having an invalid file path in AAF. These kinds of files cannot be set into Avid AM and trying to do so will always generate errors for the files in question.

3. Configure the logging by updating the system.diagnostics section of the configuration file:

The application generates logs. These logs trace the steps of the AMUpdater execution. The file path of the log can be set by updating the initializeData value. The path must exist and must be accessible; otherwise the log is off.

The log granularity respects the switch setting. Full logging details can be obtained by changing the appTraceSwitch switch value to 4 (Verbose) while the value of 0 (Off) disables the log.

Note: After the migration process is complete, Telestream **strongly recommends** that you uninstall the application by removing it from the computer. The process of importing AAF files should not be used on a regular basis due to the risk of affecting the database integrity.

Usage

After updating the configuration file with the Interplay | Production and application specific settings, run *AMUpdater AAF-Directory* at the command prompt where AAF-Directory is a folder containing (in its sub-folders) the hierarchy the AAF files to be imported

Operations

All operations for the AM Communicator are performed from Avid Interplay, not DIVA.

Archive Operations

You use the following procedure to perform Archive operations using AM Communicator:

1. Open the Avid Interplay Access application.

2. Select the required clip.

3. Right-click the clip, and select Archive from the resulting context menu.

   The Archive dialog box will be displayed.

4. Select the user profile from the User Profile list.

5. Click OK to begin the Archive operation.

You can check the status of the job using the Avid Interplay Media Services window.

Restore Operations

You use the following procedure to perform Restore operations using AM Communicator:

1. Open the Avid Interplay Access application.

2. Open the Archive folder in the navigation tree on the left side of the screen.

3. Select the archived object requiring restoration.

4. Right-click the clip and select Restore from the resulting context menu.

The Restore dialog box will be displayed.

5. Select the user profile from the User Profile list.

6. Click OK to begin the Restore operation.

You can check the status of the job using the Avid Interplay Media Services window.

Delete Operations

You use the following procedure to perform Delete operations using AM Communicator:

1. Open the Avid Interplay Access application.

2. Open the Archive folder in the navigation tree on the left side of the screen.

3. Select the archived object requiring deletion.

4. Right-click the clip and select Delete from the resulting context menu.

The Delete dialog box will be displayed.

5. Select All.

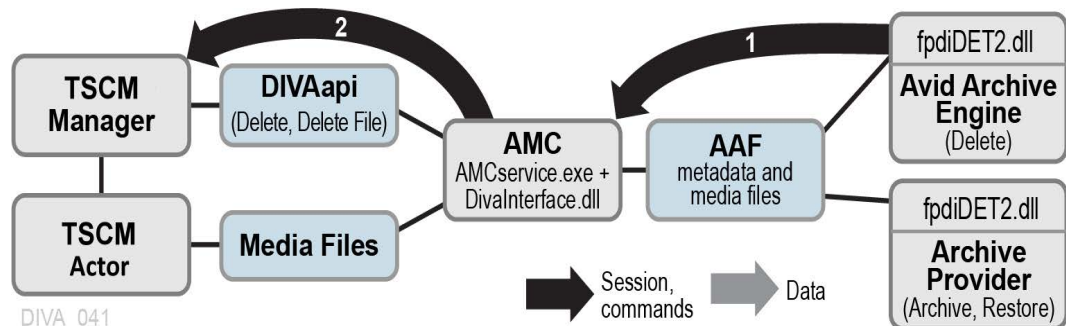**6.** Click OK to begin the Delete operation.

Workflows

This section identifies the various AMC workflows.

Direct Connect AMC Workflows

The following figures are examples of standard Direct ISIS AMC workflows for various jobs (Archive, Restore, and Partial File Restore), followed by a description of the sequence of events for each job.

AMC Delete Workflow

When a required Delete operation is identified by AMC, the general Delete workflow is as follows:

1. The Avid Archive Engine sends a Delete command to the AMC service.

2. The AMC service notifies DIVA that a delete is required, and then DIVA processes the job.

Direct Connect AMC Archive Workflow
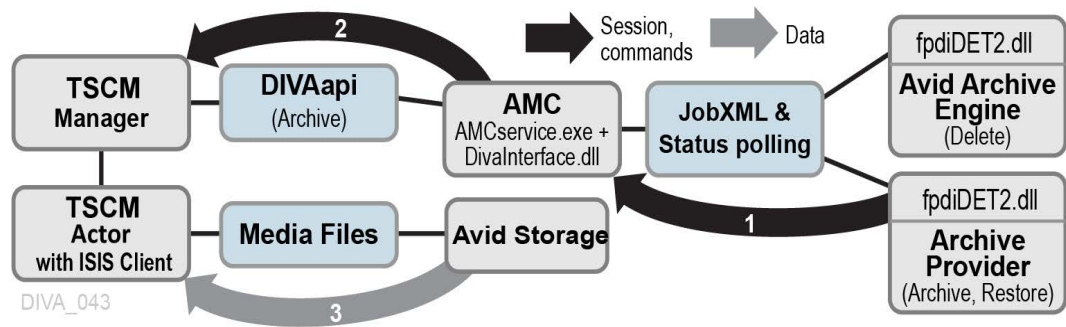
The Archive workflow is as follows:

1. The Media Services Application submits a JobXML to the Archive service.

    a. The Archive Service loads the fpdiDET2.dll and DET2 calls provided.

    b. The fpdiDET2 uses the Avid Archive SDK for this purpose.

    c. The fpdiDET2 connects to AMC, and then submits the Job XML.

2. AMC receives the command, and then receives the Job XML from fpdiDET2.

3. The Job XML is parsed and a list of all files, and their details, is constructed.

4. AMC confirms whether the clip (or sequence of clips) is part of any existing object, determines if deletion is required (based on the configuration), and then sends the Archive job to DIVA.

5. DIVA processes the jobs, and then forwards all necessary information to the Actor (using the ISIS/Nexis Client).

6. The Actor then archives the objects directly from the ISIS server.

Direct Connect AMC Restore / Partial File Restore Workflow
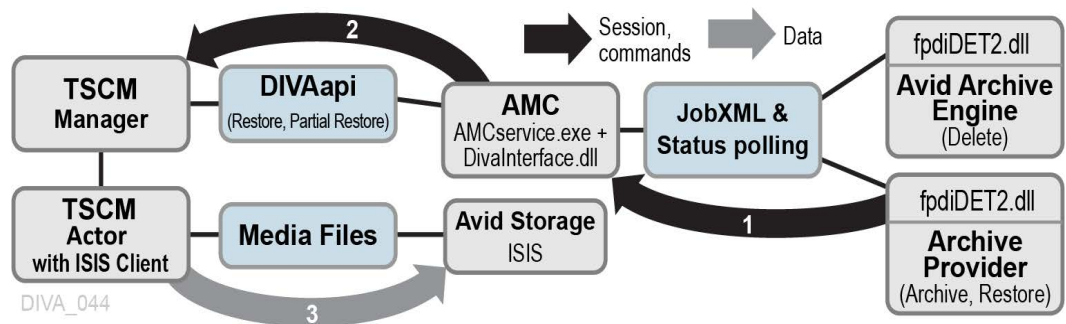
The Restore workflow is as follows:

1. The Media Services Application submits a JobXML to the Restore service.

   a. The Restore service loads the fpdiDET2.dll and DET2 calls provided.

   b. The fpdiDET2 connects to AMC, and then submits the JobXML.

2. AMC receives the command, and then receives the Job XML from fpdiDET2.

3. The Job XML and fpdiDET2 provide AMC with the file path and MOB ID to construct the DIVA job.

4. AMC searches all categories, identifies a list of objects to Restore, and then sends the Restore job to DIVA.

5. DIVA notifies the Actor of the job, and then the Actor proceeds to restore the objects directly to the ISIS/Nexis server.

AMC Configuration Parameters

Topics

- AM Communicator Configuration Parameters
- AM Communicator Default Configuration File

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AM Communicator Configuration Parameters

This section identifies the AM Communicator parameters located in the AMC configuration file. Any parameter not specifically mentioned in the following table is used solely for debugging purposes and should not be modified from its default value.

All listed parameters must be defined even if the default values are not provided in the configuration file.

All IP addresses mentioned in this section can be replaced by corresponding DNS names, provided the DNS service functions properly. If the Listener's IP address has the default value 0.0.0.0, then AM Communicator listens to all configured network interfaces on the given computer.

Parameter	Description	Default Value
SERVICE_NAME	Specifies the name of the AMC service. This option is required to run multiple AMC instances on a single computer. If not specified, the default service name, *DIVA AMCommunicator*, is used.	DIVA AMC
AM_IP	Specifies the IP address of the AM Communicator PBP (Play Back Protocol) Listener.	0.0.0.0
AM_PORT	Specifies port number of the AM Communicator PBP Listener	6101
AM_TIMEOUT	Specifies the time (in seconds) that AM Communicator waits for a connection from the Actor.	30
AM_MAX_CONNECTIONS	Specifies the maximum simultaneous number of jobs submitted by Avid.	100
AM_BUFFER_SIZE	Specifies the size of the network I/O Buffer in kilobytes. The valid value range is 8-2048 kilobytes. Telestream recommends keeping the default value for environments with high speed networks.	2048
AM_SOCKET_BUFFER_SIZE	Specifies the socket receive and send buffer sizes in kilobytes. If set to 0, the system default values are used. You can use this parameter to enable TCP/IP scaling if it is supported by the installed hardware and operating system.	0

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Parameter	Description	Default Value
AM_SOCKET_LINGER	Identifies the maximum time (in seconds) the FTP data socket remains open during a Socket Close call to enable sending of queued data.	1
AM_TREAT_STAGING_AS_ERROR	Sets the behavior of restoring from a Deep Cloud Archive Tier. Instead of waiting for the download to complete (default), this parameter set to 1 indicates to abort the restore job and provides the estimated retrieval duration.	0
AM_IS_AAF_REQUIRED	When set to 1 (default), the archiving request from Avid must contain the AAF metadata file, and `Allow Metadata Archive` in the Avid Archive settings must be set accordingly.	1
AM_OPTIMIZE_FOR_MIGRATION	Notifies AMC to restore the content in Single File Per Object Mode before searching for objects by file name. You should set this parameter to 1 only when content archived in Single File Per Object Mode is used; that is, most often to speed up content migration to Multiple File Per object format.	0
AM_READABLE_NAMES	When set to 1, the original clip or sequence name is used as the object name rather than the Metadata MOB ID. This parameter does not affect Single File Per Object Mode.	0
AM_OVERWRITE	Identifies whether AMC attempts to delete an existing object, or returns an error if an object with the same name already exists in DIVA. This parameter does not affect Single File Per Object Mode.	0

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Parameter	Description	Default Value
DIVA_MANAGER_ADDRESS	Specifies the IP address of DIVA where AM Communicator sends jobs. You can specify multiple IPs separated by commas. AMC attempts to connect to the second IP if it can't connect to the first, etc. You must configure the same port number on all DIVAs.	localhost
DIVA_MANAGER_PORT	Specifies the DIVA port where AM Communicator sends jobs.	9000
DIVA_REQUEST_RETRY	Specifies the number of reconnect attempts made if a job sent by AM Communicator fails due to a lost connection with DIVA. Telestream recommends leaving this value at the default setting.	1
DIVA_MONITOR_INTERVAL	Specifies the job status polling interval (in seconds).	10
DIVA_SRCDST	Specifies the name of the AMC Server configured in DIVA.	
AM_CATEGORY_DELIMITER	Specifies the delimiter separating the base Collection from the appended resolution, and optional index. Changing this parameter after it has been set may prevent previously archived objects from being successfully restored.	~
AM_CATEGORY_IGNORE_LIST	Specifies a comma separated list of resolution values that do not affect object Collection selection.	Metadata, PCM, WAVE, AIFC, MPEG1Layer2
AM_CATEGORY_MIXED_RESOLUTION	Specifies a special resolution value to construct the Collection for multi-resolution content. Telestream strongly recommends keeping this parameter value empty if AMC is upgraded from an earlier implementation.	
DIVA_DEFAULT_CATEGORY	Specifies the base Collection of objects created by AM Communicator.	
DIVA_ARCHIVE_PRIORITY	Specifies the priority of jobs initiated by AM Communicator.	-1

Parameter	Description	Default Value
DIVA_ARCHIVE_QOS	Specifies the value of the Quality Of Service parameter for Archive jobs initiated by AM Communicator.	0
DIVA_RESTORE_QOS	Specifies the value of the Quality Of Service parameter for Restore, and Partial File Restore jobs initiated by AM Communicator.	0
PARTITION_IS_MEDIA	When set to 1, the partition parameter from the Archive Profile specifies the Destination Server media. When the value is set to 0, the partition parameter value specifies the Server name.	1
DIVA_ARCHIVE_MEDIA	Specifies the name of the media where objects are archived. Use this parameter in configurations where the partition parameter value identifies the Server, and when the archive is submitted with no profile selected.	

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AM Communicator Default Configuration File

The following file is the default AMC configuration file delivered with the AvidForDIVArchive installer, and is named amc.conf.ini. See the previous section for parameter descriptions and default values.

```
#########################################
# AM Communicator network interfaces
#########################################

# AMC service name
SERVICE_NAME =

# AMC listener ip and port (default 6101)
AM_IP =
AM_PORT = 6101

# Time in seconds AM Communicator waits
# for connection from Diva Actor
AM_TIMEOUT = 14400

# Network I/O buffer size in kilobytes
AM_BUFFER_SIZE = 2048

# Socket receive and send buffer sizes in kilobytes
# If set to 0 system default values are used
AM_SOCKET_BUFFER_SIZE = 0

# Maximum time in seconds FTP data socket remains open
# on socket close call to enable sending of queued data
AM_SOCKET_LINGER = 1

# Maximum simultaneous number of requests submitted by AVID
# default is 100
AM_MAX_CONNECTIONS = 100

# Request progress polling interval with DIVA
# in milliseconds
AM_DIVA_PROGRESS_POLLING_INTERVAL = 1000


# Hints AMC to restore content in single file
# per object mode before searching for objects
# by file name
AM_OPTIMIZE_FOR_MIGRATION = 0

# Maintain up to the specified maximum number of simultaneous partial
# restore requests for an Avid sequence once submitted to DIVArchive.
# If one or more requests are aborted/cancelled/complete, AMC will
# continue to submit additional partial restore requests until the
# batch size is reached or there are no more requests left to submit.
AM_MAX_PARTIAL_RESTORE_BATCH_SIZE = 2

# Behavior of restoring from Deep Cloud Archive Tier.
# Instead of waiting for download to complete (default),
# this option indicates to abort the restore job
```

```
# and provide the estimated retrieval duration.
# The Avid job must be retried at a later time to complete.
AM_TREAT_STAGING_AS_ERROR = 0
AM_IGNORE_BEST_EFFORT_RESTORE_IF_STAGING_AS_ERROR = 1

###########################################
# Parameters from the block below affect
# only multiple files per object modes
###########################################

# Indicates whether archiving request
# must contain the AAF metadata file.
# Note: Allow Metadata Archive in the Avid Archive Settings
# must be accordingly set.
AM_IS_AAF_REQUIRED = 1

# Indicates whether existing DIVA object
# is deleted as a result of archiving an
# object under the same name
AM_OVERWRITE = 0

# Indicates whether metadata mob id or
# clip/sequence name is used as DIVA
# object name
AM_READABLE_NAMES = 0

# Delimiter used to separate default category from
# appended resolution and optional index
AM_CATEGORY_DELIMITER = ~

# A comma separated list of resolution values that
# do not affect object category selection
AM_CATEGORY_IGNORE_LIST = Metadata, PCM, WAVE, AIFC, MPEG1Layer2

# A special resolution value used to construct
# category for multi resolution content
AM_CATEGORY_MIXED_RESOLUTION =

# A comma separated list of category values which need to be searched
# for restore/partial restore operations. This parameter can be used when
different categories
# are used with different AMCs and if we need to allow each AMC to restore/
partial restore content
# archived through other AMCs. If this parameter is not used, AMC can only
restore/partial restore
# from category configured with DIVA_DEFAULT_CATEGORY parameter.
# By default AM_CATEGORY_SEARCH_LIST is empty.
AM_CATEGORY_SEARCH_LIST =

###########################################
# Diva connectivity parameters
###########################################

# A comma separated list of Diva Manager
# IPs/DNS names AMC tries to connect to
DIVA_MANAGER_ADDRESS = localhost
```

```
# Diva Manager port
DIVA_MANAGER_PORT = 9000

# Number of retry attempts made when
# connection to Diva Manager fails
DIVA_REQUEST_RETRY = 1

# Request archive/restore status polling interval
# in seconds
DIVA_MONITOR_INTERVAL = 10


#########################################
# Diva request parameters
#########################################

# AMC source name in DIVA
DIVA_SRCDST =

# Category set for archived objects
# in single file per object mode
DIVA_DEFAULT_CATEGORY =

# Priority of submitted requests
DIVA_ARCHIVE_PRIORITY = -1

# Values for DIVA_ARCHIVE_QOS:
# 0 => DIVA_QOS_DEFAULT           // Direct and Cache
# 1 => DIVA_QOS_CACHE_ONLY        // Cache only
# 2 => DIVA_QOS_DIRECT_ONLY       // Direct only
# 3 => DIVA_QOS_CACHE_AND_DIRECT  // Cache and direct (if cache n/available)
# 4 => DIVA_QOS_DIRECT_AND_CACHE  // Direct and cache (if direct n/available)
DIVA_ARCHIVE_QOS = 0

# Values for DIVA_RESTORE_QOS:
# 0 => DIVA_QOS_DEFAULT           // Direct and Cache
# 1 => DIVA_QOS_CACHE_ONLY        // Cache only
# 2 => DIVA_QOS_DIRECT_ONLY       // Direct only
# 3 => DIVA_QOS_CACHE_AND_DIRECT  // Cache and direct (if cache n/available)
# 4 => DIVA_QOS_DIRECT_AND_CACHE  // Direct and cache (if direct n/available)
DIVA_RESTORE_QOS = 0

# Indicates whether partition parameter from
# archive profile is used as destination media
# name or source/destination name
PARTITION_IS_MEDIA = 1

# If PARTITION_IS_MEDIA parameter is set to 0
# this parameter specifies destination media
# name. Otherwise it is used only if archive
# is submitted with no profile selected on
# Avid side
DIVA_ARCHIVE_MEDIA =
```

AWD Installation, Configuration, and Operations

This chapter describes installation and configuration of AWD (Avid Workflows for DIVA). AWD interacts with Avid via Avid Interplay Web Services and with DIVA via the DIVA Rest API.

Topics

- Installation
- Configuration
- Operations

Installation

Avid Workflow for DIVA (AWD) installation requires the *AvidForDIVArchive* installer, release 3.0 or later.

Use the following procedure to install AWD:

1. Download the installer from the DIVA releases repository.

2. Launch the installer and select `Avid Workflows for DIVA`. The AMC feature can be unchecked, because it is not used in this specific case.

3. Select the target folder (usually `C:\DIVA`. This folder must exist).

4. After successful installation, the service DIVA AWD Service is automatically installed. The service is not started yet; it needs to be configured first.

Note: The batch script is installed in the `bin` folder, and can manage the service as usual.

Configuration

The configuration file is `AWDService.settings.json` in the `conf/awd_service` folder. It can be created or updated following the structure of the *.ini file created by the installer in the same folder. After all the options are set, the service can be started.

While running, the logs are generated in the `log/awd_service` folder.

Note: The *.ini file should only be used as a reference for configuration.

The configuration has one or more Avid Interplay profiles. See the *AWInterplayOptions* section in the configuration file.

For each Avid Interplay profile, the options are as follows:

Option	Description
WSAddress, WSPort	IP address and port of the Interplay WS.
WSWorkgroup	Avid workgroup name for the Interplay WS.
UserName, UserPassword	User credentials for Interplay access.
AvidWGFolder	Path to the IE watch folder, monitored by AWD to detect Avid assets to archive or restore.
WatcherPeriodInSec	Minimum interval polling (in seconds) of the watch folder. If less than the default value (5 seconds) the default will be considered.

Option	Description
AvidWGRunningFolder	Path to the IE folder where the assets are moved from the watch folder, after they satisfy the constraints imposed by the specific workflow (that is, in the case of archive, all the media files are online). The assets are kept in this folder pending the transfer to or from DIVA; after the transfer completes, they will go to either the Error or Completed folders, based on the final status of the transfer.
AvidWGErrorFolder	Path to the IE folder where AWD can move the assets for which the transfer to or from DIVA aborts.
AvidWGCompletedFolder	Path to the IE folder where AWD move the assets after completion.
IsToArchive	Direction flag: true if the detected assets must be archived, false or missing in the restore case.
Partition	Optional, specifies the media group for the archive. If not set or missing, the media group from Archiver is considered (that is, AWArchiverOptions/Archive/Media). If set, the specified media group must exist.
BestEffortRestore	Optional, specifies the restore behavior. If enabled, it can allow restore jobs to succeed, even if some individual media files could not be successfully restored. If disabled (default), then the restore will fail on missing required files.
ForceRetryOnCriticalError	Optional, specifies how to recover from a critical error (for example, after stopping the service or crashing/restarting the machine). If enabled, forces affected jobs to be retried. Note the retrying is forced when the service restarts, and it takes precedence over possible canceling actions happened in the Archiver UI side while the service was not running. If disabled (default), then jobs that were running at the critical time are moved to the Error folder.
AvidSharedPath	UNC path to the ISIS/Nexis folder where the restored media files must go, or in the archive case, the metadata file is delivered.

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AWD use the DIVA Rest API for the communication with the Archiver. A specific section in the configuration file refers options for DIVA access and behavior. (See "AWArchiverOptions" section in the configuration file).

Option	Description
ApiUrl	Base URL pointing to the DIVA API gateway.
AUserName, AUserPassword	User credentials for DIVA API access
MaxJobs	The maximum number of parallel jobs allowed.
Archive: Options specific to the Archive workflow.	
Source	AWD source name in DIVA. Must be of type `AVID_DIRECT`.
Media	Destination media group. Can be superseded by the Partition option set at specific profile level.
Overwrite	Indicates whether an existing DIVA object is deleted as a result of archiving an object under the same name and collection.

QOS	Values for DIVA_ARCHIVE_QOS:
	0 => DIVA_QOS_DEFAULT // Direct and Cache
	1 => DIVA_QOS_CACHE_ONLY // Cache only
	2 => DIVA_QOS_DIRECT_ONLY // Direct only
	3 => DIVA_QOS_CACHE_AND_DIRECT // Cache and direct (if cache not available)
	4 => DIVA_QOS_DIRECT_AND_CACHE // Direct and cache (if direct not available)

Priority	Priority of submitted archive requests.
Restore: Options specific to the Restore workflow.	
MaxRequests	The maximum allowed number of parallel requests per restore job.
Destination	AWD Destination Name in DIVA. Must be of type `AVID_DIRECT`.

QoS	Values for DIVA_RESTORE_QOS:
	0 => DIVA_QOS_DEFAULT // Direct and Cache
	3 => DIVA_QOS_CACHE_AND_DIRECT // Cache and direct (if cache not available)
	4 => DIVA_QOS_DIRECT_AND_CACHE // Direct and cache (if direct not available)

Priority	Priority of submitted restore requests.

Operations

The following subsections describe typical operations.

Using the Interplay Profiles

An Interplay profile, as used in AWD, allows setting up templates to use when performing an operation on the Interplay Avid assets.

The operation (or workflow) is given by the profile type. Two profile types currently exist, Archive and Restore, defined by the direction flag. The Avid assets subject of the workflow are the ones retrieved from the specific Interplay watch folder.

The idea is to use, but not restricted to, the Avid UI (for example, Interplay Access) for delivering assets to the watch folder. By example, a drag & drop can easily be used in the Interplay Access. Other methods are also possible; for example, checking-in assets from an external application.

The watch folder, as source of assets for a specific workflow, is a pillar element in an Interplay profile. For this reason, a concrete watch folder must be defined in one and only one running profile, and that profile must be unique over all AWD running instances (including the scenario AWD installed on multiple machines).

This restriction does not apply for the job folders.

Using the Job Folders

The AWD retrieves assets from the watch folder and triggers a workflow job only for the assets satisfying some specific criteria given by the profile. The assets that have not satisfied the profile criteria are ignored until they conform to the required criteria.

After an asset corresponds to the criteria, it is removed from the watch folder and an AW job is created to execute the operation specific to the profile. In the case of a sequence, its referred clips are also submitted to the AW job. This leads to the AW job being represented by a folder (auto-created) containing all the assets involved. During the jobs execution, the job folders are kept as subfolders of the profile's **running folder**. The live status of each job is presented as an annotation in the Comments field of the corresponding job folder.

When the job execution finishes, the job folder is removed from the running folder. In the case of a canceled or aborted job, the job folder is moved in its current state to the **error folder**; the user can then view the error reason in the job folder's Comments field (and perhaps take actions to eliminate the error cause and retry the job). If the job succeeded, the assets involved are moved to the **completed folder** in a flat form; the user can take the post-completion actions (for example, removing the media and/or metadata after a successful archive).

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