



**Interplay<sup>®</sup> | MAM**  
**Installation Manual**  
Version 5

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# Using This Guide

Congratulations on your purchase of Avid® Interplay® | Media Asset Manager (Interplay | MAM), a powerful system for archiving and managing media in a shared storage environment. This guide describes installing Interplay MAM on servers and clients. It is intended for all administrators.

## Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take causes you to lose data.
<code>Courier</code>	Courier on gray background indicates code examples.
<code>Courier blue font</code>	Courier blue font on gray background emphasizes code in examples.
	The arrow indicates that line breaks in code examples are not allowed when using or writing comparable code.
<i>Italic font</i>	Italic font is used to emphasize certain words.
<b>Courier bold font</b>	Courier bold font identifies text that you type.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means open the File menu and then select the Import command.
▶	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
<placeholder, variable>	Angle brackets indicate placeholders or variables.
UPPER CASE	Indicates names of processes, process classes, data model attributes, legal lists, legal list values, states of tasks, and templates.

## If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check the latest information that might have become available after the documentation was published.

**You should always check online for the most up-to-date documentation because the online version is updated whenever new information becomes available.** To view the online versions, visit the Knowledge Base at [www.avid.com/support](http://www.avid.com/support).

3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.
4. Visit the online Knowledge Base at [www.avid.com/support](http://www.avid.com/support). Online services are available 24 hours a day, 7 days a week. Search this online Knowledge Base to find answers, view error messages, to access troubleshooting tips, download updates, and – read or join online message-board discussions.

## Avid Training Services

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For information on courses/schedules, training centers, certifications, courseware, and books, please visit [www.avid.com/support](http://www.avid.com/support) and follow the Training links, or call Avid Sales at 800-949-AVID (800-949-2843).

# 1 Introduction

Avid Interplay® | Media Asset Manager (Interplay | MAM) is a powerful application to administer and process media assets. Interplay MAM can be installed on a single server or in a multi-server environment. System functions can be distributed across servers such as a database server, an Interplay MAM Data server, or an Interplay MAM Administration server.

This document describes:

- Hardware Recommendations
- Installing Interplay MAM on backend servers
- Configuring MediaCentral Playback Service (MCS)
- Installing Interplay MAM on clients

Installing Interplay MAM, as described in this manual, requires Windows operating systems. The installation procedure to support Interplay MAM Web GUIs in a Mac OS X environment is not described in this document. See your Avid representative for information on installing in a Mac OS X environment.

## Hardware Recommendations

Interplay MAM runs on commodity IT hardware. All host servers for Interplay MAM Services are Intel/Windows servers. This chapter recommends server and client hardware for Interplay MAM installations. Any server type that is supported by the database is acceptable as a database server, provided it offers sufficient performance.



*A final hardware configuration recommendation requires details about the number of users, ingests, imports, transfers, transcodings, and exports.*

Avid recommends the following basic parameters for servers:

## Operating System

- The entire Interplay MAM backend is available for Microsoft Windows Server 2012 R2



*Windows Server 2012 R2 must be set up from scratch; upgrades to Windows Server 2012 R2 are not supported.*

- The database can be hosted on any operating system supported by the selected database: Microsoft SQL Server 2012 Service Pack 2, or Microsoft SQL Server 2014 Service Pack 1, or Microsoft SQL Server 2016

## Database Server

Database servers are preferably clustered.

DB Cluster 2 Servers / 1 storage	DB Single Server
<ul style="list-style-type: none"> <li>• 2x HP DL360p G8</li> <li>• Two 8-Core Intel Xeon E5 2650 with 2 GHz</li> <li>• 32 GB RAM</li> <li>• 2* 146 GB SAS 6GB/s Hot Plug 2,5” 10k rpm</li> <li>• Mirrored System Disk (146 GB)</li> <li>• 1* HP StorageWorks P2000 G3 SAS MSA Dual Controller</li> <li>• 12* HP P2000 600GB 6G SAS 15K rpm LFF Dual Port Enterprise</li> <li>• Microsoft Windows Server 2012 R2 Standard</li> <li>• Microsoft SQL Server 2014 Enterprise SP1</li> </ul>	<ul style="list-style-type: none"> <li>• HP DL360p G8</li> <li>• Two 8-Core Intel Xeon E5 2650 with 2 GHz</li> <li>• 32 GB RAM</li> <li>• 2* 1 TB 3.5" SATA HDD enterprise class - 7200 rpm</li> <li>• Mirrored System Disk (150 GB)</li> <li>• RAID for database storage (750 GB)</li> <li>• Dual 1 GBit/s TCP/IP Network Adapter</li> <li>• Microsoft Windows Server 2012 R2 Standard</li> <li>• Microsoft SQL Server 2014 Standard SP1</li> </ul>

## Application Servers

- HP DL360p G8
- Two 8-Core Intel Xeon E5 2650 with 2 GHz
- 32 GB RAM
- 2\* 1 TB 3.5" SATA HDD enterprise class - 7200 rpm
- Mirrored System Disk (150 GB)
- Dual 1 GBit/s TCP/IP Network Adapter

- Microsoft Windows Server 2012 R2 Standard

### **MediaCentral Playback Service (MCPS)**

- HP DL360p G8
- Two 8-Core Intel Xeon E5 2650 with 2 GHz
- 64 GB RAM
- 2\* HP 500 GB 6G SAS 7.2K 2.5in HDD (system drive)
- 6\* HP 450 GB 6G SAS 10K 2.5in HDD (cache)
- HP Ethernet 1GbE 4P 331 FLR FIO
- Red Hat Enterprise Linux 6.5 incl. support contract



*For the latest information on the MediaCentral Platform Services, see the documentation available from the MediaCentral Platform Services page of the Avid Knowledge Base.*

### **Browse Online Storage**

- Disk-Based IT storage (SAN or NAS)
- Capacity depends on the amount of content ingested
- File system level access required for Interplay MAM application servers

### **Interplay | MAM Client Machines (Windows)**

- Quad-Core Intel Core i5 with 2.5 GHz
- 4 GB RAM (Web Clients)
- 6 GB RAM (Native Clients)
- 100 MB free space on hard disk for Interplay MAM Clients
- 1 GBit/s TCP/IP Network Adapter
- PCI Express graphics card with minimum 256 MB memory and 3D support (example: Nvidia Series 7 or newer, AMD/ATI HD3000 or newer)
- Monitor with minimum resolution: 1280 x 1024 pixel
- Windows 10 Pro (64 bit) Operating System
- Internet Explorer 11.0



## **Interplay | MAM Client Machines (Mac OS X)**

- Quad-Core Intel Core i5 with 2.5 GHz
- 4 GB RAM
- 100 MB of free disk space
- 1 GBit/s TCP/IP Network Adapter
- Monitor with minimum resolution: 1280 x 1024 pixel
- OS X 10.11 (El Capitan)
- Safari 9.0

## **Installation Overview**

The following main steps are required when installing Interplay MAM 5:

1. Comply with the installation requirements and prerequisites for the Interplay MAM 5 installation. For more information, see the following sections:
  - ["Hardware and Software Requirements" on page 10](#)
  - ["Configuring the Database Server" on page 11](#)
  - ["Interplay | MAM Requirements" on page 11](#)
2. Install MAM Control Service on all Interplay MAM servers. For more information, see ["Installing MAM Control Service" on page 16](#).
3. Install MAM Control Center on a dedicated MAM server. For more information, see ["Installing MAM Control Center" on page 22](#).
4. Install the required MAM installation packages for your system. For more information, see ["Installing MAM" on page 31](#).
5. Configure MCPS. For more information, see ["Configuring MCS on the MCS Server" on page 48](#).
6. Install Interplay MAM 5 clients on client machines. For more information, see ["Installing Interplay | MAM on Clients" on page 49](#).

## Hardware and Software Requirements

### Requirements for Test, Demo, or Virtual Systems

- 4 CPU (cores)
- 8 GB RAM
- 100 GB Hard Drive (or partition) for System/OS on C:\
- 100 GB Hard Drive (or partition) for Data on D:\

### Recommendation for Virus Scanners

Interplay MAM is tested in a secure environment with a virus scanner enabled (Symantec Endpoint Protection v12.1 with latest updates).

Because of potential performance issues, some directories on the MAM server should be excluded from real-time scans.



*The following list of directories that should be excluded from real-time scans is only a recommendation to maximize security and minimize impact on the system and users.*

- Temporary directories such as Video Analysis, Export targets, and Import directories.
  - Video analysis results are keyframes, which do not need to be scanned in real time.
  - Export files should be scanned on the client machine that accesses the files.
  - Import directories should only contain files that were delivered from secured, previously scanned drives.
- The Media Data directory should not be scanned in real time. Scans should be scheduled — during the night, for example, to minimize impact on users.
  - All files that are added to the Media Data directory should be scanned on the source device before they are saved to the MAM system.

Every virus scan impacts performance, but the proper configuration can minimize the impact on the system.

## Configuring the Database Server

Interplay MAM requires a database. It supports:

- Microsoft SQL Server 2012 with Service Pack 2
- Microsoft SQL Server 2014 with Service Pack 1
- Microsoft SQL Server 2016



*Only use the Standard or Enterprise version; the Express Edition is not supported.*

During the installation of the MS-SQL Database Server, the following issues must be considered:

- The “Fulltext Option” of the MS-SQL Database must be activated.
- The name and password of the database system administrator must be known.
- The TCP port for SQL Server must be enabled in the Windows firewall. Typically, SQL Server uses TCP port 1433.



*When installing Microsoft SQL Server, the server collation must be set to “Latin1\_General\_CI\_AI”. If the collation is different, the MAM installation fails.*

For more information, refer to the following documents that are shipped with the software:

- *Interplay | MAM Installation Manual MS SQL Server 2012*
- *Interplay | MAM Installation Manual MS SQL Server 2014*
- *Interplay | MAM Installation Manual MS SQL Server 2016*

## Interplay | MAM Requirements

Perform the following operations when you install Interplay MAM:

- Prepare one or two Windows shares for files handled by MAM. The shares should reside on a very fast, very large, and very reliable storage system.

The paths of the shares must be entered when installing the Mam.Core.Infrastructure package:

- **Archive Root Directory:** The folder is used to store all media files, including HiRes audio and video files, proxy files, thumbnails, and keyframe sets.
- **System Temp Directory:** The folder is used to store temporary data. For example, it contains the folders monitored by WatchFolder services or files uploaded in the context of a business process.

If you want to use a single share to store all files, you must use different subfolders within the share.

- For the MAM installer to be able to see domain names and user accounts, enable the **Computer Browser Service**, set it to “automatic,” and make sure that it is started. On Microsoft Windows Server 2012 R2 this service is disabled by default.
- To avoid the error “An established connection is aborted by the software in your host machine,” change the network configuration of Windows Server 2012 R2. Enable IPv6 by selecting the “Internet Protocol Version 6 (TCP/IPv6)” check box in the Properties of your Network Adapter.
- Create a domain user that is used to run the MAM Control Center and MAM Control Service web services. Avid recommends using the following credentials:
  - Account name: mam\_service
  - Password: Avid123

Add the account to the Administrators group on each Interplay MAM backend server.

- Create a user group in your Active Directory domain and assign all users who have administrative permissions for the MAM system to this group. Avid recommends naming the group MAM\_Administrators.
- If “HID-compliant touch screen” is enabled under Windows 8.1, the GUI of MAM Control Center might be distorted. To avoid this, disable the HID-compliant touch screen on each client machine (Control Panel > Device Manager > Human Interface Devices).
- Flexera License for Interplay MAM 5 is required.
- Do not install Interplay MAM clients on the Interplay MAM backend server.
- Install Interplay MAM native admin tools on the Interplay MAM backend server.

## Installing Test Systems

### Windows share for files

For single-server test installations, create a Windows share with name “MediaAssetManager” on the server and grant full access permissions for the account that is used to run the MAM services (typically “mam\_service”). Then, use different subfolders for the following two system settings when installing the Mam.Core.Infrastructure package:

- Archive Root Directory: \\<servername>\MediaAssetManager\Archive
- System Temp Directory: \\<servername>\MediaAssetManager\Temp

The subfolders are created automatically during installation.

### Installation on servers that are not in a Windows domain

Some installations — test systems, for example — might require the installation of Interplay MAM on servers that are not registered in a Windows Domain. In such cases, install MAM with the following changes to the installation procedure:

- Create the local user group MAM Administrators on the MAM server. Use this group when installing MAM Control Center and MAM Control Service.
- Instead of a domain user, create two local users on the server:
  - mam\_service: The account used to run MAM services.
  - mam\_admin: The account used to administer MAM. Add the account to the group MAM Administrators.

For single-server installations, the server must have at least 8 GB of RAM.

### Multi-server installations without a Windows domain

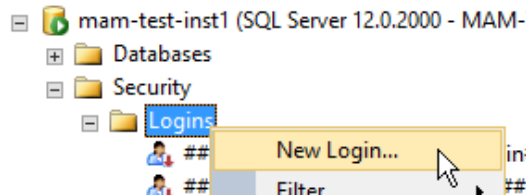
The following steps are only required if MAM Control Center is *not* running on the same server as Microsoft SQL Server.



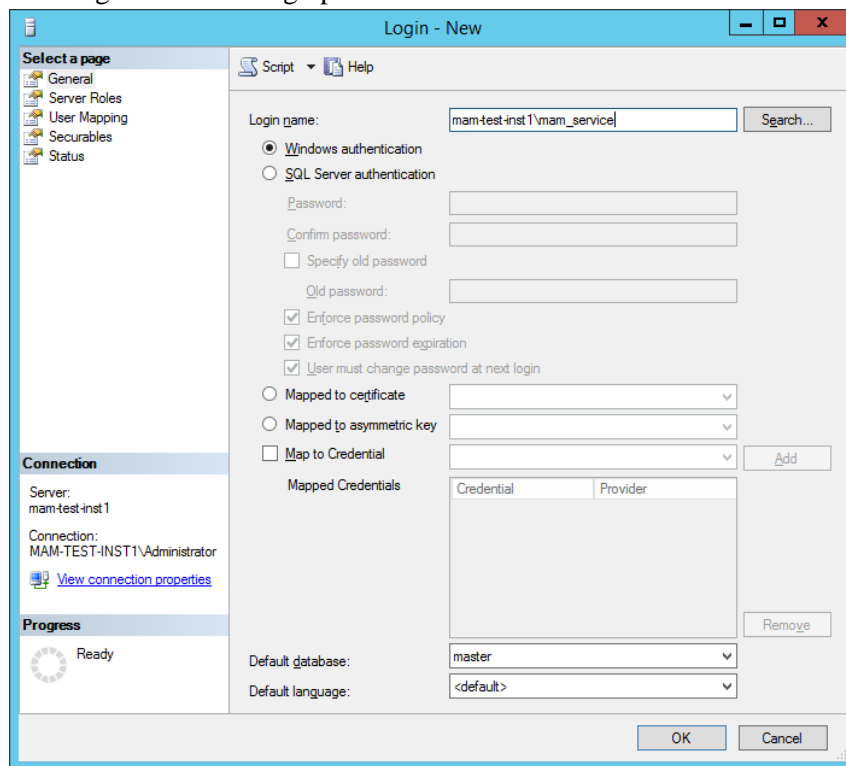
*In non-production systems, Avid recommends installing MAM Control Center on the database server to avoid having to manually create the mam\_service account in the database.*

1. Create a Windows account named mam\_service on the server running Microsoft SQL Server. The account must use the same password as the account on the MAM server running the MAM Control Center.

2. Having installed MAM Control Center, open Microsoft SQL Server Management Studio. Connect to the database and open Security.
3. Right-click Logins and select “New Login...”



The Login – New dialog opens.

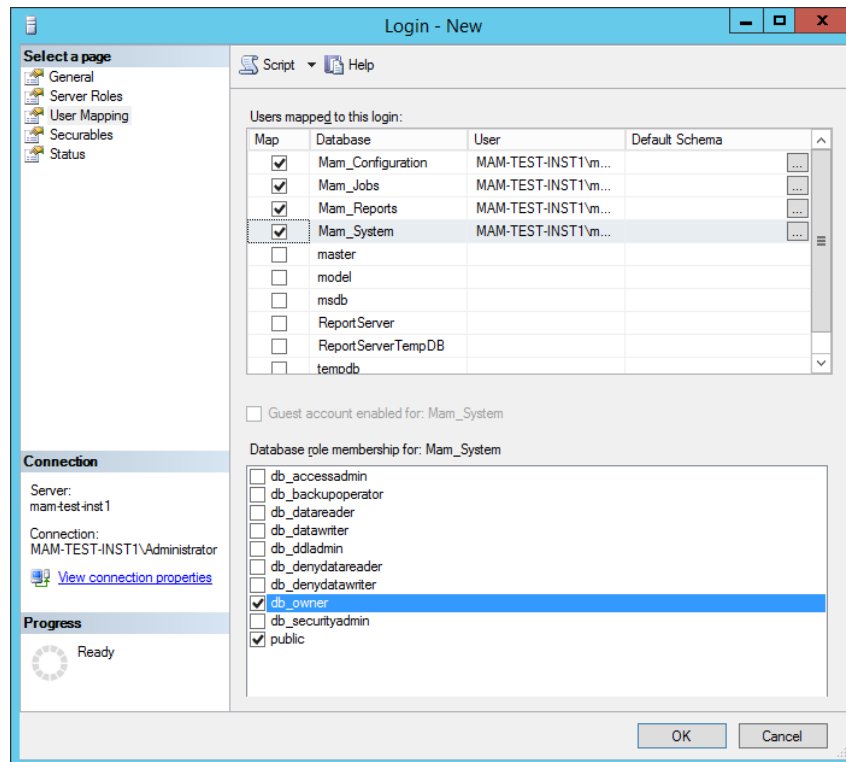


4. Enter the local account name *dbservername*\mam\_service as Login name.
5. In the Select a page pane, select User Mapping.
6. For each of the databases
  - MAM\_Configuration
  - MAM\_Jobs
  - MAM\_Reports

- MAM\_System

do the following:

1. Click the check box in the Map column.
2. Click the role db\_owner check box.



7. Click OK.

## 2 Installing Interplay | MAM Backend Components

Installation of Interplay MAM Backend components consists of three steps:

1. Install MAM Control Service on all Interplay MAM servers. For more information, see [“Installing MAM Control Service” on page 16](#).
2. Install MAM Control Center on a dedicated MAM server. For more information, see [“Installing MAM Control Center” on page 22](#).
3. Install the required MAM installation packages for your system. For more information, see [“Installing MAM Installation Packages” on page 31](#).

### Installing MAM Control Service

Install MAM Control Service on all Interplay MAM servers that are running the Windows Server operating system.

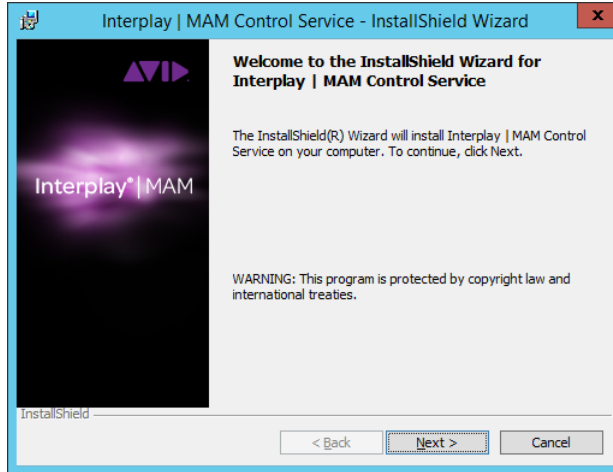
MAM Control Service is the local agent that is responsible for the deployment of files to the server, the execution of scripts on the server, and a number of administrative tasks during runtime of the MAM system.

**To install MAM Control Service:**

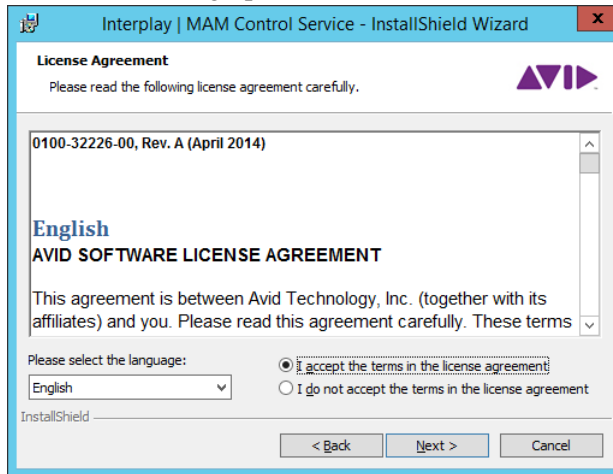
1. Open the Interplay MAM installation source.



2. Open the folder “Installer” and double-click MAMControlService.exe. The MAM Control Service installer starts and shows a Welcome dialog.

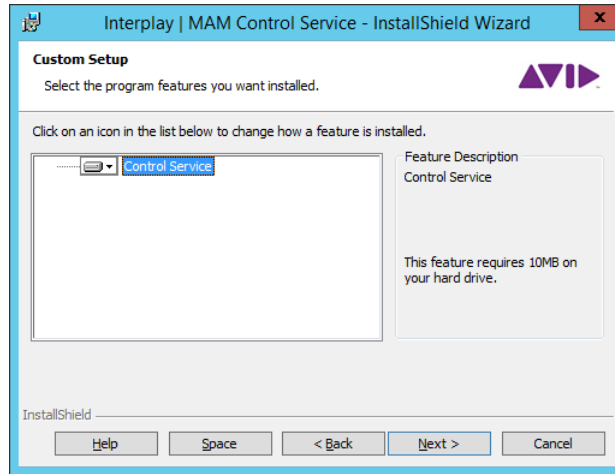


3. Click Next.  
The license dialog opens.



4. Select the language of the AVID SOFTWARE LICENCE AGREEMENT, and read it.
5. Select “I accept the terms in the license agreement” and click Next.  
If you do not accept the license agreement the installation terminates.

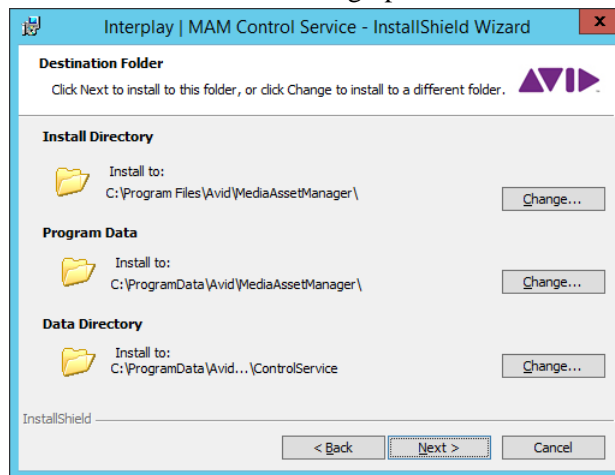
The Custom Setup dialog opens.



You can click Space to verify that the installation drive has enough free space for the installation.

6. Click Next.

The Destination Folder dialog opens.



7. You can use the Change buttons to select different locations for the following folders:

- Install Directory: The installation folder for MAM Control Service and all MAM services that are installed with installation packages.

- Program Data: The folder used to store local data on the server. This includes:
  - Configuration settings of MAM Control Service
  - Log files of MAM services
  - Installed package files
- Data Directory: The folder used to store temporary local data. This includes, for example, working folders for Video Analysis.



*Avid recommends leaving the default values. All folders must be folders on the local disk.*

8. Click Next.  
The Login Information dialog opens.

Interplay | MAM Control Service - InstallShield Wizard

**Logon Information**  
Specify a user name and password

Specify the user name and password of the Interplay | MAM service account

User name:  
mam-test-inst2\mam\_service Browse...

Password:  
.....

InstallShield

< Back Next > Cancel

9. Enter the account that is used to run MAM Control Service and all services that are installed with packages. See “[Interplay | MAM Requirements](#)” on page 11 for details.
  - User name: Domain name and user name of the account, separated by a backslash. The Browse button opens a dialog that allows browsing for the domain name and user name.
  - Password: The password for the account.



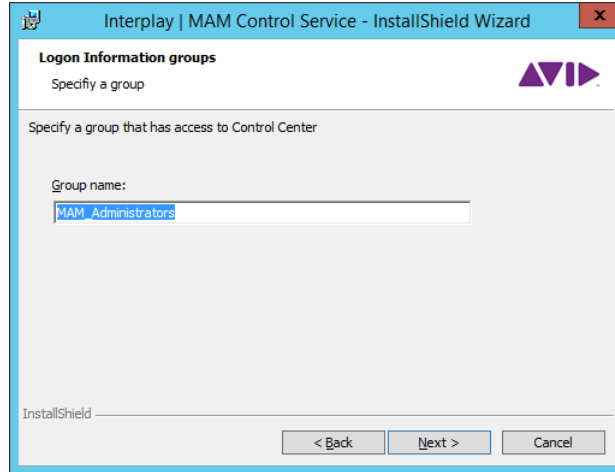
*The credentials must be the same for MAM Control Center and MAM Control Service on all servers. Avid recommends using a domain user named “mam\_service.”*

*For information on how to install test systems that are not connected to a Windows Domain,*

see *“Installing Test Systems” on page 13.*

10. Click Next.

The user account information is verified and the “Logon Information groups” dialog opens.



11. Enter the name of the user group that has permission to use MAM Control Center.  
All members of that user group are MAM administrators who can modify the MAM installation.

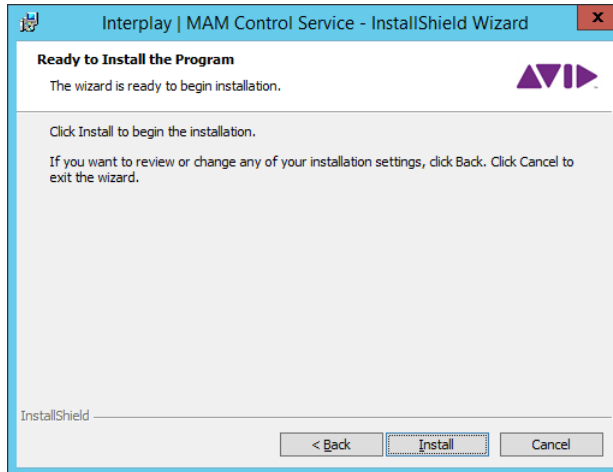


*Avid recommends defining a domain user group MAM\_Administrators and assigning MAM administrators to this group.*

*For information on how to install test systems that are not connected to a Windows Domain, see “Installing Test Systems” on page 13.*

12. Click Next.

The user group is verified and the final confirmation dialog opens.

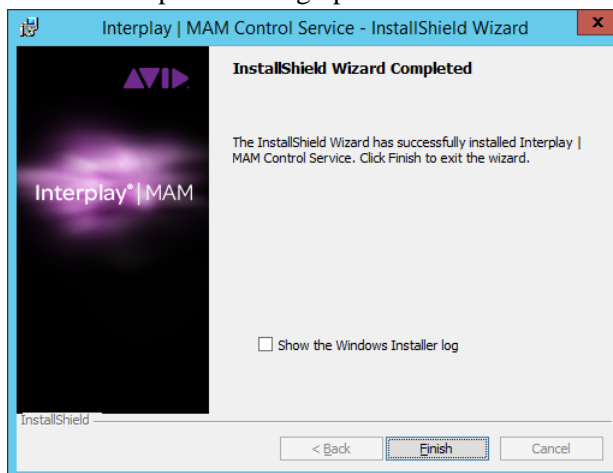


13. Click Install to start the installation.

The installer executes a number of steps to install and configure the server:

- It installs required roles and features of Windows Server 2012 R2.
- It adds rules to the Windows firewall to open the required TCP ports.
- It registers an IIS site "MAM Management" for the management of services and an IIS site "MAM Services" for hosting MAM services.

The installation takes some time. When the installation is complete, the InstallShield Wizard Completed dialog opens.



14. (Option) Select Show the Windows Installer Log to see the installation log file when the installation is finished.
15. Click Finish to exit the installer.

## Installing MAM Control Center

MAM Control Center must be installed on one dedicated Interplay MAM server.

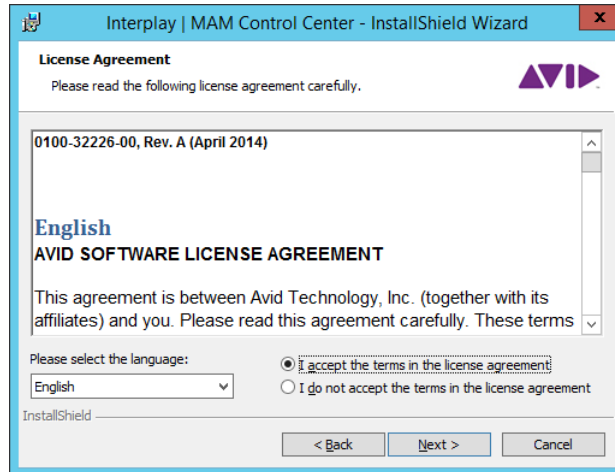
### To install MAM Control Center:

1. Open the Interplay MAM installation source.
2. Open the folder “Installer” and double-click MAMControlCenter.exe. The MAM Control Center installer starts, installs the Avid License Control, and shows a Welcome dialog.



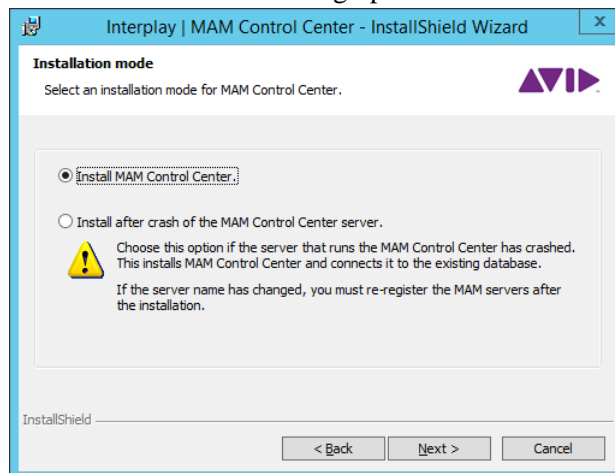
3. Click Next.

The license dialog opens.



4. Select the language of the AVID SOFTWARE LICENCE AGREEMENT, and read it.
5. Select “I accept the terms in the license agreement” and click Next. If you do not accept the license agreement the installation terminates.

The Installation mode dialog opens.

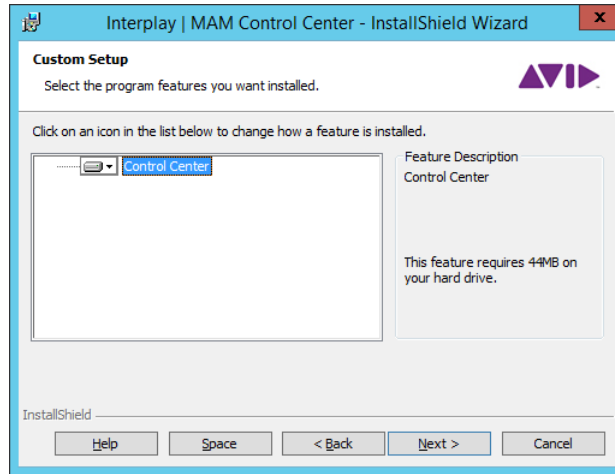


6. Select “Install MAM Control Center” and click Next.



*If you select “Install after crash of the MAM Control Center server” the installation fails. For details about this option, see “Recovery after Failure of the MCC Server” on page 128.*

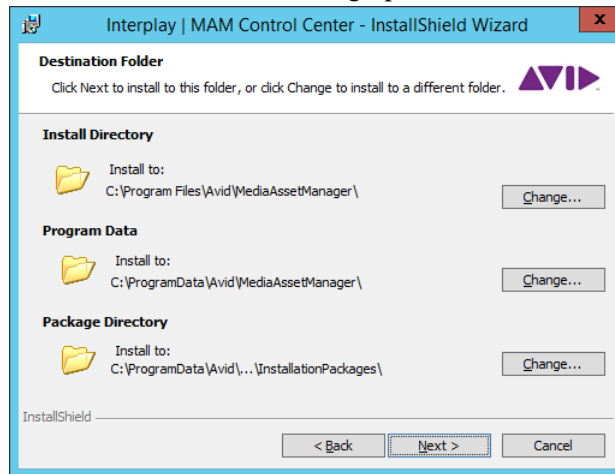
The Custom Setup dialog opens.



Click Space to check if the drive has enough free space for the installation.

7. Click Next.

The Destination Folder dialog opens.



8. Use the Change buttons to select different locations for the following folders:
  - Install Directory: The installation folder of the MAM Control Center. The installation folder must be the same as for MAM Control Service. See [step 7 of “Installing MAM Control Service” on page 18](#) for details.
  - Program Data: The folder used to store local data of MAM Control Center — for example, log files.



- Package Directory: The folder used as the source folder for the installation of packages. Deploy installation packages to this folder to install the system. The folder is accessible via FTP. MAM Control Center shows an FTP link that can be used to upload installation packages to this folder.



*Avid recommends leaving the default values. All folders must be folders on the local disk.*

9. Click Next.

The Logon Information dialog opens.

Interplay | MAM Control Center - InstallShield Wizard

**Logon Information**  
Specify a user name and password.

Specify the user name and password of the Interplay | MAM service account.

User name:  
domain\mam\_service Browse...

Password:  
[Masked]

InstallShield

< Back Next > Cancel

10. Enter the Windows account that is used to run MAM Control Center. See [“Interplay | MAM Requirements”](#) on page 11 for details.

- User name: Domain name and user name of the account, separated by a backslash. The Browse button opens a dialog that allows browsing for the domain name and user name.
- Password: The password for the account.



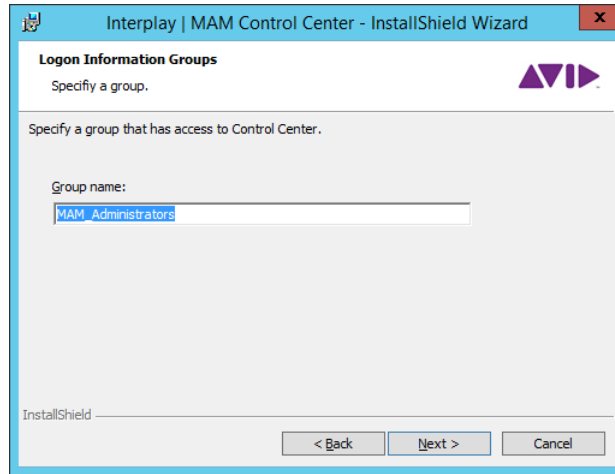
*The credentials must be the same for MAM Control Center and MAM Control Service on all servers. Avid recommends using a domain user named “mam\_service.”*

*For information on how to install test systems that are not connected to a Windows Domain, see [“Installing Test Systems”](#) on page 13.*

11. Click Next.

The installer verifies that the account information is correct.

The “Logon Information groups” dialog opens.



12. Enter the name of an existing user group that has permission to use MAM Control Center. All members of that user group are MAM administrators who can modify the MAM installation.

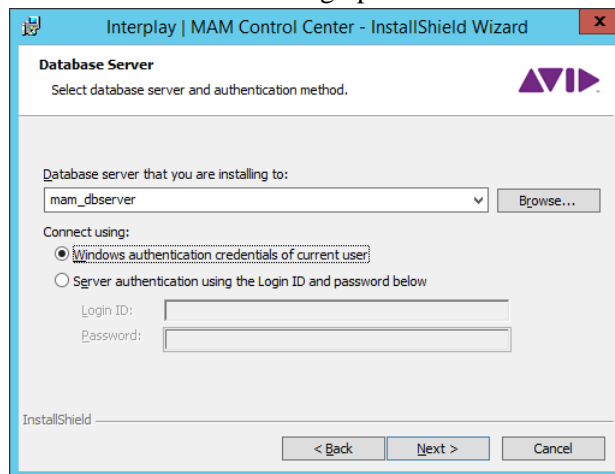


*Avid recommends defining a domain user group MAM\_Administrators and assigning the MAM administrators to this group.*

*For information on how to install test systems that are not connected to a Windows Domain, see “Installing Test Systems” on page 13.*

13. Click Next.

The Database Server dialog opens.



14. Enter the connection data for the database:

- Database server: Host name of the server that is running Microsoft SQL Server. Click Browse to see a list of servers in the network running Microsoft SQL Server and select one from the list.
- Windows authentication: MAM Control Center uses the current windows account (under which the installer is executed) to connect to the database. SQL Server has to be configured to accept that account as administrative login.
- Server authentication: MAM Control Center uses the SQL Server account with the given login ID and password to connect to the database. SQL Server has to be configured to accept that account as administrative login.



*You may select “(local)” as the server name, but this only works for single-server installations. In most cases, enter the host name of the database server.*

15. Click Next.

The installer verifies that it can connect to Microsoft SQL Server.

The Database Name dialog opens.

16. Enter names for the following databases:

- Config database: Stores information on the software distribution and configuration of the MAM system.
- System database: Stores information on the assets and processes of the MAM system.
- Jobs database: Stores runtime data of WorkflowEngineWS, StateMachineWS, and other services.

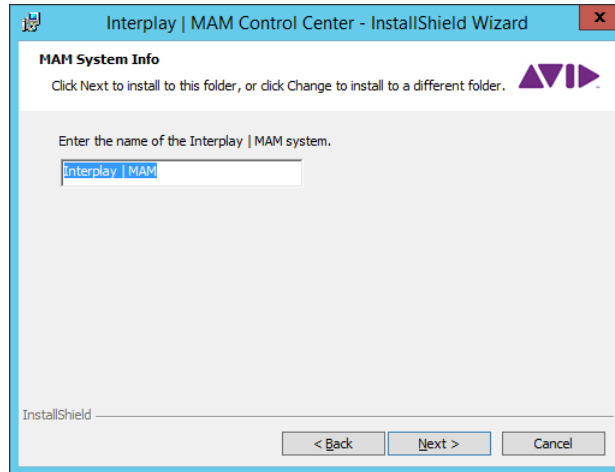
- Reports database: Stores information used for reporting purposes — specifically, archived data of finished workflows and processes.



*Avid recommends keeping the default names for the databases.*

17. Click Next.

The MAM System Info dialog opens.



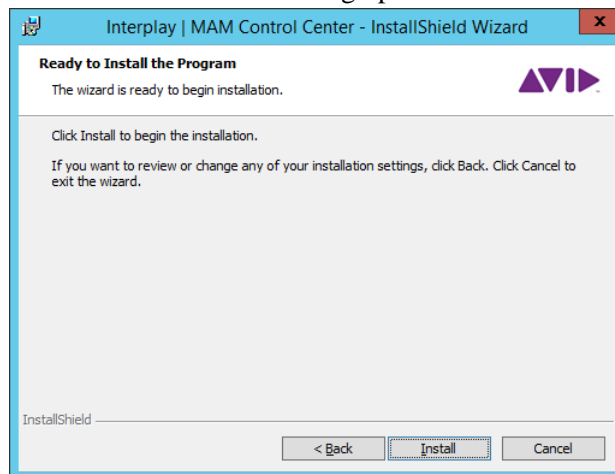
18. Enter the display name of the MAM system. The display name is shown in the MAM Control Center user interface.



*Avid recommends using “Interplay | MAM” for a production system, and a different name, such as “Interplay | MAM (TESTSYSTEM),” for test and staging systems.*

19. Click Next.

The final confirmation dialog opens.

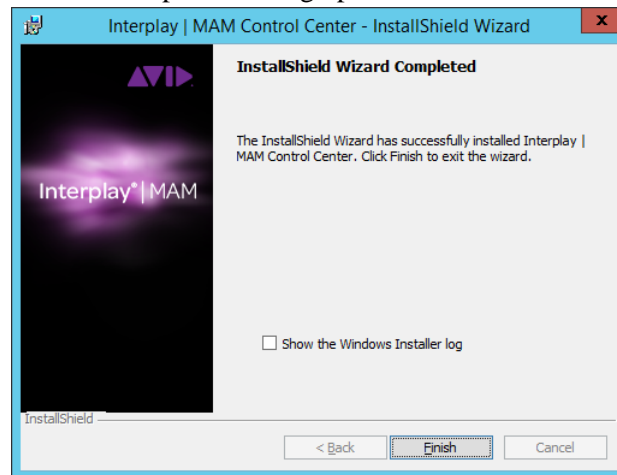


20. Click Install to start the installation.

The installer executes a number of steps to install and configure the servers:

- It installs required roles and features of Windows Server 2012 R2.
- It adds rules to the Windows firewall to open the required TCP ports.
- It registers the site “MAM Management” in IIS to host MAM Control Center.
- It creates and configures the four databases in Microsoft SQL Server.

The installation takes some time. When the installation is complete, the InstallShield Wizard Completed dialog opens.

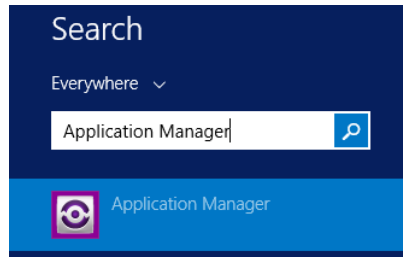


21. (Option) Select Show the Windows Installer Log to see the installation log file when finishing the installation.
22. Click Finish to exit the installer.

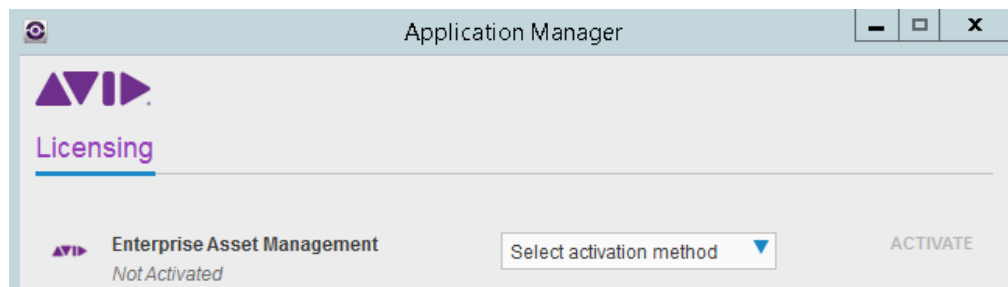
## Activating License

After installing MAM Control Center, activate the license for Interplay MAM on this server, as described in the following procedure.

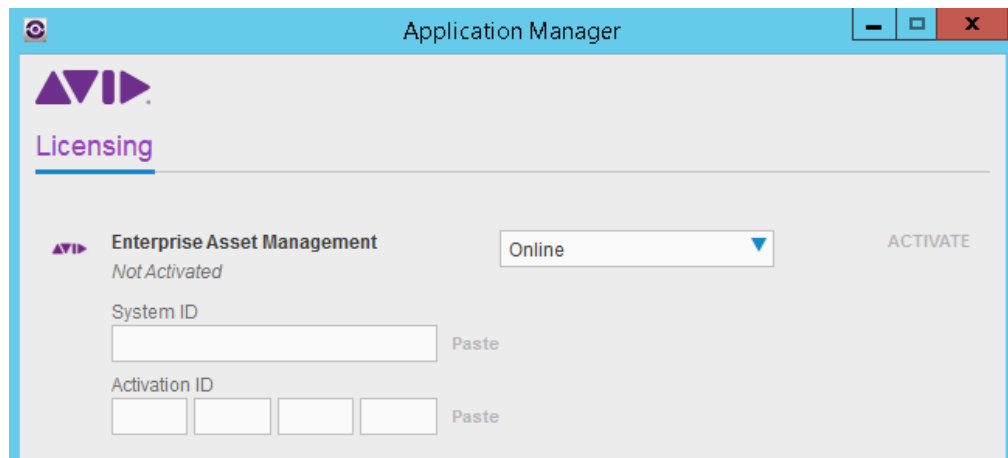
1. To start the Avid Application Manager, press the Windows key, enter “Application Manager” in the Search box, and press Enter.



The Avid Application Manager starts. The Application Manager icon is added to the taskbar.

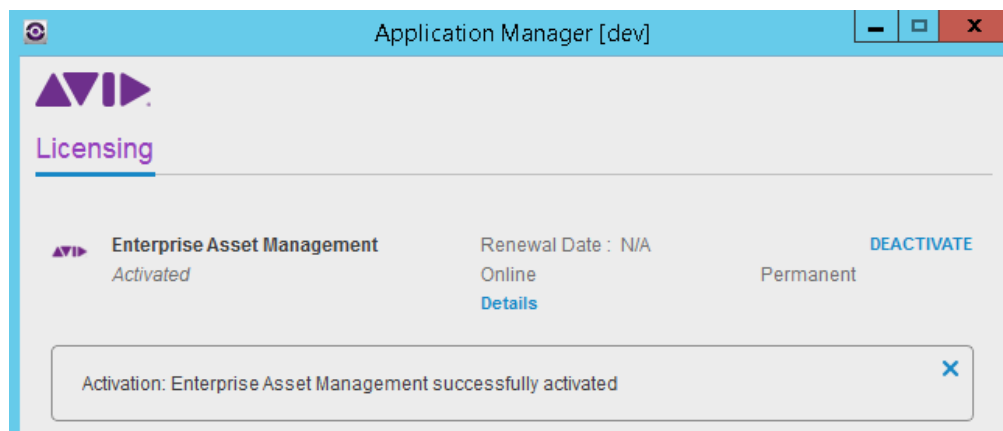


2. Select the activation method “Online.”
3. Enter the appropriate information in each field: System ID followed by your Activation ID that you received when you purchased the software.



4. Click Activate to start the license activation process.

The Avid Application Manager confirms your system information. When the activation is complete, a message informs you that your software has been successfully activated.



5. Close the Application Manager.

## Installing MAM Installation Packages

Interplay MAM is delivered as a set of installation packages, depending on the features that are used by the system. Packages are installed using MAM Control Center. See [“Installing MAM Control Center” on page 22](#) for details about the installation of MAM Control Center.

### Opening MAM Control Center

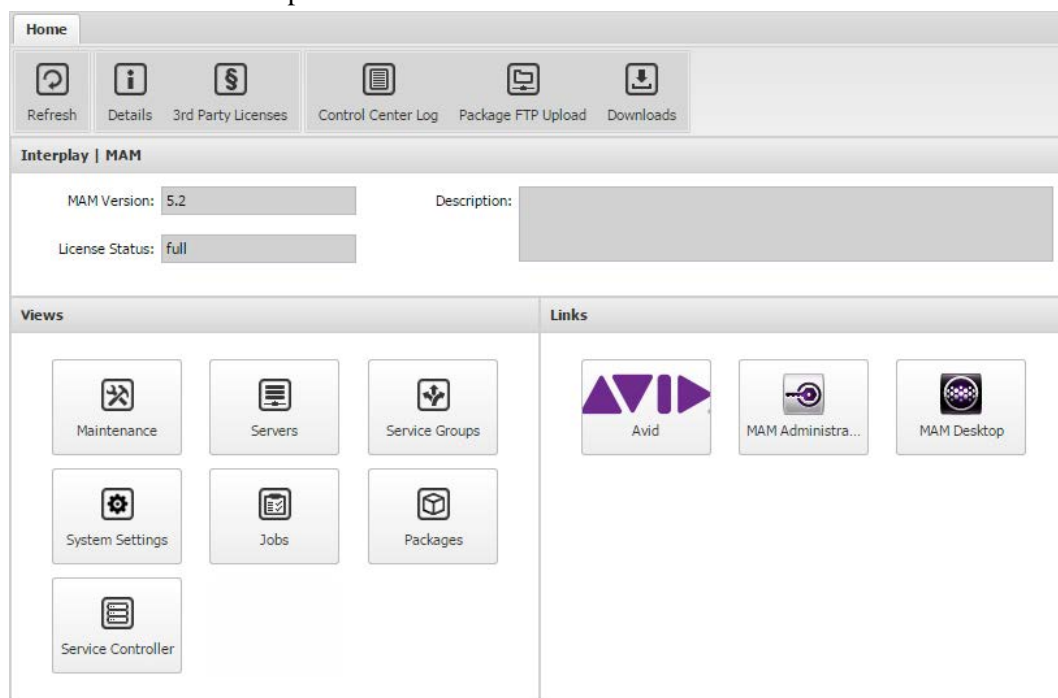
Once the installation is complete and your license is activated, open MAM Control Center to install the Interplay MAM installation packages.

When you start MAM Control Center an Internet browser message will warn you that the HTTPS certificate is not signed by a trusted authority. Install a valid HTTPS certificate signed by a trusted authority to eliminate the warning.

#### To open Interplay MAM Control Center:

1. Start MAM Control Center with an Internet browser, entering the URL `https://hostname:9911/ControlCenter/web/` where hostname is the name of the service that is running the MAM Control Center service.
2. Enter your user credentials to use the application.  
You must be a member of the user group defined in the installation of MAM Control Center. For details, see step 12 of [“Installing MAM Control Center” on page 26](#).

MAM Control Center opens.



## Installation Packages

Interplay MAM services are delivered as a set of installation packages. Each package contains a number of services and additional data and scripts that are required for the installation. The following table shows the commonly used installation packages. Your installation may omit some packages or include additional packages, depending on the features that are required in your installation.

The core packages are:

Package name	Description
BaseProcesses	This package contains technical base processes.
Mam.Core.Base	This package contains the core services that handle metadata of assets and processes.
Mam.Core.Compatibility	This package contains the services that implement compatibility layers to older versions of Interplay MAM. It is usually only needed if you intend to use processes, SWoDL scripts, or customized components of an existing installation.



<b>Package name</b>	<b>Description</b>
Mam.Core.Connectivity.Toolkit	This package contains the services that implement the functionality of the Media Services Connectivity Toolkit for Interplay MAM, which provides an API to communicate with the MAM backend services. This API can be called via upstream service and is part of the platform API.
Mam.Core.Desktop	This package contains the services needed for the Interplay MAM Desktop user interface.
Mam.Core.EssenceManagement	This package contains services that handle information about essences — particularly the files that are registered in Interplay MAM.
Mam.Core.EssenceTransfer Management	This package contains services that transfer files and manage the transfer of essences.
Mam.Core.Infrastructure	This package contains the core services for the infrastructure of Interplay MAM. This includes handling of user information, permissions, and administration tools.
Mam.Core.Integration	This package contains services that are needed to integrate with third-party components. It includes IntegrationServiceWS, which provides a stable, high-level API for Interplay MAM.
Mam.Core.MediaCentralConnection	This package contains the services that connect Interplay MAM to Media Central   UX and Media   Index.
Mam.Core.Orchestration	This package contains the services needed for the orchestration layer of Interplay MAM. It includes the SWoDL execution engine (WorkflowEngineWS), BPMN execution engine (StateMachineWS), and a number of administrative tools and helper services.
Mam.Core.Orders	This package contains the legacy orchestration engine used in Interplay MAM 4 (“OrderManagementWS”).
Mam.Core.Scheduling	This package contains the services that control and manage the recording of audiovisual material.
Mam.Core.TransferListScheduling	This package contains a service that allows the administration of orders. It is particularly designed for orders that transfer video or audio.
Mam.Core.UIBase	This package contains the core services needed for the Interplay MAM Desktop user interface and Media Central UX.

---

<b>Package name</b>	<b>Description</b>
Mam.Core.VideoAnalysis	This package contains a service that analyzes videos to determine technical information, find scene changes, and extract key frames and thumbnail images.
Mam.Core.WatchService	This package contains a service that monitors a folder on disk for new files or folders, and launches processes, SWoDL scripts, or orders.

---

Mam.Kit packages bring additional functionality and configuration options to an Interplay MAM installation:

---

<b>Package name</b>	<b>Description</b>
Mam.Kit.FileAnalysis	This package contains a service that detects the technical information of various file formats, particularly video and audio formats. It uses a configurable set of tools to detect the information.
Mam.Kit.MediaRewrappingDispatcher and Mam.Kit.MediaRewrappingWorker1	This package contains services to convert between different container formats, especially between different MXF variants.
Mam.Kit.PAMAdapter	This package contains the services needed to connect Interplay Production and Interplay MAM.
Mam.Kit.DemoQuickSend	This package contains a sample process definition, process class and template, and preconfigured settings in the BPMProcesses profile for a Quick Send sub-menu to be used in MediaCentral UX Media pane. You can use these settings as a reference when modelling your own Quick Send sub-menus.

---

The following Mam.Kit packages bring additional functionality and configuration options to an Interplay MAM installation. They require an additional license:

---

<b>Package name</b>	<b>Description</b>
Mam.Kit.FoundationBase	This package contains configuration data, SWoDL scripts, and processes that implement the predefined core functionality of an Interplay MAM system. It includes a configured data model, a set of default folders in MAM Desktop and Media Central UX, workflows to import and export videos, and a preconfigured Watch Service related to the data model.

<b>Package name</b>	<b>Description</b>
Mam.Kit.FrontPorchDIVA	This package contains the services needed to integrate with DIVArchive by Front Porch Digital.
Mam.Kit.HarmonicProMediaCarbonWFS	This package contains the services needed to integrate with the WFS workflow system that controls ProMedia Carbon video encoders by Harmonic.
Mam.Kit.MediaDirector	This package contains a preconfigured MAM Watch Service for processing incoming video clips from Media   Director. For this package a completely installed Media   Director system is required.
Mam.Kit.MediaDistribution	This package contains configuration data, SWoDL scripts, and processes to publish Interplay MAM assets to social media using Media   Distribute.
Mam.Kit.Production	This package contains configuration data, SWoDL scripts, and processes to transfer assets between Interplay Production and Interplay MAM.
Mam.Kit.SGLFlashNet	This package contains the services needed to integrate with FlashNet by SGL Broadcast.
Mam.Kit.TapeArchive	This package contains configuration data, SWoDL scripts, and processes to archive and restore assets to and from third-party HSM systems like Front Porch DIVArchive, SGL FlashNet, Quantum StorNext, or Spectra BlackPearl. A service for Cache Management is included to manage the archiving of assets and online disk cleanup.
Mam.Kit.TelestreamVantage	This package contains the services needed to integrate with Vantage Workflow by Telestream.
Mam.Kit.QuantumStorNext	This package contains the services needed to integrate with StorNext by Quantum.
Mam.Kit.SpectraBlackPearl	This package contains the services needed to integrate with BlackPearl by Spectra Logic.
Mam.Kit.iNEWS	This package contains configuration data, SWoDL scripts, and processes to integrate iNEWS and Interplay MAM.
Mam.Kit.P2ClipImport	This package contains the services needed to import clips from Panasonic P2 cards so they are available for preselection based on browse proxies or key frames. After the import process, imported clips can be

---

<b>Package name</b>	<b>Description</b>
	retrieved, checked, and used for further processing.
Mam.Kit.XDCamClipImport	This package contains the services needed to import clips from Sony XDCAM ProDiscs so they are available for preselection based on browse proxies or key frames. After the import process, imported clips can be retrieved, checked, and used for further processing.
Mam.Kit.InterraBaton	This package contains the Interplay MAM BatonGateway and a Baton File QC process and provides access to the Interra Baton file QC and profiling functionality.
Mam.Kit.Minnetonka.Audio	This package contains the Interplay MAM MinnetonkaATSGateway and the MATS Loudness Control process, and provides access to the Minnetonka ATS loudness measurement and adjustment functionality for video files.
Mam.Kit.FileTransfer	This package contains the Interplay MAM File Transfer Manager and the Transfer File process to transfer files using third-party tools for advanced file transfers (such as Aspera Console, Aspera Enterprise Server, or Signiant Manager+Agents).
Mam.Kit.ClosedCaption	This package contains services needed to use Closed Caption information read-only as annotation to support searching and finding video material. The timed Closed Caption text information is stored in a MAM stratum. For previously existing video objects in MAM, separate .SCC (sidecar) files that have been created outside of MAM can be imported. For MXF video files that already contain embedded Closed Caption information, Telestream Vantage is used to extract the Closed Caption information into a separate sidecar file and store timed text information in the stratum.

---

## **Installing Packages**

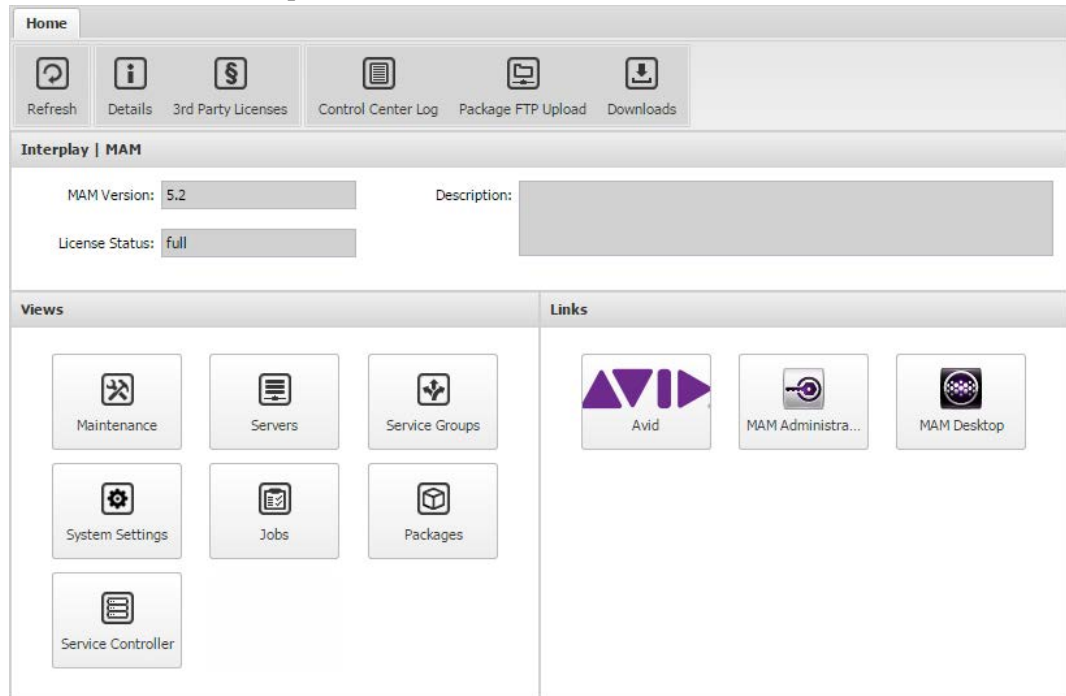
Install Interplay MAM installation packages as described in the following procedure.

### **To install and configure Interplay MAM:**

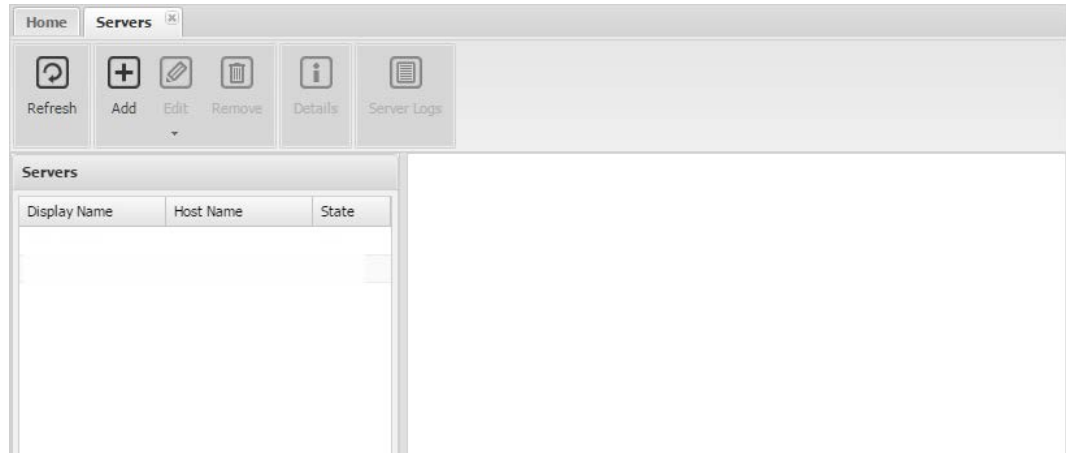
## Installing MAM Installation Packages

1. Start MAM Control Center with an Internet browser, entering the URL `https://hostname:9911/ControlCenter/web/` where hostname is the name of the service that is running the MAM Control Center service.
2. Enter your user credentials to use the application.

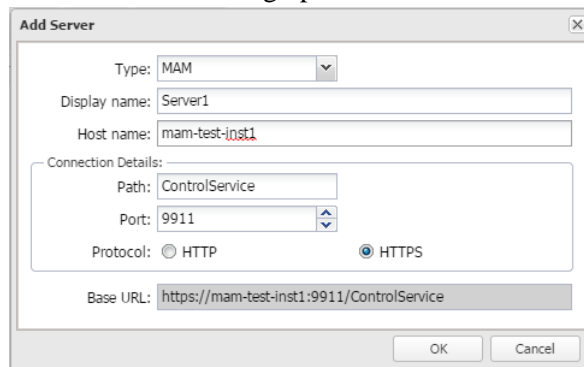
MAM Control Center opens.



3. Click Servers in MAM Control Center.  
The Servers view opens.



4. Click Add.  
The Add Server dialog opens.



5. Enter the information for the first server:

- Type: The type of the server.
  - MAM: A server running MAM services.
  - ICS: A server running the Media Central Platform.



*For an ICS server, do not provide the Connection Details “Path” and “Port”, but keep the default value for “Protocol”.*

- Display name: A display name for the server.
- Host name: The TCP host name of the server.

- Path: The URL path of MAM Control Service.



*Avid recommends keeping the default value ControlService.*

- Port: The TCP port of MAM Control Service.



*Avid recommends keeping the default value 9911.*

- Protocol: The protocol used to connect to MAM Control Service.



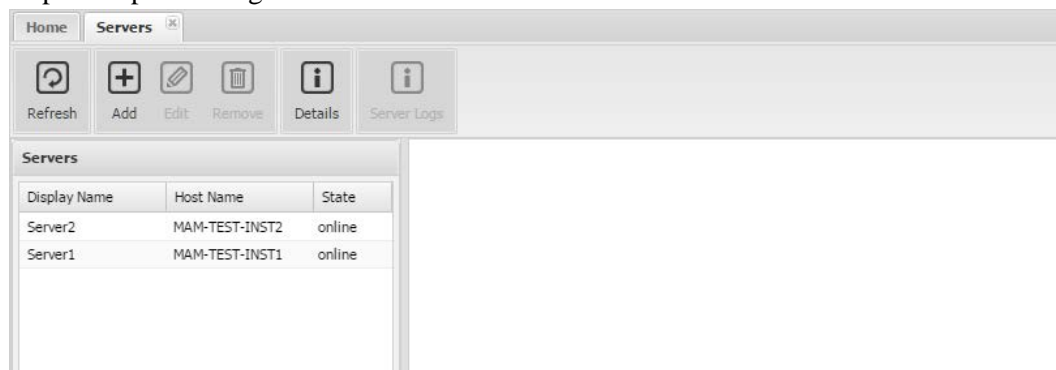
*Avid recommends keeping the default value HTTPS.*

- Base URL: Shows the combined URL used to connect to MAM Control Service on the server.

6. Click OK to add the server.

MAM Control Center registers the server and shows it in the Servers pane. In an error case a message opens (for example, the server is already registered with another MAM or the entered Base URL is not correct).

7. Repeat steps 4 through 6 for all servers until the Servers view shows all servers.



**Do not continue with the installation procedure unless you added one ICS server and at least one of type MAM to the Servers view.**

8. Open the “Packages” folder on your Interplay MAM installation source.

9. Copy the installation packages to the package folder of MAM Control Center. You have two options:

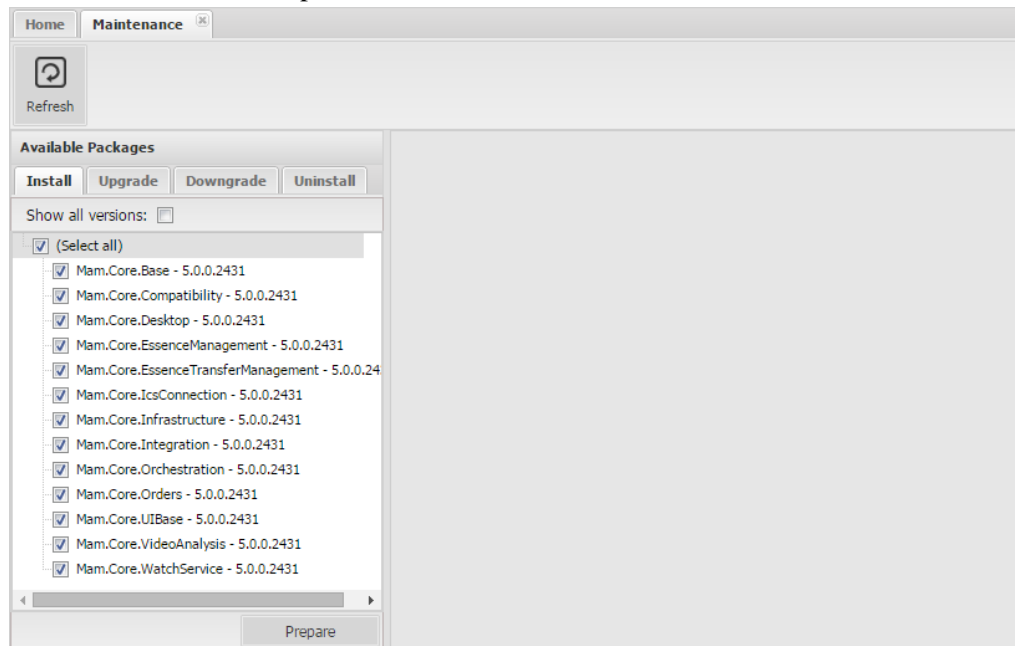
- ▶ On the MAM Control Center Home view, click the Package FTP Upload button that opens an FTP link. Use your preferred FTP client to connect to this FTP URL and upload the packages you want to install. For example, copy the FTP URL and paste it to a Windows Explorer window.

- ▶ Copy the packages you want to install directly to the package directory of MAM Control Center. See [step 8 of “Installing MAM Control Center” on page 24](#) for the configuration of the package directory. You can see the package directory by clicking the System Settings button on MAM Control Center’s Home view and locating the system setting System.PackagesDirectory:

System.PackagesDirectory    Installation packages directory    C:\ProgramData\Avid\MediaAssetManager\InstallationPackages\

The system setting value is the folder on the server that is running MAM Control Center.

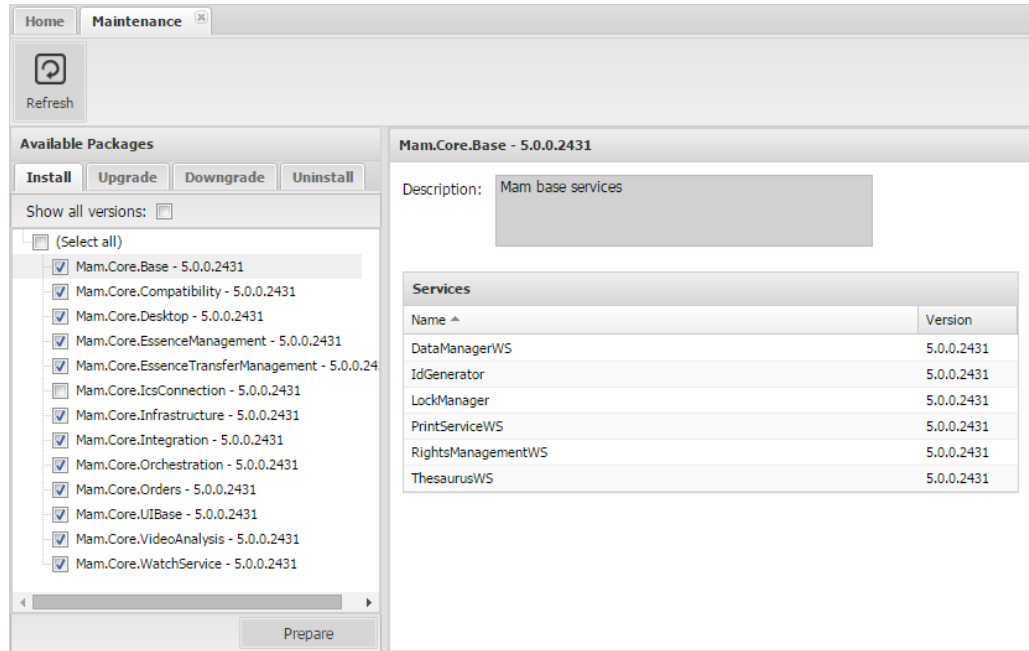
10. On MAM Control Center Home view, click Maintenance. The Maintenance view opens.



11. Click the Install tab to see the packages you can install.

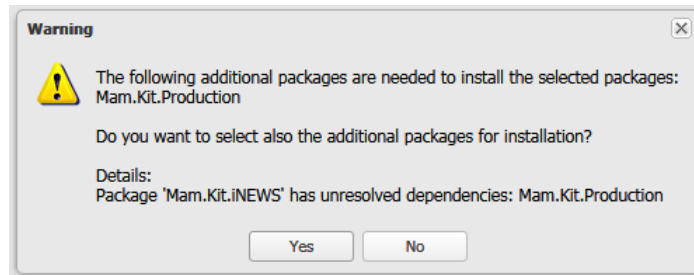


12. Select a package to see its details.



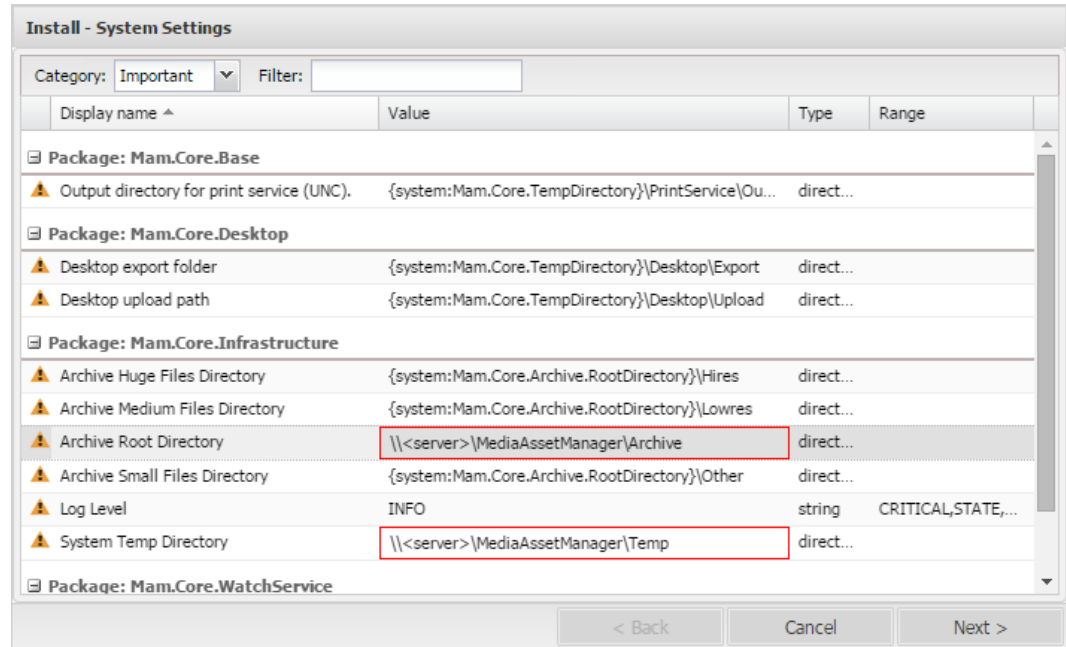
13. Select all packages you want to install and click Prepare to start the installation of the packages.

MAM Control Center verifies the dependencies between packages. A warning is shown if a package relies on a package that is not yet installed and is not selected for installation.



Click Yes to select the additionally needed package(s). If you click No, the package with unresolved dependencies cannot be installed.

If all dependencies are fulfilled, the System Settings pane is shown in the Maintenance view.



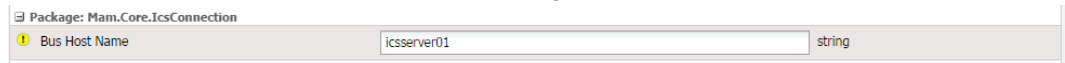
The pane shows the system settings required for the installation of the selected packages. The settings are grouped by packages.

The table shows information about the settings:

- Name: The name of the setting.
- Display name: The display name of the setting.
- Value: The value of the setting. The value can contain a reference to other system settings in the form {system:name}, where *name* is the name of the referenced setting.
- Type: The type of the setting.
  - string: A string value
  - password: A password
  - integer: An integer value
  - directory: A folder path

- Range: The allowed values for this setting. If the range is empty, there is no restriction on the allowed values.
14. (Option) Use the Category list to limit the system settings that are shown:
- Important: Shows only the most important settings. The settings are marked with an indicator in the first column.
  - Extended: Shows the important settings and advanced settings that typically have valid default values and do not need to be changed.
  - All: Shows important settings, extended settings, and hidden settings that are used internally and must not be changed.
15. (Option) Use the column menu to enable additional columns:
- Default value: The initial value defined in the installation package.
  - Description: A description of the setting.
  - Multi value: A flag defining whether the setting contains a single value or a list of values.
16. Check all settings and enter appropriate values. Enter values for settings marked with red borders to continue. After a value has been entered the red border disappears.

1. Double-click the Value column to edit a setting.



2. Enter a value.
3. Press Enter or click outside the field to confirm the changed value, or press Esc to cancel editing.

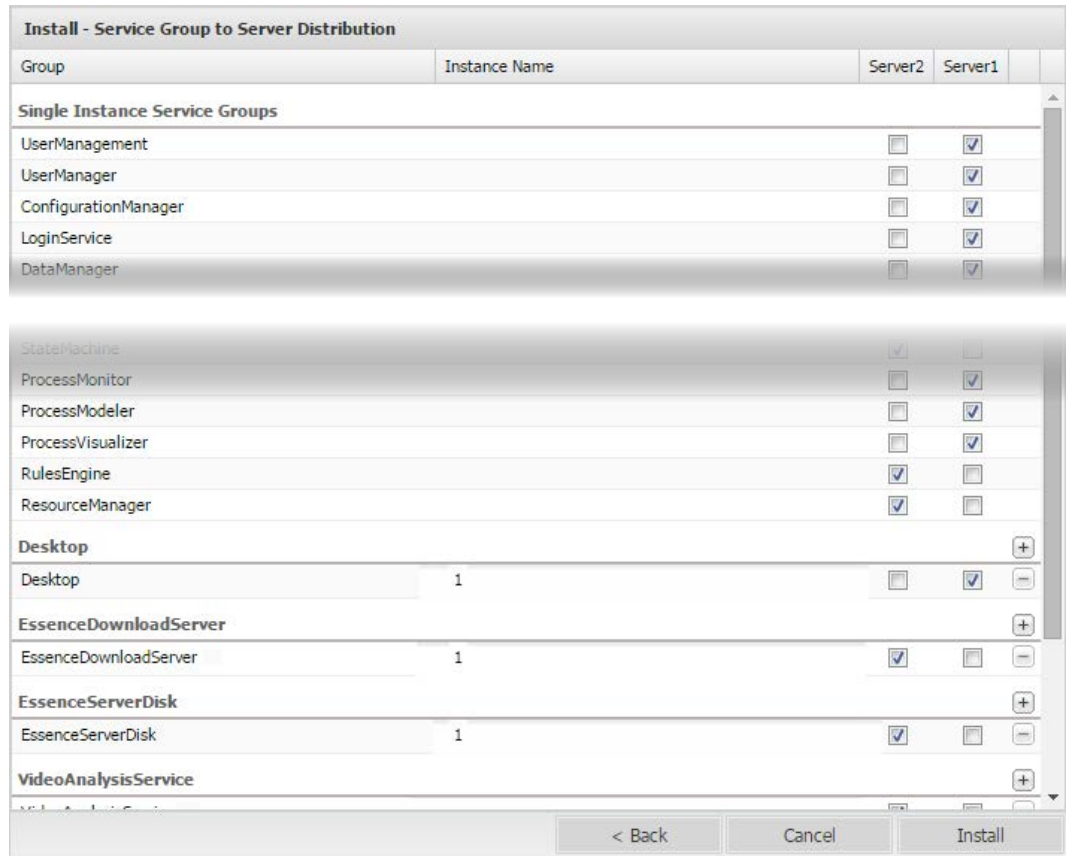
17. Click Next.

The System Settings pane is replaced by the Role to Server Distribution pane.

Install - Role to Server Distribution		
Role	Server2	Server1
Authentication	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Administration	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DataManagement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Utilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EssenceManagement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EssenceServer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UI	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VideoAnalysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Orchestration	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WatchService	<input type="checkbox"/>	<input checked="" type="checkbox"/>

< Back      Cancel      Next >

18. Assign roles to one of the servers by selecting the appropriate check box.  
A role combines a number of service groups into a functional category. Roles can be used to assign service groups quickly to the configured servers. You can fine-tune the service distribution in the next step.
19. Click Next.  
The Role to Server Distribution pane is replaced by the Service Group to Server Distribution pane.



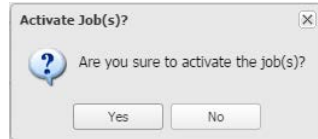
The service groups are already assigned to servers according to the distribution of roles to servers.

- Service groups that can only run in a single instance are grouped on top of the list.
  - Service groups that can run in multiple instances are shown at the end of the list.
20. (Option) Modify the distribution of the service groups to servers.
    1. Use the check boxes to change the assignment.
    2. Click the plus icon on the right-hand side to add instances. Click the minus icon to remove instances. At least one instance must remain.
  21. (Option) For multi-instance services, define a new Instance Name for each instance. Double-click the cell to edit the value. The Instance Name is used as suffix in the

identifier of the instance, the URLs of the service's web interfaces, and the name of the configuration profile.

22. Click Install.

An Activate Job(s) confirmation dialog opens.

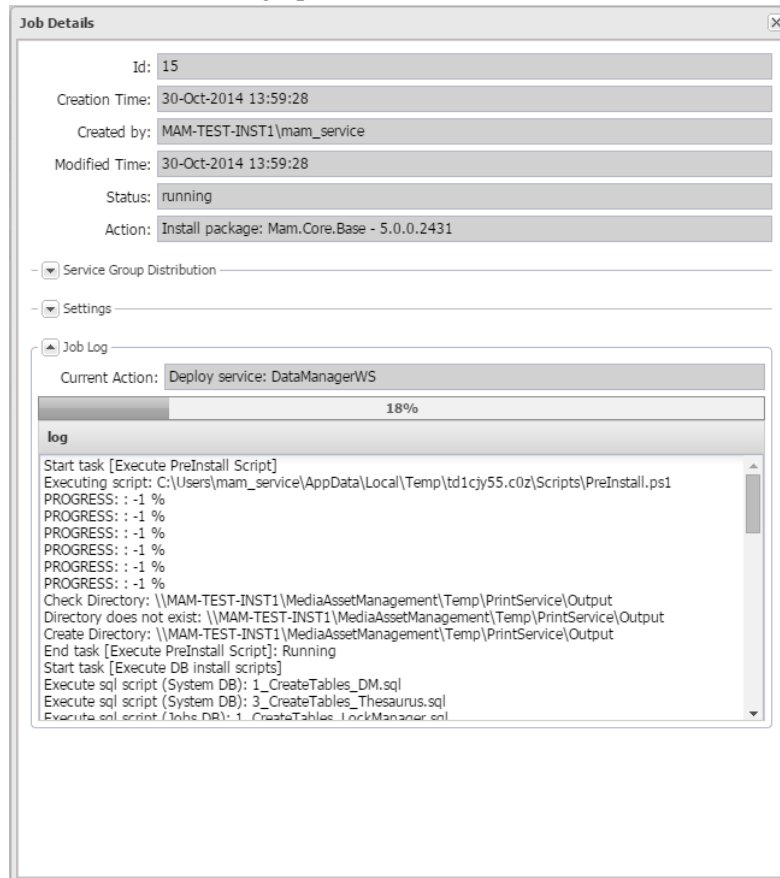


23. Click Yes to start the installation.

The Jobs view opens and the selected packages are installed.

24. Double-click a job in the Job Queue to see its details.

The Job Details dialog opens.



25. Click the Close icon or press Esc to close the Job Details dialog.

### *Installing MAM Installation Packages*

If the installation of a package fails the Status switches to failed. You can double-click the row to see the installation log. Other packages that depend on the failed package are canceled automatically.

When all packages are installed, the Interplay MAM system is up and running. You can log in to Interplay MAM Desktop and use the system.

## 3 Configuring MCS on the MCS Server

This chapter describes configuring MCS on the MCS server so that the MCS server can access the Interplay MAM folder “MediaAssetManager,” in which videos are stored.

### To configure MCS on the MCS Server:

1. To create the directory `vol1` at the root node, type: `mkdir vol1`  
[root@localhost /]# `mkdir vol1`
2. To open the directory, type: `cd vol1`  
[root@localhost /]# `cd vol1`
3. To create a new directory for your server, type: `mkdir <system-id>`  
[root@localhost vol1]# `mkdir <system-id>`
4. Return to the root.
5. To edit the file `fstab`, type: `vi /etc/fstab/`  
[root@localhost /]# `vi /etc/fstab`
6. Press `INS` to switch to edit mode.
7. At the end of the file, add a line similar to the following (including the blank spaces between “Archive” and “/vol1”):  
  

```
//<HOSTNAMEOFMAMSYSTEM>/<DataDirectory>/Archive /vol1/<system-id>  
cifs rw, mand, user=<user>,password=<pwd>
```

  
*Example:*  

```
//INTERPLAYMAM50/MediaAssetManager/Archive /vol1/FD7C43F0-A1BD-  
4499-A5D5-0406D185F69C cifs rw,mand,user=mam_service,passwd=Avid123
```
8. Press `Esc` to quit edit mode.
9. To save the changes and quit `vi`, type: `:wq`
10. To mount this mount point defined in `fstab`, type: `mount /vol1/FD7C43F0-A1BD-4499-A5D5-0406D185F69C`



## 4 Installing Interplay | MAM on Clients

Before you install Interplay MAM, make sure that:

- The installation of server components on backend servers is complete.
- MCPS is configured.
- Microsoft Internet Explorer 11.0 (32 Bit) or higher is installed on the clients.

### Available Installers

The following installers are available for Interplay MAM clients:

- **AvidInterplayMAMAdminTools:** Installs the administrative tools Datamodel Administrator, OM Configurator, Rules Administrator, SWoDL Editor, and Thesaurus Administrator. Avid recommends installing the installer on the Microsoft Windows Server operating system.
- **AvidInterplayMAMCataloger:** Installs Interplay MAM Cataloger. The installer cannot be installed on the Microsoft Windows Server operating system.
- **AvidInterplayMAMIngestClient:** Installs Interplay MAM Ingest. The installer cannot be installed on the Microsoft Windows Server operating system.

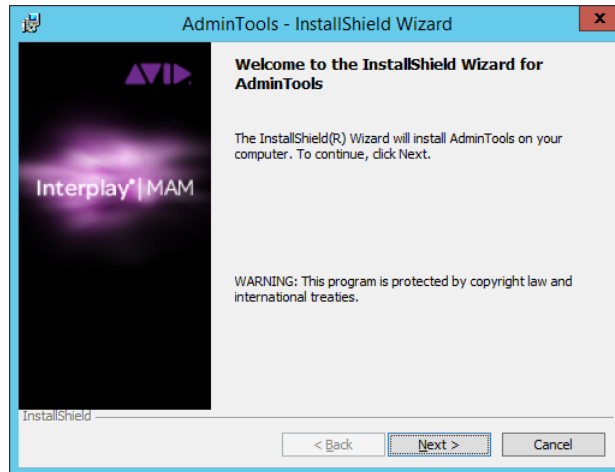
Other installers may be available, depending on the features that are available in your installation.

The installation of all installers follows the same scheme. The following chapter uses the installer for administrative tools to explain the installation procedure.

### Installing Clients

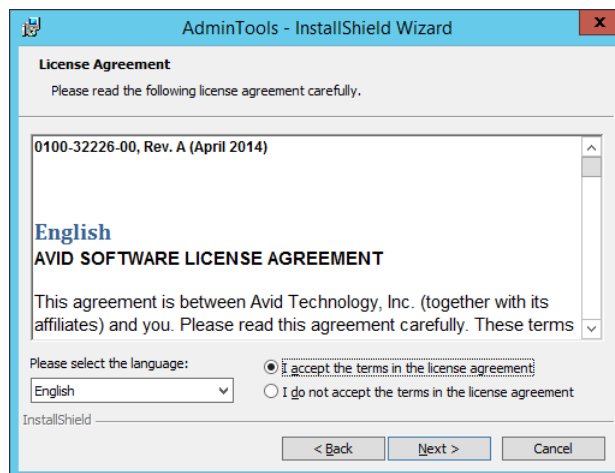
The following procedure explains the installation of the administrative tools. Interplay MAM clients can be installed in a similar way.

1. From the folder InterplayMAMClients, run the file:  
AvidInterplayMAMAdminTools \_<version\_number>.msi  
The Welcome dialog opens.

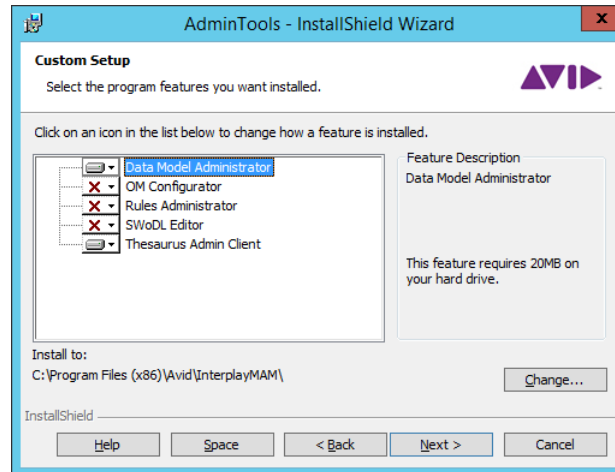


2. Click Next.

The License Agreement dialog opens.

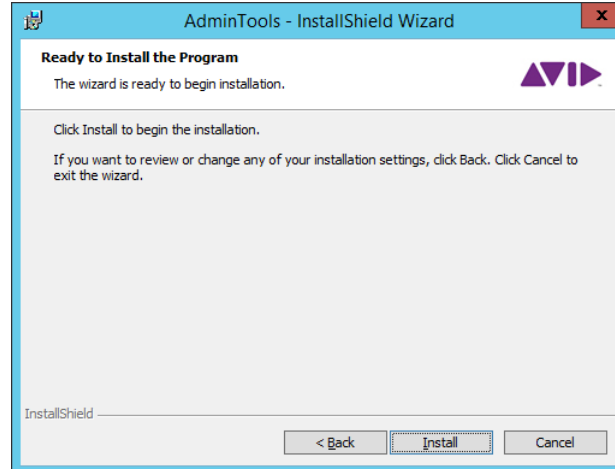


3. Select the language of the AVID SOFTWARE LICENCE AGREEMENT, and read it.
4. Select “I accept the terms in the license agreement.”  
If you do not accept the license agreement the installation terminates.
5. Click Next.  
The Custom Setup dialog opens; the components and the installation directory are preset.



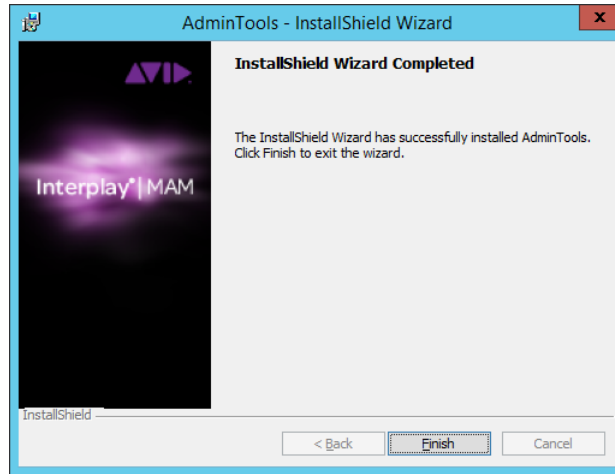
6. Enable the administration tools you want to install.  
(Option) Click Change to select a destination folder for the installation.  
(Option) Click Space to verify that the destination drive has enough free space.
7. Click Next.

The Ready to Install the Program dialog opens.



8. Click Install.  
A window that displays the installation progress opens.

9. When the installation is complete, the InstallShield Wizard Complete dialog opens.



10. Click Finish.

## Modifying the Installation

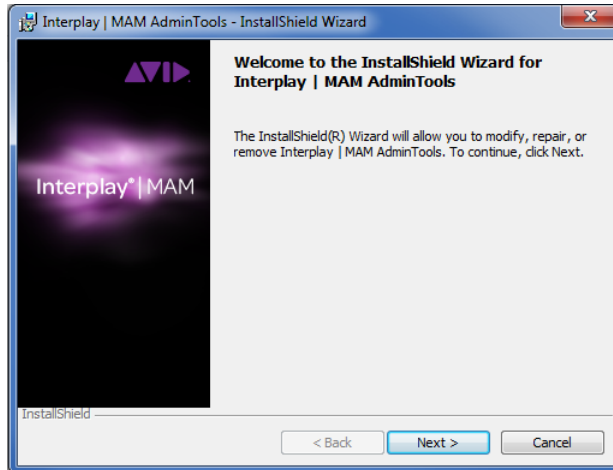
When you run the same version of the installer that was used to install the administrative tools, the Clients InstallShield Wizard offers the following options:

- **Modify:** Use this feature to install additional administrative tools or clients. The Modify feature is not intended for an update process. You cannot overwrite a client with a newer version using the Modify feature. If you want to update your installation, run a newer version of the installer.
- **Repair:** If, for example, you accidentally deleted a program file from the client installation directory, the Installer offers an auto-repair feature. Use this option to reinstall any missing program file.
- **Remove:** Use this option to remove individual administrative tools or clients from your computer. All program files, including registry entries, are removed from your local workstation.

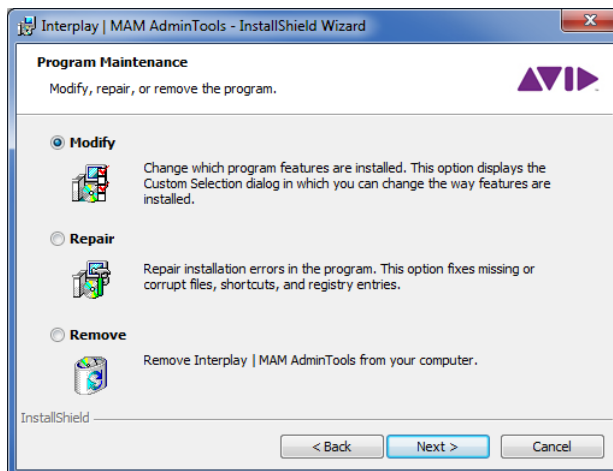
### Modifying the Client Installation

The following procedure explains how to modify the installation of the administrative tools. Interplay MAM clients can be modified in a similar way.

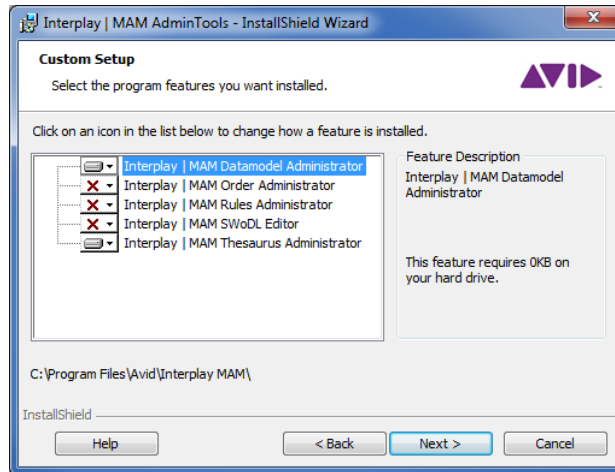
1. From the folder InterplayMAMClients, run the file AvidInterplayMAMAdminTools \_<version\_number>.msi that you used to install the administrative tools.  
The Welcome dialog opens.



2. Click Next.  
The Program Maintenance dialog opens.



3. Select Modify and click Next.  
The Custom Setup dialog opens; the components and the installation directory are preset.

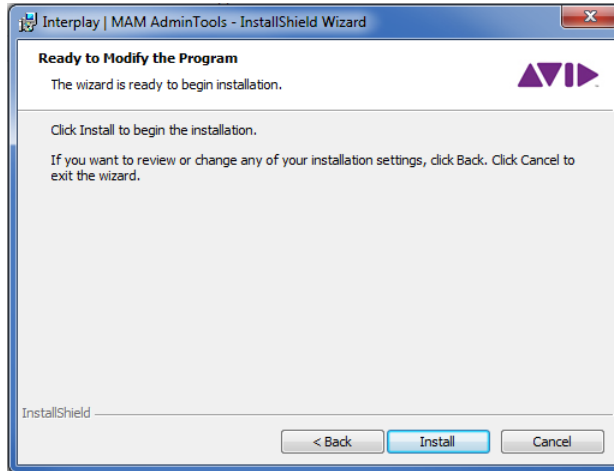


- To change how a feature is installed, click the icon in front of the client name and select another installation feature.

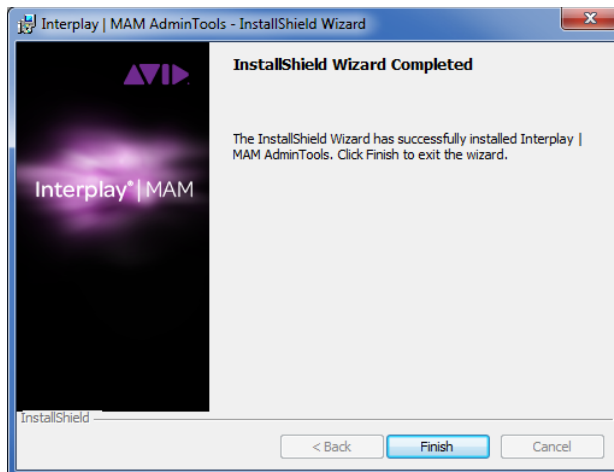
Original	Changed To	Reaction
		No change: an already installed client remains installed and is not updated.
		The client is installed.
		The client is uninstalled: its installation folder and all program files are deleted from the client installation directory.

- Click Next.

The Ready to Modify the Program dialog opens.



6. Click Install.  
A window that displays the installation progress opens.
7. When the installation is complete, the InstallShield Wizard Completed dialog opens.



8. Click Finish.

## Repairing the Installation

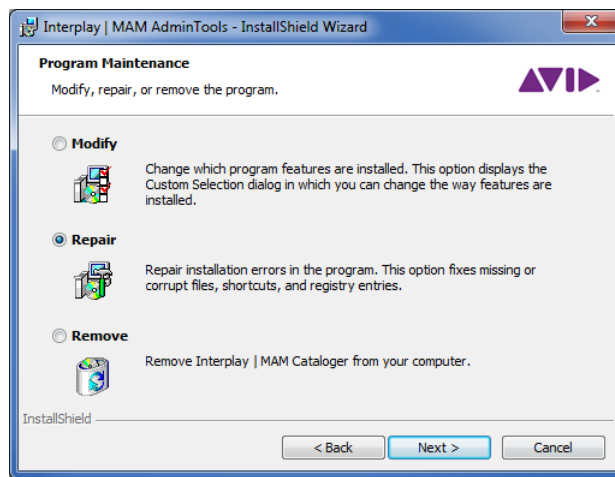
If, for example, you accidentally deleted a program file from the client installation directory, the Installer offers an auto-repair feature. The following procedure explains

how to run the auto-repair feature for administrative tools. Interplay MAM clients can be repaired in a similar way.

1. From the folder InterplayMAMClients, run the file AvidInterplayMAMAdminTools \_<version\_number>.msi that you used to install the administrative tools.  
The Welcome dialog opens.

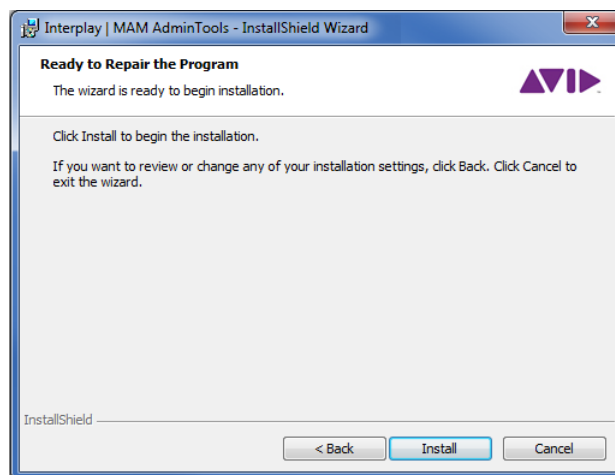
2. Click Next.

The Program Maintenance dialog opens.



3. Select Repair and click Next.

The Repair the Program dialog box opens.





4. Click Install.  
A window that displays the installation progress opens.
5. When the installation is complete, the InstallShield Wizard Completed dialog opens.
6. Click Finish.

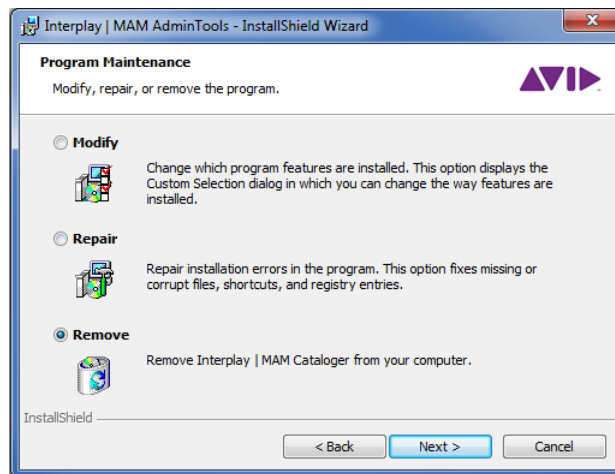
## Removing Clients

The following procedure explains how to remove all administrative tools from your computer. Interplay MAM clients can be removed in a similar way.

1. From the folder InterplayMAMClients, run the file AvidInterplayMAMAdminTools \_<version\_number>.msi that you used to install the administrative tools.  
The Welcome dialog opens.

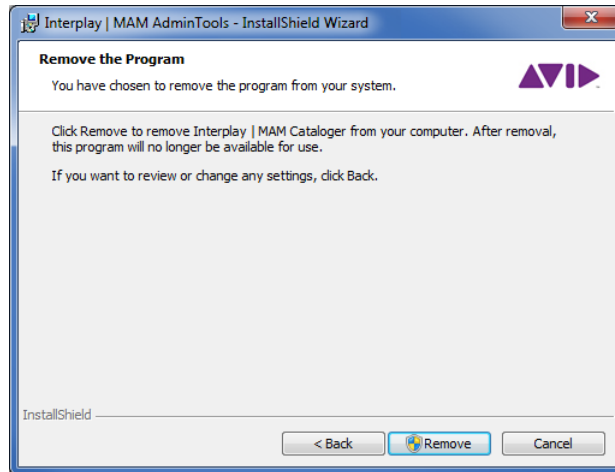
2. Click Next.

The Program Maintenance dialog opens.



3. Select Remove and click Next.

The Remove the Program dialog box opens.



4. Click Remove.  
A window that displays the uninstallation progress opens.
5. When the uninstallation is complete, the InstallShield Wizard Completed dialog opens.
6. Click Finish.

## Updating Clients

The following procedure explains the update of the administrative tools. Interplay MAM clients can be updated in a similar way.



*If you are updating from version 5.4.x or earlier to version 5.5.x you have to uninstall the installed version from the Control Panel. This is a one-time action that is not required for all subsequent installation updates.*

*If you have not uninstalled the earlier version, a Windows Installer message prompts you to do so when you run the version 5.5.x installer.*

### **To uninstall clients (updating from v5.4.x and earlier to v5.5.x):**

1. Click Start > Control Panel > Programs and Features.
2. Select Interplay | MAM Admin Tools and then select Uninstall.
3. Click Yes in the Programs and Features prompt that opens.

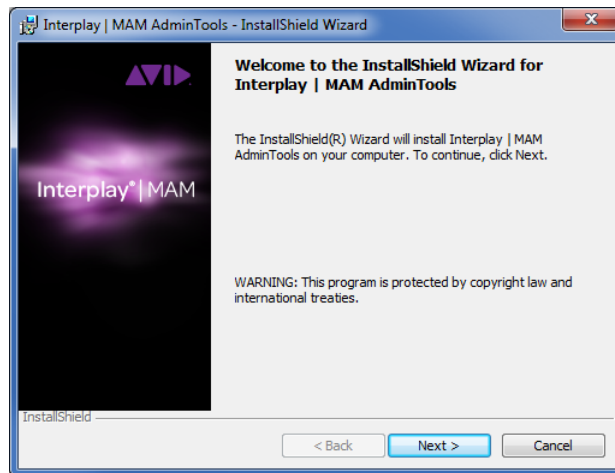
The admin tools are removed from your local workstation.

4. Install the new admin tools as described in [Installing Clients on page 49](#).

**To update the client installation:**

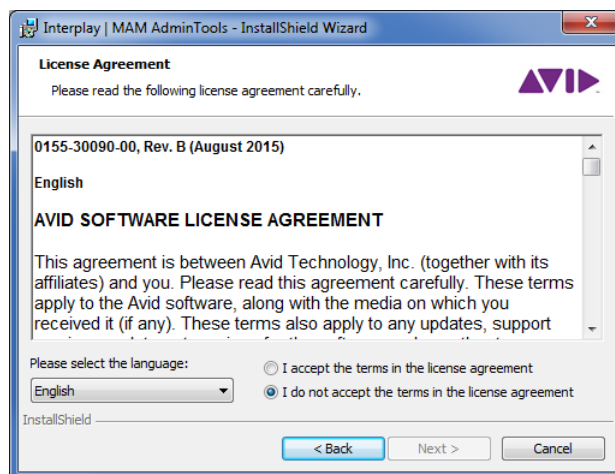
1. From the folder InterplayMAMClients, run the file:  
AvidInterplayMAMAdminTools \_<version\_number>.msi

The Welcome dialog opens.



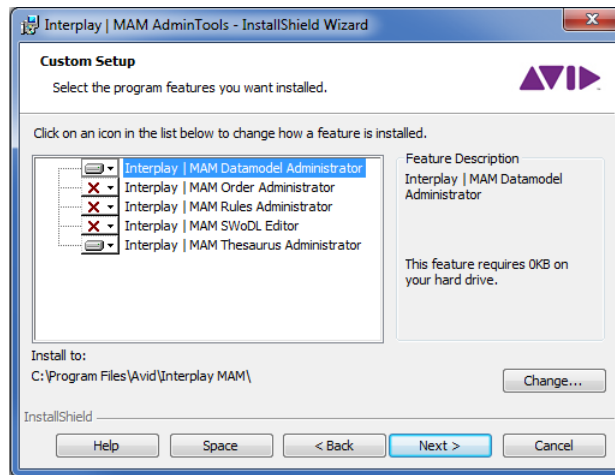
2. Click Next.

The License Agreement dialog opens.



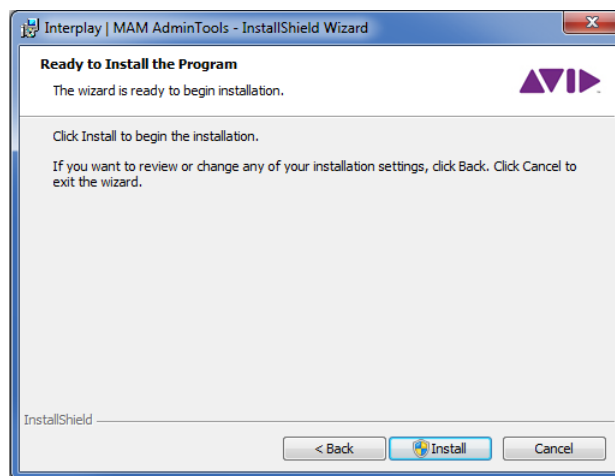
3. Select the language of the AVID SOFTWARE LICENCE AGREEMENT, and read it.

4. Select "I accept the terms in the license agreement."  
If you do not accept the license agreement the installation terminates.
5. Click Next.  
The Custom Setup dialog opens; it shows the components and the installation directory that were used for the previous installation.



6. Enable the administration tools you want to update or install.
7. Click Next.

The Ready to Install the Program dialog opens.



8. Click Install.  
A window that displays the installation progress opens.

9. When the installation is complete, the InstallShield Wizard Complete dialog opens.
10. Click Finish.

## 5 Next Steps

This section provides information about procedures to be performed after installation.

- [Configuring Interplay | MAM for Fully Qualified Domain Names](#)
- [Configuring WSM Device WS](#)
- [Configuring Interplay | MAM for Use with MediaCentral | UX](#)
- [Configuring Support for Office and PDF-Documents](#)
- [Configuring Workflow and Process Reporting](#)
- [Configuring Cleanup Rules for Workflows and Processes](#)

### Configuring Interplay | MAM for Fully Qualified Domain Names

In some installations it is necessary to use fully qualified domain names (FQDN) to access the MAM system. In this case two manual configuration steps are required:

- Modify the registry to allow FQDN on the server running MAM Control Center
- Configure Service Manager for FQDN

#### Modifying the Registry to Allow FQDN

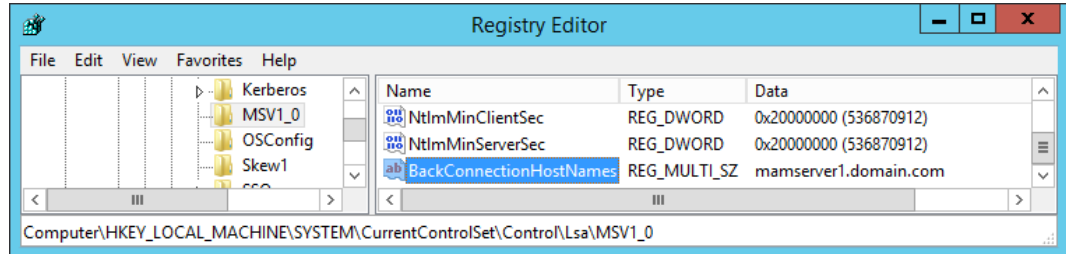
Windows has a security check that prohibits network requests from a server to itself that use NTLM authentication and fully qualified domain names. See <http://support.microsoft.com/kb/896861> for details.

If the server that is running MAM Control Center is also running MAM Control Service, configure Windows to allow self-referencing requests.

#### To modify the registry to allow FQDN:

1. Open the Registry Editor.
2. Locate the key  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa\MSV1\_0

3. Right-click MSV1\_0, point to New, and click Multi-String Value.
4. Type BackConnectionHostNames and press Enter.
5. Right-click BackConnectionHostNames and click Modify.
6. In the Value data box, enter the fully qualified domain name of the server and click OK.



7. Quit Registry Editor and restart the IISAdmin service.

## Configuring Service Manager for FQDN

This step is needed if you access Service Manager using a fully qualified domain name, for example:

<https://hostname.domain.com:9911/ServiceManagerNG/Default.aspx>

### To configure Service Manager for FQDN:

1. Open an editor (for example Notepad) as administrator.
2. Open the file “Web.Config” of ServiceManagerNG. It usually resides in C:\Program Files\Avid\MediaAssetManager\Management\_Site\ServiceManagerNG  
  
The section appSettings contains an entry with the key `MCC_hostname`, where *hostname* is the host name of the server running MAM Control Center.
3. Copy the above-mentioned entry and replace the hostname with the fully qualified domain name in two places:
  - in the XML attribute key
  - in the XML attribute value

```
<appSettings>
  <!-- original entry -->
  <add key="MCCUrl_mamserver1"
    value="https://mamserver1:9911/ControlCenter/">
  </add>
  <!-- copied entry with fully qualified domain names -->
  <add key="MCCUrl_mamserver1.domain.com"
    value="https://mamserver1.domain.com:9911/ControlCenter/">
  </add>
</appSettings>
```

## Configuring WSM Device WS

The configuration profile “WSMDeviceWS” contains the section “EssenceServers.” It has one key for each Essence Server that is accessible in Device folders. Using this section, WSMDeviceWS queries all pool and carrier information from the Essence Servers. The keys are called “Instance\_n,” where “n” is a consecutive number, starting with 1. The values are the instance IDs of the Essence Servers. The instance ID consists of the name of the service, an underscore, and the instance name. The existing instances can be seen in the Service Group Distribution tab of MAM Control Center.

Example: In a default installation there is an EssenceServerDisk with instance name “Instance”:

EssenceServerDisk		
EssenceServerDisk	Instance	<input checked="" type="checkbox"/>

In this example the instance ID is “EssenceServerDisk\_Instance.” This ID must be set as the value of the key “Instance\_1” in the configuration section.

After installation, the configuration section “EssenceServers” in the profile “WSMDeviceWS” contains the example entry “Instance\_1” with the value “EssenceServerDiskWS.” This is not a valid instance ID because it does not have an instance suffix. Since the instance name is not known at installation time, you must insert the correct value manually.

### To modify the instance name:

1. Start MAM Control Center.
2. Click the Service Group Distribution tab and verify the name and instance name of EssenceServerDiskWS.



3. Click the MAM Administrator button.
4. Open System Administrator.
5. Select the profile *WSMDeviceWS*.
6. Select the section *EssenceServers*.
7. Set the value of the *Instance\_I* key to the instance ID (<service name>\_<instance name>) that was created for *EssenceServerDiskWS* during installation.
8. Refresh the configuration of *WSMDeviceWS*.

## Configuring Interplay | MAM for Use with MediaCentral | UX

### Installing the Interplay | MAM Connector

To use Interplay MAM with MediaCentral UX, you must install the MAM Connector that enables all Interplay MAM workflows in MediaCentral UX. The supported configuration for the MAM Connector requires you to install the connector on the MCS server, which is part of your MediaCentral configuration. For additional information, see the *Avid MediaCentral Platform Services Installation and Configuration Guide*.



*If you are upgrading from MAM Connector v2.5.x or earlier, you need to clean up the previously configured Interplay MAM systems from the ACS Bus Attribute Service. See the section *Cleaning Up Interplay | MAM Systems* in the *MediaCentral Platform Services Installation and Configuration Guide*.*

### Configuring Interplay | MAM in MediaCentral | UX

After installing the Interplay MAM Connector you will have to register and configure the Interplay MAM system in MediaCentral using the MediaCentral UX. For additional information, see the *Avid MediaCentral | UX Administration Guide*.

### Whitelisting MAM IP Addresses for the ACS Gateway

Interplay MAM servers hosting services that access MediaCentral Platform Services through the BAL (Bus Access Layer) must be added to a configuration file on the MCS server. This configuration file builds a “whitelist” of systems allowed to connect to MCS for enhanced security.



*Any system that is not included in this file might encounter errors when connecting to the Bus.*

For information on how to set the IPv4 Range filter for the avid-acs-gateway service, see the chapter “Configuring Access for External Systems” in the *Avid MediaCentral Platform Services Installation and Configuration Guide v2.8*.

## Changing the Setting for the ACS Gateway Port

Starting with version 5.6, Interplay MAM provides a “GatewayPort” system setting to configure the port of the avid-acs-gateway service in MediaCentral. This port was changed in MediaCentral version 2.8.

The MAM.Core.MediaCentralConnection package installed with Interplay MAM version 5.7 provides the new value of the GatewayPort system setting. So, when doing an initial installation of Interplay MAM version 5.7, you do not have to change the setting.



*You need to update the GatewayPort setting manually in the following cases:*

- *When you are updating Interplay MAM version 5.6 to Interplay MAM version 5.7.*
- *When you are connecting an Interplay MAM version 5.6 to MediaCentral UX version 2.8.*
- *When your Interplay MAM version 5.6 is connected to MediaCentral UX version 2.7 and MediaCentral is updated to version 2.8.*

### To change the gateway port setting:

1. Sign in to Interplay MAM Control Center as an administrator.
2. Click System Settings.  
The System Settings pane opens.
3. Select Extended from the Category list to show more system settings.
4. Go to the section Package: Mam.Core.MediaCentralConnection and select the setting Mam.Core.Bus.GatewayPort.
5. Double-click the value 9500.

Package: Mam.Core.MediaCentralConnection

Mam.Core.Bus.GatewayPort	Secure Gateway Port	9500	integer
--------------------------	---------------------	------	---------

Update Cancel

6. Change the value to 9900 and click Update.
7. Open the Service Controller in MAM Control Center and restart all pools with the following names:
  - MAM\_2100\_CTC
  - MAM\_3100\_DocumentConversion
  - MAM\_6000\_WorkflowEngine

## Checking the Bus Configuration

To use Interplay MAM in MediaCentral UX, check the configuration for the ACS Bus communication. These settings have been configured during the installation of the MAM.Core.MediaCentralConnection package and should already display correct values.

### To check the BUS configuration for Interplay MAM:

1. Sign in to Interplay MAM Control Center as an administrator.
2. Start Interplay MAM Administrator from within MAM Control Center.
3. Open the System Administrator from within Interplay MAM Administrator.
4. In the Configuration tab, select the profile Global > section Bus and check the following settings:
  - HostNames: shows the name of the MCS host.
  - DefaultRealm: shows the name of the system realm. The value must be the same as the System ID that can be found in the same profile > section SystemInfo > key SystemId.

If you change a setting, you need to restart the pool MAM\_2000\_Backend2 in MAM Control Center's Service Controller.

5. Select the section SystemInfo and check if the key SystemId shows a valid value. Do not change this ID.

## Configuring Central Index for Interplay | MAM

To use Central Index for Interplay MAM in MediaCentral UX, check and adjust the following settings. These settings have been configured during the installation of the MAM.Core.MediaCentralConnection package and should already display correct values.

**To configure Central Index for Interplay MAM:**

1. Check that Media | Index services are installed and configured properly in MediaCentral and that the system data index is created. For additional information, see the *Avid Media / Index Configuration Guide*.
2. Sign in to Interplay MAM Control Center as an administrator.
3. Start Interplay MAM Administrator from within MAM Control Center.
4. Open the System Administrator from within Interplay MAM Administrator.
5. Select the profile DataManagerWS > section CentralIndex and set the value of the key MarkForSynchronization to true, if necessary.

If you change the setting, you need to refresh the configuration of the DataMangerWS or restart the pool MAM\_1000\_Backend1 in MAM Control Center's Service Controller.

6. Select the profile SyncCentralIndex > section Settings and set the value of the following keys to true.
  - EnableDataPropagation
  - EnableCBAAssignmentsPropagationOnStart (if needed)
  - SendLegalListsOnStartup (if needed)
  - SendThesauriOnStartup (if needed)

If you change a setting, you need to refresh the configuration of the SyncCentralIndex or restart the pool MAM\_2000\_Backend2 in MAM Control Center's Service Controller.

**To trigger index synchronization in Interplay MAM:**

1. Sign in to Interplay MAM Control Center as an administrator.
2. Start Interplay MAM Administrator from within MAM Control Center.
3. In Interplay MAM Administrator, open the Sync Service Administrator.
4. On the Monitor tab, select the option Synchronize all objects and click the Synchronize button.

All Interplay MAM objects are synchronized to Central Index. This can take a long time. This step is only required once after enabling synchronization. As long as

synchronization is enabled, all changes are propagated automatically to Central Index. For more information, see the *Interplay | MAM Sync Service Administrator User's Guide*.

## **Enabling Progress and Tasks Pane Updates**

To force Interplay MAM to update process information in the MediaCentral UX Progress pane and Tasks pane, check and adjust the following settings. These settings have been configured during the installation of the MAM.Core.MediaCentralConnection package and should already display correct values.

### **To enable updating the process information in the Progress and Tasks pane:**

1. Sign in to Interplay MAM Control Center as an administrator.
2. Start Interplay MAM Administrator from within MAM Control Center.
3. Open the System Administrator from within Interplay MAM Administrator.
4. In the Configuration tab, select the profile DataManagerWS > section Notification and set the value of the following keys to true, if necessary:
  - EnableProcessEvents
  - EnableUserTaskEvents

## **Checking the FTP Server Configuration for File Attachments**

Starting with version 2.5, users in MediaCentral UX can upload and download file attachments when editing a user task. Starting with version 2.6, file attachments can be uploaded to a process during process creation. Files are uploaded or downloaded by the MAM provider using an FTP server. When a user deletes a file attachment or cancels a file upload, the file is deleted from the FTP server. When a user closes the browser or tab, or the user session expires while the file upload is in progress, a delete request is sent to the FTP server. Note the following:

- The FTP servers for Interplay MAM Desktop and MediaCentral UX can be different but the FTP servers must use the same storage areas.
- Storage areas for upload and download are not required to be identical if all processes use either upload or download storage areas. If processes use both areas, they need to be identical.

- The FTP configuration for each Interplay MAM system is read from the profile MediaCentral > section ProcessAttachments/DownloadParameter and section ProcessAttachments/UploadParameter.

The following settings have been configured during the installation of the MAM.Core.MediaCentralConnection package and should already display correct values.

**To check the FTP server configuration for file attachments:**

1. Sign in to Interplay MAM Control Center as an administrator.
2. Start Interplay MAM Administrator from within MAM Control Center.
3. Open the System Administrator from within Interplay MAM Administrator.
4. In the Configuration tab, select the profile MediaCentral.
5. Select the section ProcessAttachments/DownloadParameter and check the values of its keys.
6. Select the section ProcessAttachments/UploadParameter and check the values of its keys.



*The configuration values of both sections may be different, but Avid recommends keeping them synchronized.*

## **Configuring Support for Office and PDF-Documents**

Starting with Interplay MAM version 5.7, the Document Conversion Service is used to support documents in the MediaCentral UX Documents pane.

Configuring support for Office and PDF documents consists of three steps:

1. Installing LibreOffice
2. Installing Adobe IFilter
3. Installing Microsoft Filter Pack



*Avid strongly recommends that you install the packages in the given order.*

*Installing the packages in a different order might result in a non-functional setup of the IFilters.*

## Installing LibreOffice

Install LibreOffice 5.1.2.2 on all Interplay MAM servers that are running the Document Conversion Service.

You can find the LibreOffice installer “LibreOffice\_5.1.2\_Win\_x64.msi” in the Prerequisites folder of the Interplay MAM distribution.

### To install LibreOffice:

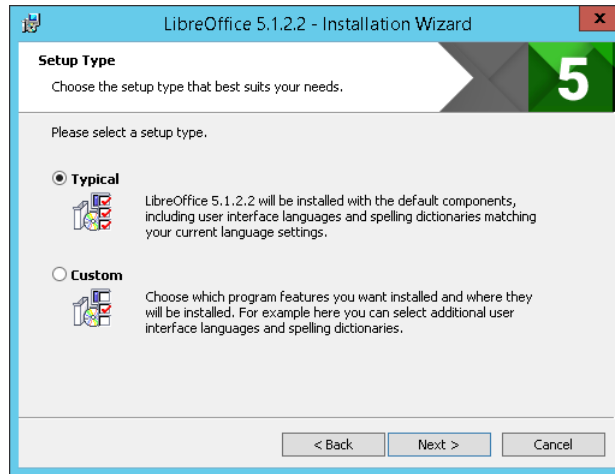
1. Start the installer.

The LibreOffice 5.1.2.2 Installation Wizard opens.



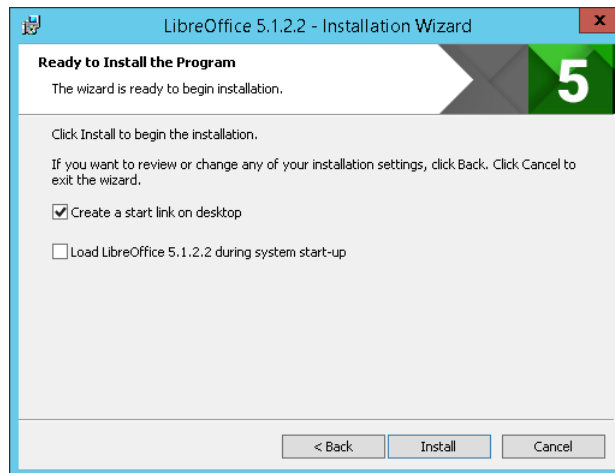
2. Click Next.

The Setup Type dialog opens.



3. Select Typical and click Next.

The Ready to Install the Program dialog opens.



4. Make sure the option “Load LibreOffice 5.1.2.2 during system start-up” is deselected.
5. Click Install to finish the installation.

## Installing Adobe IFilter

Install Adobe PDF IFilter 11 for 64-bit platforms on all Interplay MAM servers that are running the Document Conversion Service.



You can obtain the Adobe PDFFilter64Setup.msi package from <https://www.adobe.com/support/downloads/detail.jsp?ftpID=5542>

**To install Adobe IFilter:**

1. Start the installer.
2. Follow the system prompts to complete the installation.

## Installing Microsoft Filter Pack

Install the Microsoft Filter Pack 2.0 on all Interplay MAM servers that are running the Document Conversion Service.

You can obtain Microsoft FilterPack64bit.exe from <https://www.microsoft.com/en-US/download/details.aspx?id=17062>

**To install the Microsoft Filter Pack:**

1. Start the installer.
2. Follow the system prompts to complete the installation.

## Configuring Workflow and Process Reporting

Interplay MAM supports workflow and process data reporting.



*To use the workflow and process data reporting feature, the Mam.Core.Orchestration package must have been installed.*

When enabling the Reporting feature, standard reporting capabilities are activated in the system. Reporting results are written to reporting database tables. The information can be used to create reports. You can configure what is written to the reporting database: general data, extended data, user-related data, or customer-specific information.



*Reporting only applies to completed workflows and processes. Only workflows with value 2 (“Finished”) or 4 (“Error”) in the variable `_State`, and processes with value 2 (“Finished”) or 3 (“Error”) in the attribute `P_PROCESS_LIFECYCLE` are used for reporting. Data for running or suspended workflows and processes is not included in reports.*

Avid recommends enabling and configuring the Reporting feature if you also use the automatic cleanup feature for workflows and processes (see “[Configuring Cleanup Rules for Workflows and Processes](#)” on page 81). This is to ensure you can access cleaned up data for statistics at a later time.

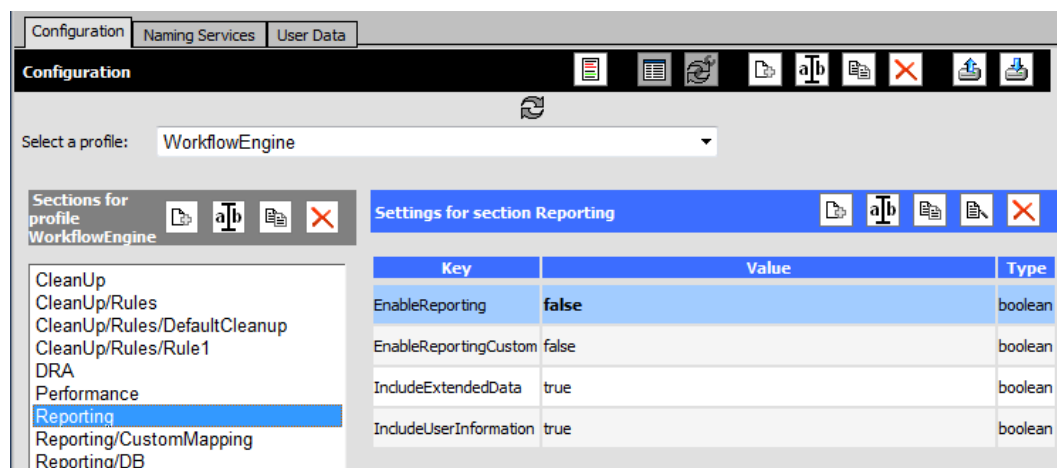
Use Interplay MAM System Administrator to enable and configure the Reporting feature. For additional information, see *Interplay | MAM Configuration Settings Reference* and *Interplay | MAM System Administrator User's Guide*.

## Configuring Workflow Reporting

Workflow script information is stored in variables. Each workflow has a set of standard variables that is used for reporting. Use MAM System Administrator to configure the workflow reporting feature as described in the following procedures.

### To configure reporting in MAM System Administrator:

1. Start MAM Control Center and click the MAM Administrator button.
2. Open System Administrator.
3. Select the profile WorkflowEngine.
4. Select the section Reporting.



5. Set the value of the EnableReporting key to “true.” General information about workflows is stored in the reporting database table “STAGEWORKFLOW”:

Database Column	Workflow Variable	Description
id	_JobID	Workflow ID
type	_Name	Workflow Type
starttime	_StartupTime	Start Time (in YYYYMMDDHHmmss

Database Column	Workflow Variable	Description
		format)
endtime	_NextStartTime	Completion Time (in YYYYMMDDHHmmss format)
runtime	-	Elapsed Time (calculated from Completion Time – Start Time) in milliseconds
status	_WorkflowStatus	English label for the Workflow status (“Finished” or “Error”)
errorflag	_State	Set to 1 if state is “Error,” otherwise set to 0
error	_ErrorMessage	Error message
priority	_Priority	Numerical value of Priority

- (Option) Change the value of the EnableReportingCustom key to “true.” Customer-specific workflow information is stored in the reporting database table “STAGEWORKFLOW\_CUSTOM.” Define which customer-specific information is written to the database in the section Reporting/CustomMapping.
- (Option) Change the value of the IncludeExtendedData key to “false” if you want to disable storing extended data. If you leave the default value “true,” the following additional information is written to the reporting database table “STAGEWORKFLOW”:

Database Column	Workflow Variable	Description
wfuserguid	UserGuid	User GUID of the workflow
wfowner	_Owner	Workflow Engine instance identifier
wfparent	_ParentID	Identifier of the superior script
wfnumchilds	_NumSubWorkflows	Subordinate workflows count
wfprocessid	_ProcessID	ID of the related process

- (Option) Change the value of the IncludeUserInformation key to “false” if you want to disable storing user-related data. If you leave the default value “true,” the

following user-related information is written to the reporting database table “STAGEWORKFLOW”:

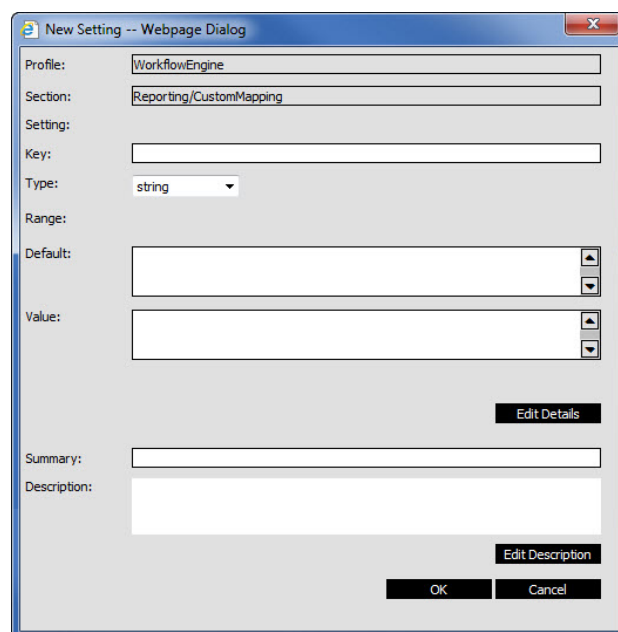
Database Column	Workflow Variable	Description
tenant	_Tenant	Tenant
user	_UserName	User login name

- Continue to configure the CustomMapping and Reporting Database settings as described in the following procedures.

**To configure custom mapping in MAM System Administrator:**

- In the WorkflowEngine profile, select the section Reporting/CustomMapping.
- Click the New Setting button.

The New Setting dialog box opens.



- In the Key text box, type the name of the workflow type — the name of the corresponding SWoDL script (without file extension) uploaded to Workflow Engine — for which data is to be included in the reporting.  
*Example: MAP\_Videoanalyse*

- b. Select string from the Type list.
  - c. Type the names of the variables in the Values text box as a comma-separated list. Variable names are case-sensitive. (Each variable results in a row in the reporting database.)  
*Example: DMGUID, EPGUID, EMGUID*
  - d. Click OK to close the New Setting dialog box and save the setting.
3. Repeat step 2 for each workflow type that is to be included in the custom reporting.
  4. (If not already done) Select the section Reporting and make sure the value of the key EnableReportingCustom is set to “true.”

Information about each object (DMGUID) and essence (EPGUID, EMGUID) analyzed by MAM Video Analysis (workflow MAP\_Videoanalyse) is written to the reporting database table “STAGEWORKFLOW\_CUSTOM.”

**To configure the reporting database in MAM System Administrator:**

The reporting database connection information is the same as for the main database. In an Interplay MAM default installation the main database is also used for the reporting feature. You can change the settings to suit your company’s needs.

1. In the WorkflowEngine profile, select the section Reporting/DB.
2. (Option) Change the following settings:

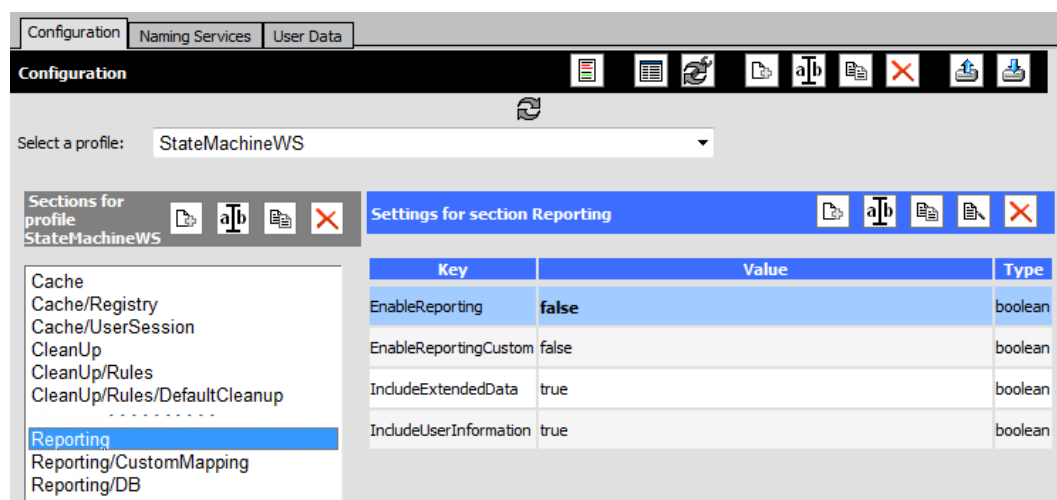
Key	Description
ConnectionString	Use the Connect string to define the database connection parameters.
LogSql	<i>Do not activate SQL logging because this reduces the performance of the WorkflowEngine, even if the log level is set to INFO or higher.</i>
LogSqlExpanded	

## Configuring Reporting on Processes

Process information is stored in attributes. Each process has a set of standard attributes that is used for reporting. Use MAM System Administrator to configure the reporting feature on processes as described in the following procedures.

**To configure reporting in MAM System Administrator:**

1. Start MAM Control Center and click the MAM Administrator button.
2. Open System Administrator.
3. Select the profile StateMachineWS.
4. Select the section Reporting.



5. Set the value of the EnableReporting key to “true.” General information about processes is stored in the reporting database table “STAGEPROCESS”:

Database Column	Process Attribute	Description
id	DMGUID	Process ID
type	Process class	Process Type
name	MAINTITLE	Process Title
startuptime	P_TASK_CREATIONDATETIME of the first task	Start Time (in YYYYMMDDHHmmss format)
endtime	P_TASK_END_DATETIME of the last task	Completion Time (in YYYYMMDDHHmmss format)
runtime	-	Elapsed Time (calculated from Completion Time – Start Time) in milliseconds
state	P_PROCESS_STATE	English label for the process state

Database Column	Process Attribute	Description
status	P_PROCESS_LIFECYCLE	English label for the process lifecycle (“Finished” or “Error”)
errorflag	P_PROCESS_LIFECYCLE	Set to 1 if the process lifecycle is “Error,” otherwise set to 0
error	P_PROCESS_ERRORMESSAGE	Error message
priority	P_PROCESS_PRIORITY	Numerical value of Priority

6. (Option) Change the value of the EnableReportingCustom key to “true.” Customer-specific process information is stored in the reporting database table “STAGEPROCESS\_CUSTOM.” Define which customer-specific information is written to the database in the section Reporting/CustomMapping.
7. (Option) Change the value of the IncludeExtendedData key to “false” if you want to disable storing task data. If you leave the default value “true,” the following task information is written to the reporting database table “STAGEPROCESSTASKS”:

Database Column	Process Attribute	Description
Tasknumber	P_TASKHISTORY order index	Task number from the MVC order index
id	P_ACTIVITY_ID	Task Identifier
type	P_TASK_TYPE	Task Type
name	P_TASK_NAME	Task Title
startuptime	P_TASK_CREATIONDATETIME	Start Time (in YYYYMMDDHHmmss format)
endtime	P_TASK_END_DATETIME	Completion Time (in YYYYMMDDHHmmss format)
runtime	-	Elapsed Time (calculated from Completion Time – Start Time) in milliseconds
state	P_TASK_STATE	English label for the task state
status	P_TASK_LIFECYCLE	English label for the task lifecycle (“Finished” or “Error”)

Database Column	Process Attribute	Description
errorflag	P_TASK_LIFECYCLE	Set to 1 if the process lifecycle is “Error,” otherwise set to 0
error	P_ERRORMESSAGE	Error message
priority	P_TASK_PRIORITY	Numerical value of Priority

- (Option) Change the value of the IncludeUserInformation key to “false” if you want to disable storing user-related data. If you leave the default value “true,” the following user-related information is written to the reporting database table “STAGEPROCESS”:

Database Column	Process Attribute	Description
tenant	SYSTEM_OBJECTOWNER	Tenant
user	REGISTRATION_USER_LOGIN	User login name

- Continue to configure the CustomMapping and Reporting Database settings as described in the following procedures.

**To configure custom mapping in MAM System Administrator:**

- In the StateMachineWS profile, select the section Reporting/CustomMapping.
- Click the New Setting button.
 

The New Setting dialog box opens.

  - In the Key text box, type the name of the process type — the name of the corresponding process definition file (without extension) uploaded to State Machine — for which data is to be included in the reporting.
  - Select string from the Type list.
  - Type the names of the process attributes in the Values text box as a comma-separated list. (Each process attribute generates a row in the reporting database.)
  - Click OK to close the New Setting dialog box and save the setting.
- Repeat step 2 for each process type that is to be included in the custom reporting.



4. (If not already done) Select the section Reporting and make sure the value of the key EnableReportingCustom is set to “true.”

Information about the categories of files imported with the Standard File Import process is written to the reporting database table “STAGEPROCESS\_CUSTOM.”

**To configure the reporting database in MAM System Administrator:**

The reporting database connection information is the same as for the main database. In an Interplay MAM default installation the main database is also used for the reporting feature. You can change the settings to suit your company’s needs. For additional information, see [“To configure the reporting database in MAM System Administrator” on page 77.](#)

## Configuring Cleanup Rules for Workflows and Processes

To reduce the size of the database and improve access speed, you can configure a script to automatically clean up historical workflows and processes. You determine what information is automatically removed from the main database, and when. The cleanup configuration involves identifying what is cleaned up, and the time and frequency of the cleanup. There are two major steps:

1. Enable and configure rules for cleanup in MAM System Administrator. See [“Configuring Rules in MAM System Administrator” on page 87.](#)
2. Configure schedules to control when cleanup is performed and what rules are to be executed in Windows Task Scheduler. See [“Scheduling Rule Execution in Windows Task Scheduler” on page 92.](#)

As an alternative, you can change the settings of the two default cleanup rules provided with your MAM installation. These rules are automatically registered in Windows Task Scheduler. See [“Using the Default Cleanup Rules” on page 82.](#)



*Cleanup rules are only applied to completed workflows and processes. Only workflows with value 2 (“Finished”) or 4 (“Error”) in the variable `_State` and processes with value 2 (“Finished”) or 3 (“Error”) in the attribute `P_PROCESS_LIFECYCLE` can be cleaned up. Running or suspended workflows and processes are not affected by automatic cleanup.*

For additional information, see *Interplay / Configuration Settings Reference* and *Interplay / MAM System Administrator User’s Guide*.

## Using the Default Cleanup Rules

Interplay MAM comes with two default cleanup rules for workflows and processes, and a corresponding task schedule configuration in Windows Task Scheduler. If you only want to use one cleanup rule for workflows and processes, the configuration is easier — you only change the default cleanup rule settings (and maybe the schedule interval) without having to create and configure the cleanup feature from scratch.

If you want to create new cleanup rules and configure their execution in Windows Task Scheduler, see [“Configuring Rules in MAM System Administrator” on page 87](#) and [“Scheduling Rule Execution in Windows Task Scheduler” on page 92](#).

The Interplay MAM default cleanup configuration can be found as indicated for the following applications.

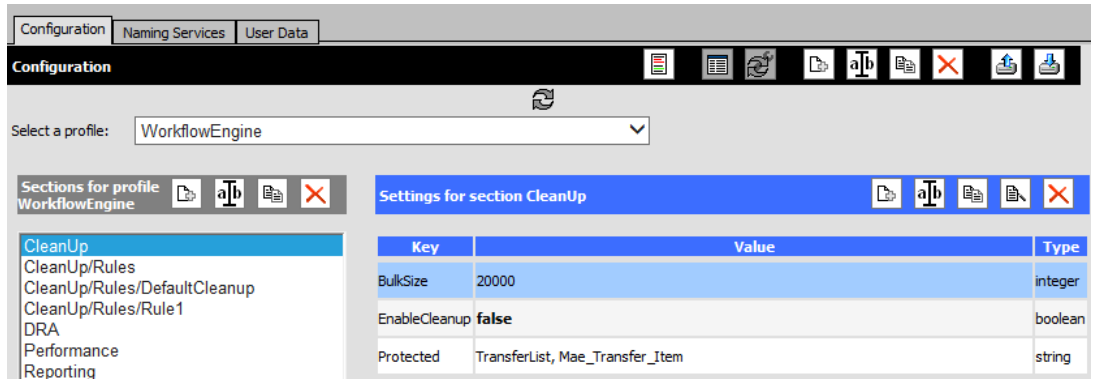
Application	Description
MAM System Administrator	<p>In MAM System Administrator, the preconfigured cleanup rules are found in:</p> <ul style="list-style-type: none"><li>• profile WorkflowEngine &gt; CleanUp/Rules/DefaultCleanup (for workflows)</li><li>• profile StateMachineWS &gt; CleanUp/Rules/DefaultCleanup (for processes)</li></ul> <p>These are templates that contain all required settings with default values; cleanup is disabled by default. Enable cleanup and change the values to your needs in both profiles.</p>
Windows Task Scheduler	<p>Windows Task Scheduler shows the following preconfigured tasks:</p> <ul style="list-style-type: none"><li>• DefaultWorkflowCleanup</li><li>• DefaultProcessCleanup</li></ul> <p>If State Machine WS and Workflow Engine are distributed on different servers, DefaultWorkflowCleanup is configured in Windows Task Scheduler on the server where Workflow Engine is running, and DefaultProcessCleanup is configured in Windows Task Scheduler on the server where State Machine WS is running.</p> <p>Both scheduled tasks are properly configured and reference the corresponding DefaultCleanup rule configured in MAM System Administrator.</p>

### To reconfigure the default cleanup rules in MAM System Administrator:

1. Start MAM Control Center and click the MAM Administrator button.

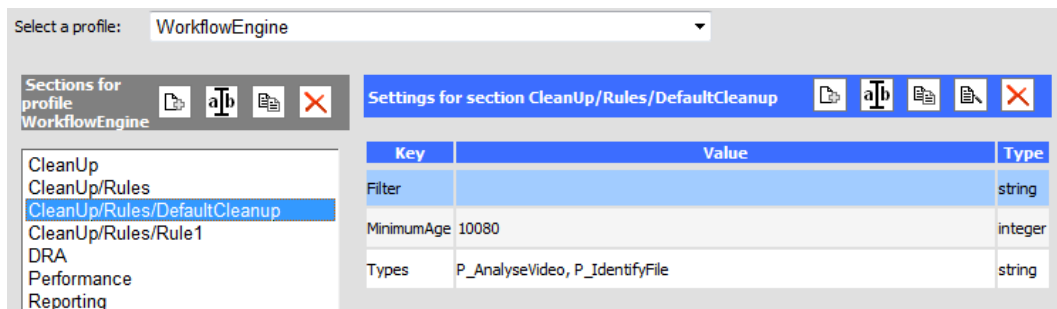
## Configuring Cleanup Rules for Workflows and Processes

2. Open System Administrator.
3. Select the profile WorkflowEngine.
4. Select the section CleanUp and change the settings:




Key	Description
EnableCleanup	Set the value of the EnableCleanup key to “true” to enable all cleanup rules specified in the CleanUp/Rules subsection. By doing so you ensure that the automatically distributed default schedule task can execute the DefaultCleanup rule.
Protected	Enter the names of workflows that are to be excluded from automatic cleanup as a comma-separated list. Clear the value if no workflows are to be excluded from cleanup.
BulkSize	(Option) Defines how many workflows can be cleaned up in a single run. The recommended value is 20,000; the maximum value is 100,000. The value you set can influence the frequency of cleanup task execution scheduled in Windows Task Scheduler.

5. Select the CleanUp/Rules/DefaultCleanup subsection and change the settings:



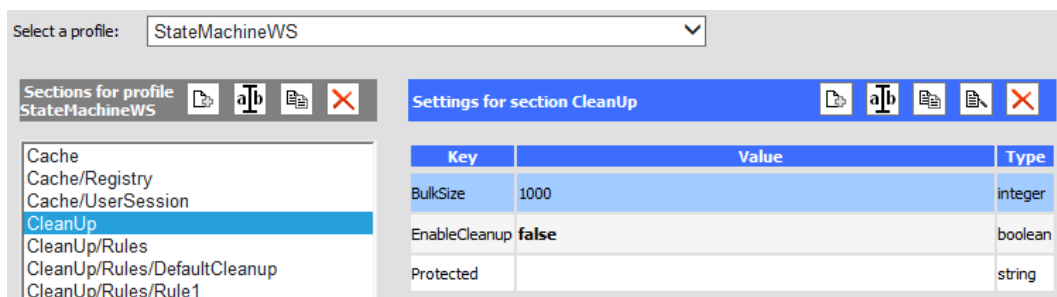
Key	Description
Types	The names of the workflow types to which the rule applies, given as a comma-separated list. The name you enter must match the name of the corresponding SWoDL script (without file extension) uploaded to Workflow Engine.
MinimumAge	(Option) Defines the minimum delay in minutes before a completed workflow can be cleaned up. If you set the value to 0, the workflow can be immediately cleaned up after it has terminated. The default value of 10080 represents a week.
Filter	(Option) Defines an attribute-level filter to determine which specific workflows are cleaned up. The filter is given as an XML expression.

 **Avid strongly recommends only using the Filter setting if you have fundamental knowledge of the Interplay MAM script language SWoDL. If you use the wrong variables you will cause extreme load on the database, negatively impacting system performance. For information on how to define a filter, see “Configuring Rules in MAM System Administrator“ on page 87.**

6. Change the default cleanup rule for processes:
  - a. Select the profile StateMachineWS.
  - b. Select the section CleanUp and repeat step 4 (above).

Note the following differences:

- The process name entered for the Protected key must match the name of the corresponding process definition file (without extension) uploaded to State Machine.
- Values for the BulkSize key are lower than they are for workflows. For processes, 1,000 is recommended; the maximum value is 10,000.



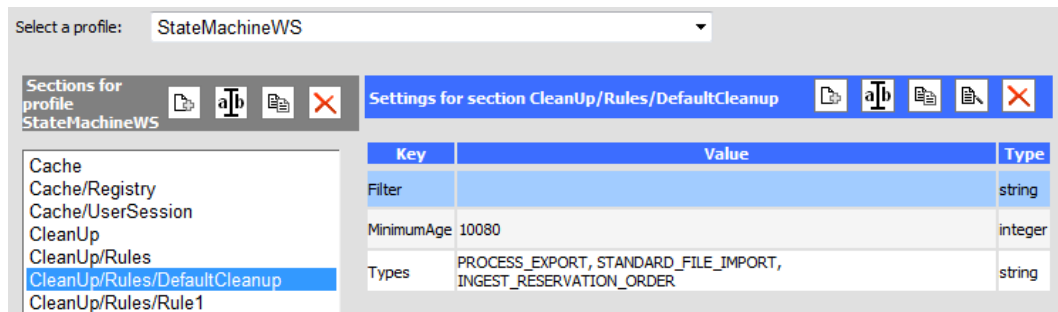
The screenshot shows the configuration interface for the StateMachineWS profile. The 'Sections for profile StateMachineWS' list includes Cache, Cache/Registry, Cache/UserSession, CleanUp (selected), CleanUp/Rules, CleanUp/Rules/DefaultCleanup, and CleanUp/Rules/Rule1. The 'Settings for section CleanUp' table is as follows:

Key	Value	Type
BulkSize	1000	integer
EnableCleanup	false	boolean
Protected		string

## Configuring Cleanup Rules for Workflows and Processes

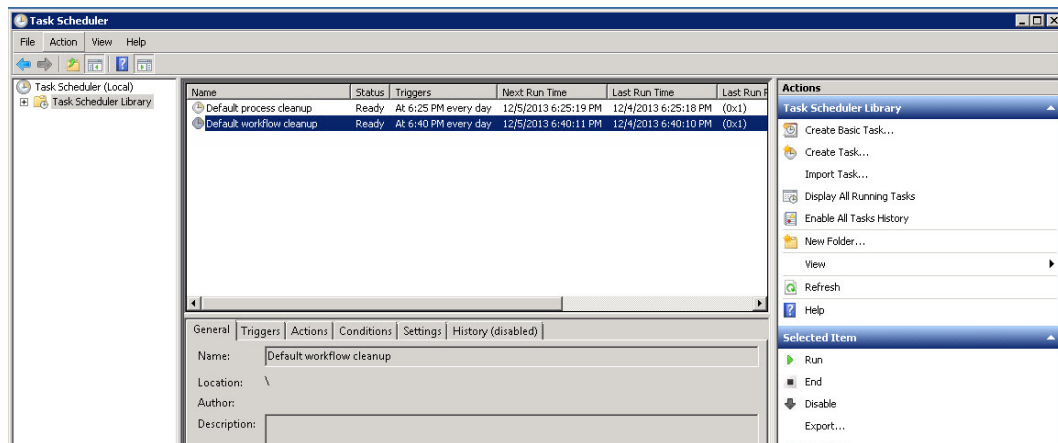
- c. Select the CleanUp/Rules/DefaultCleanup subsection and repeat step 5 (above).

The process name entered for the Types key must match the name of the corresponding process definition file (without extension) uploaded to State Machine.



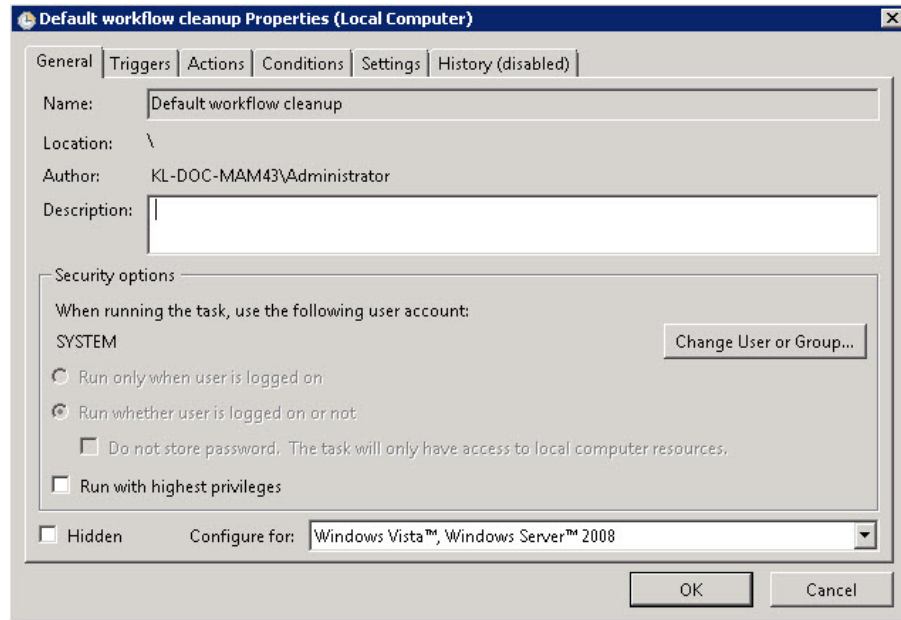
### To reconfigure cleanup rule execution in Windows Task Scheduler:

1. Start Windows Task Scheduler (Start > Control Panel > Administrative Tools > Task Scheduler):
  - on the server where Workflow Engine is running to change the DefaultWorkflowCleanup schedule task
  - on the server where State Machine WS is running to change the DefaultProcessCleanup schedule task

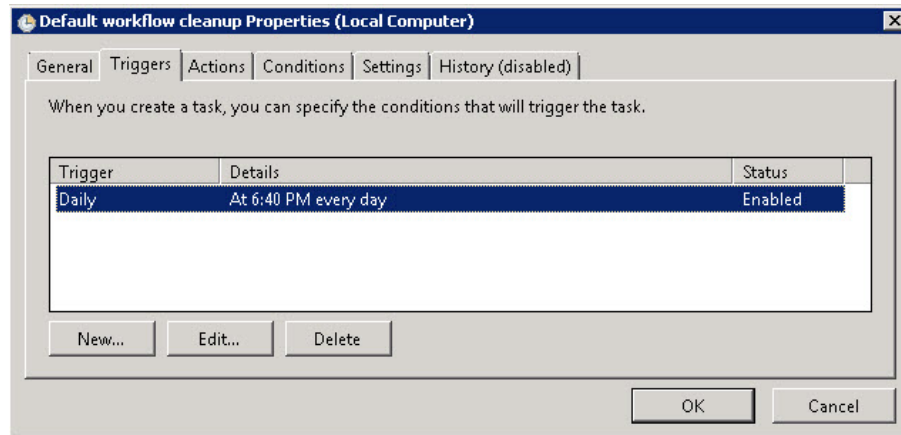


2. Double-click the default cleanup schedule task.  
The Properties dialog box opens.

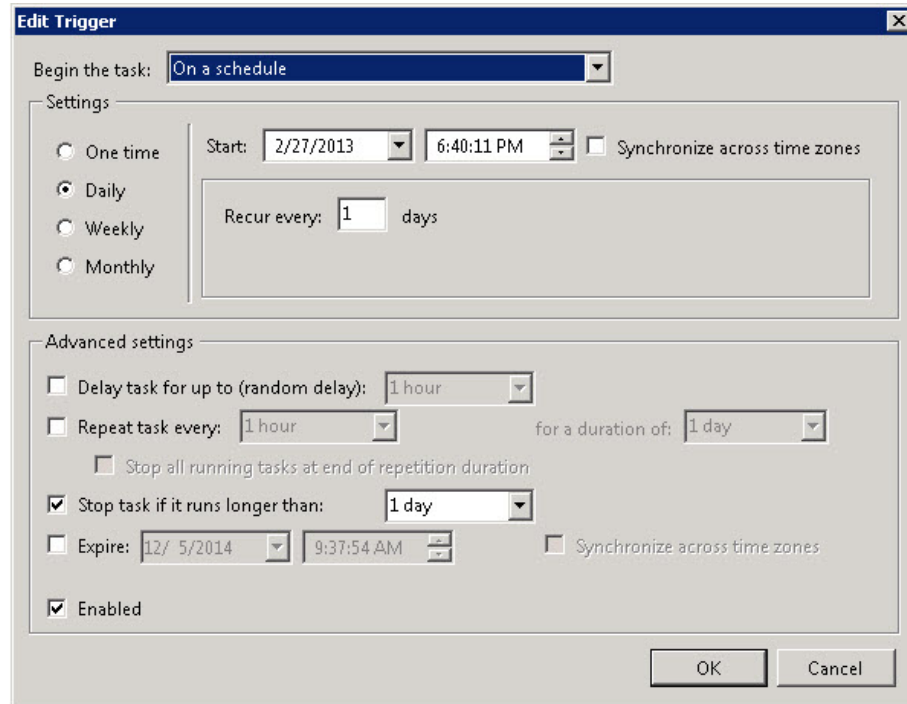
## Configuring Cleanup Rules for Workflows and Processes



3. Click the Triggers tab, select the trigger and click Edit.



The Edit Trigger dialog box opens.



4. Change the trigger settings as needed. For example, you may want to change the start time or frequency of the cleanup.



*The frequency of task execution is influenced by the maximum number of workflows or processes that can be deleted in a single run (set in MAM System Administrator > profile WorkflowEngine or StateMachine > section CleanUp > key BulkSize).*

5. Click OK to close the Edit Trigger dialog.
6. Click OK to close the Properties dialog box.
7. Close Windows Task Scheduler.

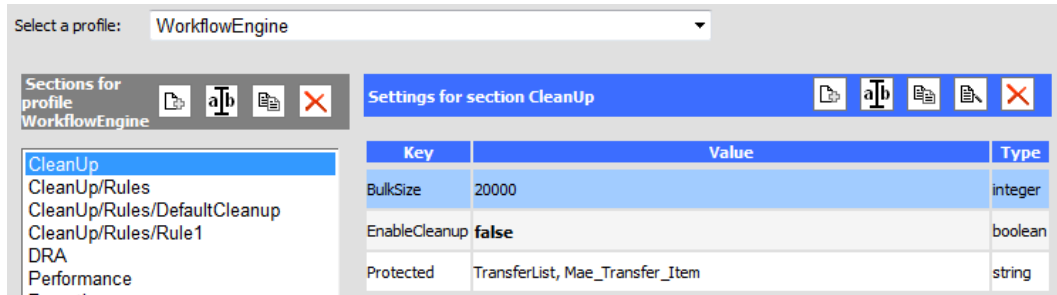
## Configuring Rules in MAM System Administrator

Use MAM System Administrator to configure new cleanup rules for workflows and processes as described in the following procedure.

### To configure cleanup in MAM System Administrator:

1. Start MAM Control Center and click the MAM Administrator button.

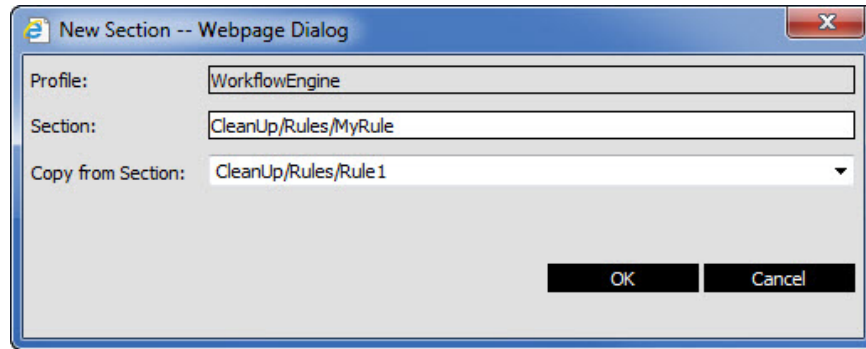
2. Open System Administrator.
3. Select the profile WorkflowEngine.
4. Select the section CleanUp and change the settings:



- a. Set the value of the EnableCleanup key to “true.” This enables all cleanup rules specified in the CleanUp/Rules subsection. Doing so ensures that the cleanup rule can be executed by its referenced schedule task. See [“Scheduling Rule Execution in Windows Task Scheduler” on page 92.](#)
  - b. (Option) Change the value of the BulkSize key to define how many workflows can be cleaned up in a single run. The recommended value is 20,000; the maximum value is 100,000. The value set can influence the frequency of cleanup task execution scheduled in Windows Task Scheduler.
  - c. (Option) Enter the names of workflows that are to be excluded from automatic cleanup as a comma-separated list in the Value box of the Protected key. Clear the value if no workflows are to be excluded from cleanup.
5. Select the CleanUp/Rules section and define the cleanup rule. To do this, create a subsection by copying the settings of the template rule CleanUp/Rules/Rule1:
    - a. Click the New Section button.

The New Section dialog box opens.





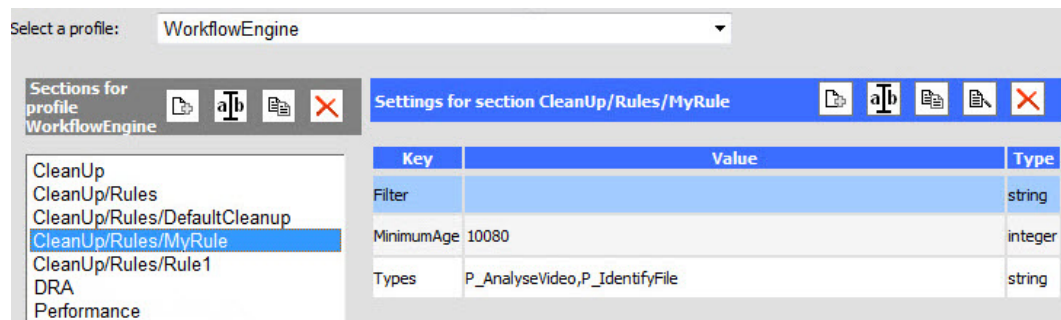
- b. Type the name in the Section text box. Adhere to the scheme CleanUp/Rules/<rule name>.

You will later use this name as <action argument> in Windows Task Scheduler to configure the scheduled execution of the cleanup rule. See “[Scheduling Rule Execution in Windows Task Scheduler](#)” on page 92.

- c. Select CleanUp/Rules/Rule1 from the Copy from Section list.
- d. Click OK.

The New Section dialog box is closed. The new rule is shown as a subsection of CleanUp/Rules. It contains the copied default settings.

- 6. Select the new CleanUp/Rules/<rule name> subsection and define the settings:



- a. (Option) Define an attribute-level filter in the Value box of the Filter key to determine the specific workflows to be cleaned up. If no filter is defined, all workflows of all types defined in the Types key will be cleaned up. Specify the filter as an XML filter expression. Example:

Key	Value
Filter	<filter><and><greater var="_StartUpTime">20131101</greater><not><equal var="_State">4</equal></not></and></filter>

The root element is “filter.” It contains one of the following:

- A comparison node: The node name is “greater,” “greaterorequal,” “lesser,” “lesserorequal,” “like,” or “equal.” The node must have an attribute 'var' containing a SWoDL variable name. The text node contains the value that is compared with the variable value. Example: <greater var='\_StartupTime'>20131101</greater> matches all workflows with a value greater than 20131101 (November 1, 2013) as the variable StartupTime.
- A logical expression node. The node name is “and,” “or,” or “not.” An expression node can contain an arbitrary number of logical expression nodes and comparison nodes. Only the “not” expression is limited to a single logical expression node or comparison node. Example: <not><equal var='\_State'>4</not> excludes all workflows with the value 4 (= Error) in the variable State.

The example filter would clean up all workflows that have been started after November 1, 2013, and have not finished in Error state.



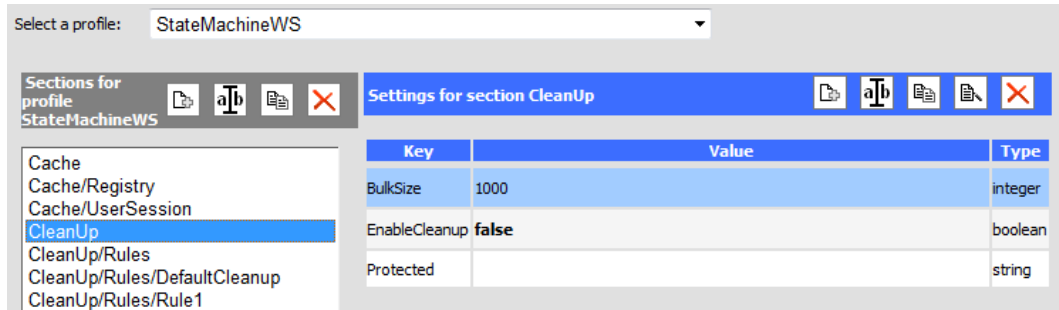
**Avid strongly recommends only using the following workflow variables as a filter:** \_ErrorMessage, \_ErrorNumber, \_JobID, \_LastModified, \_Name, \_NextActivity, \_NextStartTime, \_NumActivities, \_NumSubWorkflows, \_Owner, \_ParentGuid, \_RunTime, \_StartupTime, \_State, \_SWoDLHistory, \_SWoDLLineNumber, \_UserData, \_UserGuid, \_WorkflowStatus.

**If you use a variable not included in this list you will cause extreme load on the database and negatively impact system performance.**

For additional information, see *Interplay | MAM Search Syntax* and *Interplay | MAM SWoDL Reference*.

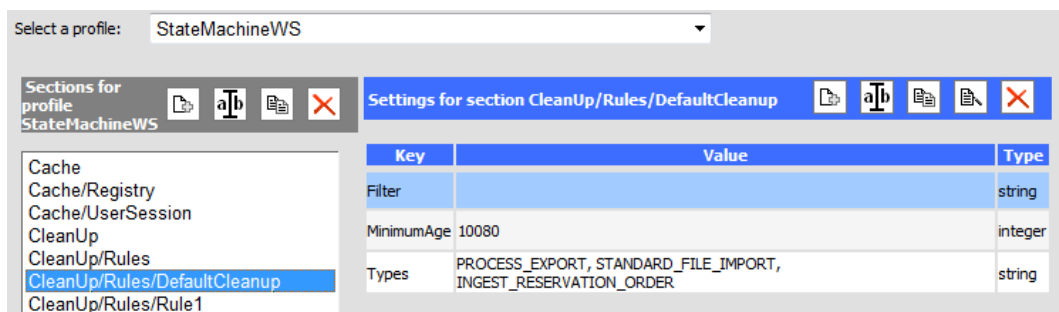
- b. (Option) Define the minimum delay in minutes before a completed workflow can be cleaned up in the Value box of the Minimum Age key. If you set the value to 0, the workflow can be immediately cleaned up after it has terminated. The default value of 10080 represents a week.
  - c. Type the names of the workflow types to which the rule applies as a comma-separated list in the Value box of the Types key. The name entered must match the name of the corresponding SWoDL script (without file extension) uploaded to Workflow Engine.
7. Repeat steps 5 through 6 for each cleanup rule you want to use.

8. Configure cleanup rules for processes:
  - a. Select the profile StateMachineWS.
  - b. Select the section CleanUp and repeat step 4 (above).



Note the following differences:

- The process name entered in the Protected key must match the name of the corresponding process definition file (without extension) uploaded to State Machine.
  - Values for the BulkSize key are lower than they are for workflows — for processes, 1,000 is recommended; the maximum value is 10,000.
- c. Select the CleanUp/Rules/DefaultCleanup subsection and repeat steps 5 through 7.



The process name entered in the Types key must match the name of the corresponding process definition file (without extension) uploaded to State Machine.

## **Scheduling Rule Execution in Windows Task Scheduler**

Use Windows Task Scheduler to schedule workflow and process cleanup in regular cycles, as described in the following procedure. Unless explicitly stated there is no difference in the procedure for scheduling a workflow or process cleanup task.

### **To schedule cleanup rule execution in Windows Task Scheduler:**

1. Start Windows Task Scheduler (Start > Control Panel > Administrative Tools > Task Scheduler):
  - on the server where Workflow Engine is running to schedule cleanup rule execution for workflows
  - on the server where State Machine WS is running to schedule cleanup rule execution for processes
2. Do one of the following:
  - ▶ Import a previously configured and exported Task Scheduler task. Continue with step 3.
  - ▶ Create a new schedule task. Continue with step 4.
3. (Option) To import a schedule task, do the following:
  - a. Click Import Task.
  - b. Navigate to the save directory of the task, select the task XML file and click Open.

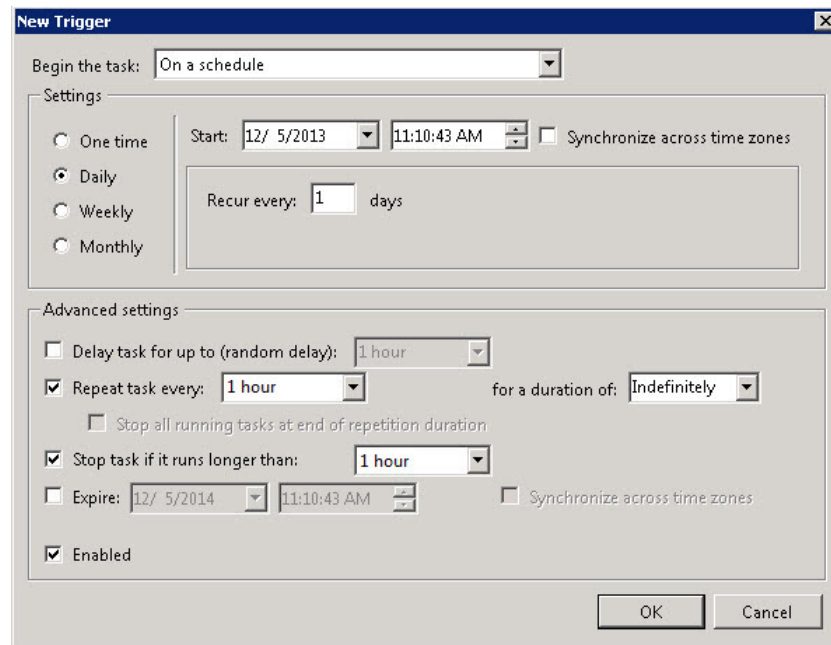
The Create Task dialog box opens and displays the settings of the imported task.
  - c. Click OK.

The Create Task dialog box is closed. The imported task is added to the Task Scheduler Library and executed as configured.
4. Click Create Task.

The Create Task dialog box opens.
5. Configure the following in the General tab:
  - a. Type a name in the Name text box.

- b. Select the “Run whether user is logged on or not” option button.
  - c. Leave the other default settings.
6. Click the Triggers tab and configure the following:
- a. Click New.

The New Trigger dialog box opens.



- b. Select “On a schedule” from the Begin the task list.
- c. Select the Daily option button, make sure 1 is shown in the “Recur every ... days” box, and use the Start lists to define the day the task begins and the time at which it is to be executed each day.
- d. (Option) Click the “Repeat task every” check box, select 1 hour from the list, and select Indefinitely from the “for a duration of” list.

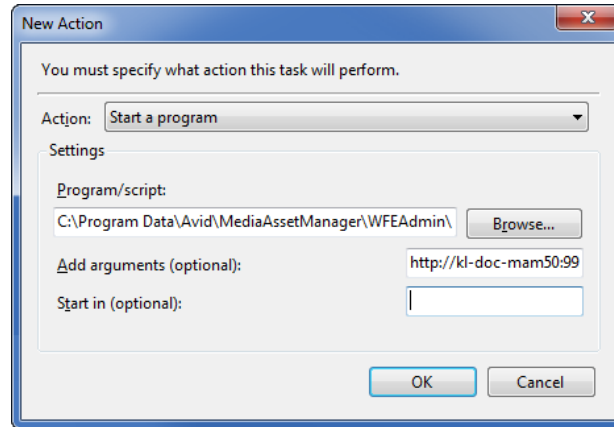


*The frequency of task execution is influenced by the maximum number of workflows or processes that can be deleted in a single run (set in MAM System Administrator > profile WorkflowEngine or StateMachine > section CleanUp > key BulkSize).*

- e. Click the “Stop task if it runs longer than” check box and select a value that matches the options you set in steps c and d from the list (1 day or less).

- f. Leave the other default settings as shown in the figure above and click OK.
7. Click the Actions tab and configure the following:
    - a. Click New.

The New Action dialog box opens.

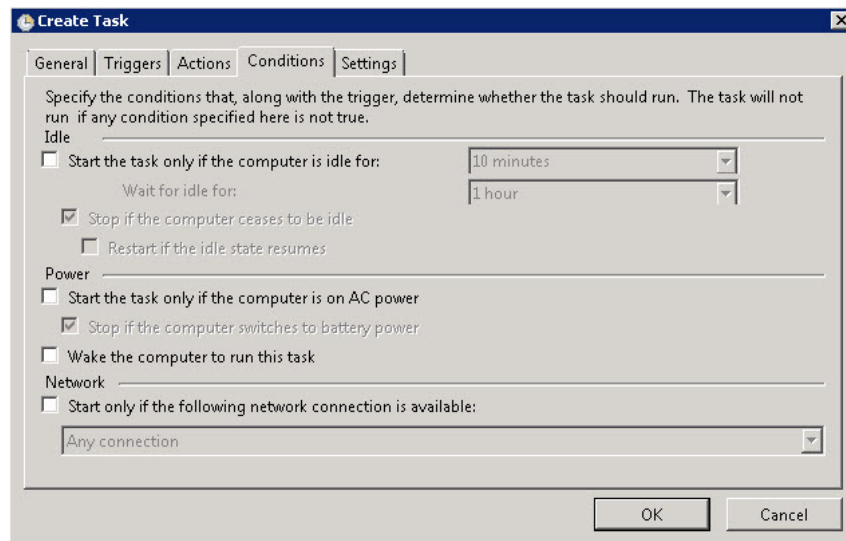


- b. Select “Start a program” from the Action list.
- c. Type the path and name of the cleanup program in the Program/script text box. The form must be:
  - For a workflow:  
 <InterplayMAM DataDirectory>\WFEAdmin\wfeadmin.exe  
 Example: C:\Program Data\Avid\MediaAssetManager\Data\WFEAdmin\wfeadmin.exe
  - For a process:  
 <InterplayMAM DataDirectory>\STMAdmin\stmadmin.exe  
 Example: C:\Program Data\Avid\MediaAssetManager\Data\STMAdmin\stmadmin.exe
- d. Specify the arguments for the cleanup task in the “Add arguments (optional)” text box. The form must be:  
 <ConfigurationService>[blank]/user:<user>[blank]/pwd:<password>[blank]<action>[blank]<action arguments>

Argument	Meaning
<ConfigurationService>	The base URL of the registry.

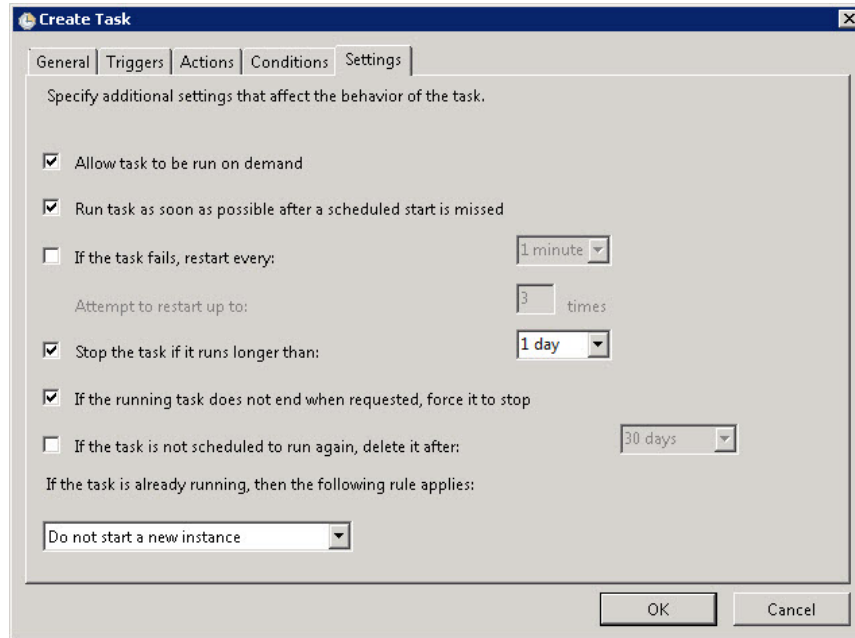
Argument	Meaning
	Example: http://kl-doc-mam50:9910/ControlCenter/ConfigurationService
/user:<user>	The Interplay MAM user login. In a default installation this is “admin.” If you do not provide the user, the execution of the cleanup rule will terminate. Example: /user:admin
/pwd:<password>	The password for the MAM user login. In a default installation this is “nimda.” If you do not provide the password, the execution of the cleanup rule will terminate. Example: /pwd:nimda
<action>	An action to perform. This is “cleanup.”
<action arguments>	The required arguments of the action previously specified. This must be the name of the cleanup rule as configured in the profile StateMachineWS or WorkflowEngine. See <a href="#">“Configuring Rules in MAM System Administrator” on page 87.</a> Example: DefaultCleanup

8. Click the Conditions tab and configure the following:



- Deselect the “Start the task only if the computer is on AC power” check box.
- Leave the other default settings as shown in the figure above.

9. Click the Settings tab and configure the following:



- a. Click the “Run task as soon as possible after a scheduled start is missed” check box.
- b. Leave the other default settings as shown in the figure above.
- c. Click OK.

The Create Task dialog box is closed. The new task is added to the Task Scheduler Library and executed as configured.



## 6 Updating Interplay | MAM Backend Components

Updating Interplay MAM Backend components consists of three steps:

1. Update MAM Control Service on all Interplay MAM servers. For more information, see [“Updating MAM Control Service” on page 97](#).
2. Update MAM Control Center. For more information, see [“Updating MAM Control Center” on page 103](#).
3. Update the required MAM installation packages for your system. For more information, see [“Updating MAM Installation Packages” on page 108](#).

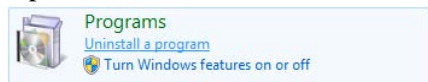
### Updating MAM Control Service

Update MAM Control Service on all Interplay MAM servers that are running the Windows Server operating system. MAM Control Service is updated in two steps:

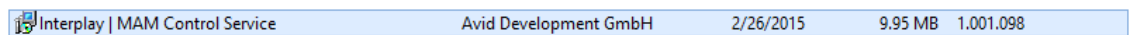
1. Uninstall the old version of MAM Control Service in a mode that uninstalls the service but no other data.
2. Install the new version of MAM Control Service using the existing data.

#### To uninstall MAM Control Service and keep the data:

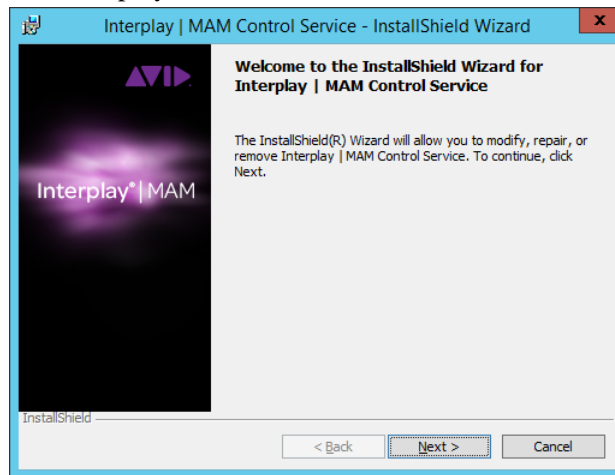
1. Open the Windows Control Panel and select Uninstall a program.



2. Double-click Interplay | MAM Control Service.

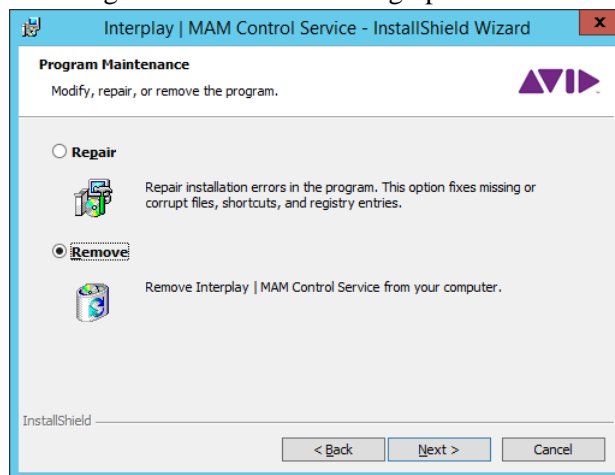


The Interplay | MAM Control Service InstallShield Wizard opens.



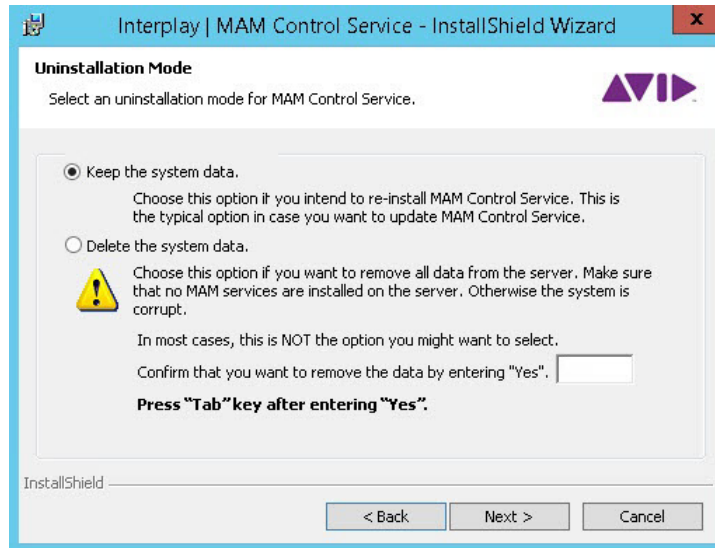
3. Click Next.

The Program Maintenance dialog opens.



4. Select Remove and click Next.

The Uninstallation Mode dialog opens.



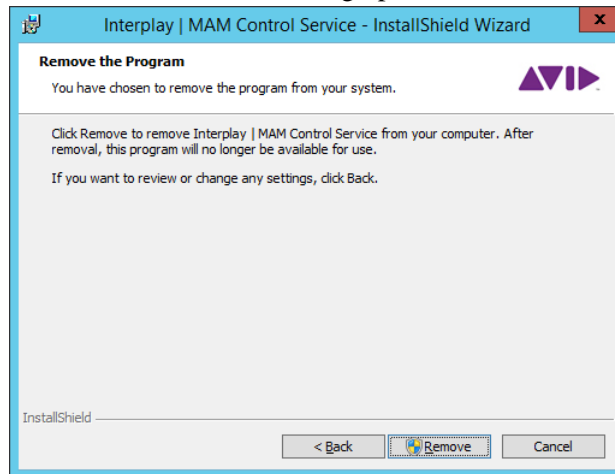
5. Select “Keep the system data” and click Next.



**Avid strongly recommends that you select “Keep the system data.”**

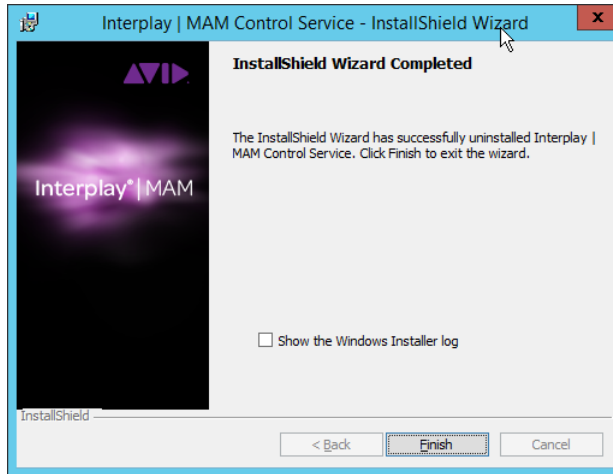
**Selecting the option “Delete the system data” is only useful if you want to remove the entire MAM installation, including all data and services, and start from scratch. This only works if all MAM services have been removed from the server — otherwise some files may remain, preventing a successful future installation on this server. The worst case is that some services could remain active on the server, disrupting the entire MAM system.**

The final confirmation dialog opens:



6. Click Remove to uninstall the old version of MAM Control Service.

When MAM Control Service is removed, the InstallShield Wizard Completed dialog opens.



7. Click Finish to close the wizard.



*It is possible that the installer shows a warning telling that the computer must be restarted. In most cases you can ignore the warning. You should restart the computer if the installation of the new version fails.*

**To install the new version of MAM Control Service with existing data:**

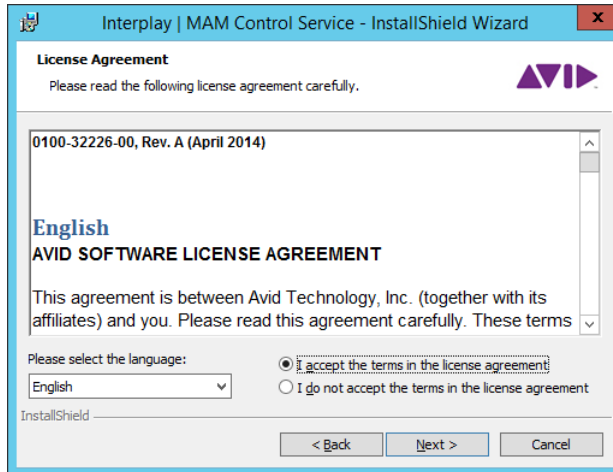
1. Open the Interplay MAM installation source of the new version.
2. Open the folder “Installer” and double-click MAMControlService.exe.

The MAM Control Service installer starts and displays a Welcome dialog.



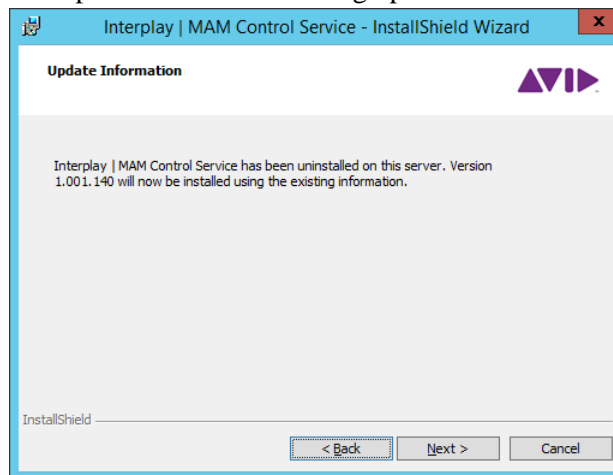
3. Click Next.

The license dialog opens.



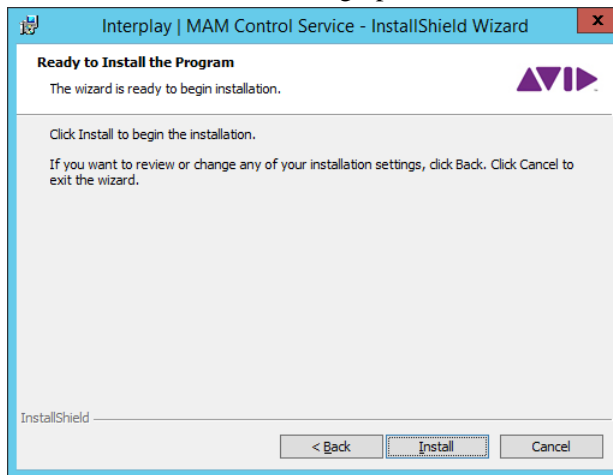
4. Select the language of the AVID SOFTWARE LICENCE AGREEMENT, and read it.
5. Select "I accept the terms in the license agreement" and click Next. If you do not accept the license agreement the installation terminates.

The Update Information dialog opens.



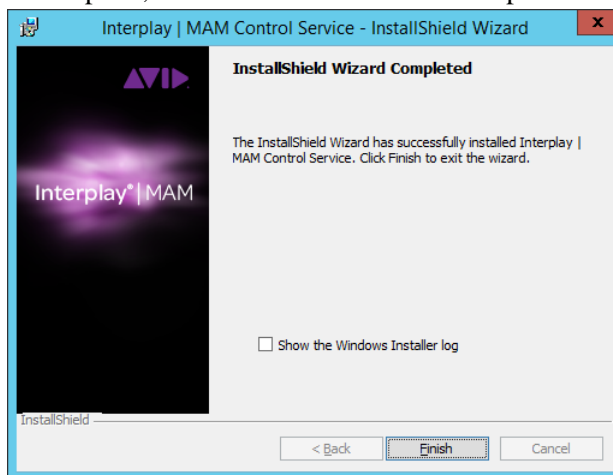
6. Click Next.

The final confirmation dialog opens.



7. Click Install to start the installation.

The installer installs the new version of MAM Control Service. When the installation is complete, the InstallShield Wizard Completed dialog opens.



8. Click Finish to exit the installer.

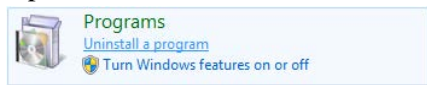
## Updating MAM Control Center

The MAM Control Center must be updated on the Interplay MAM server running MAM Control Center. MAM Control Center is updated in two steps:

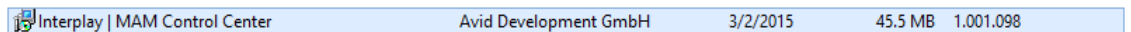
1. Uninstall the old version of MAM Control Center in a mode that uninstalls the service but no other data.
2. Install the new version of MAM Control Center using the existing data.

### To uninstall MAM Control Center and keep the data:

1. Open the Windows Control Panel and select Uninstall a program.



2. Double-click Interplay | MAM Control Center.

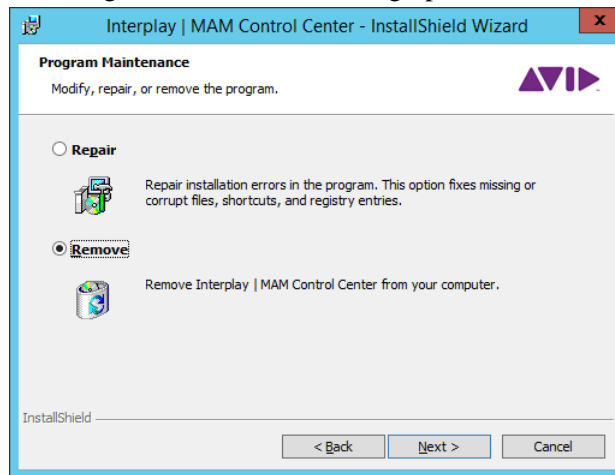


The Interplay | MAM Control Center InstallShield Wizard opens.



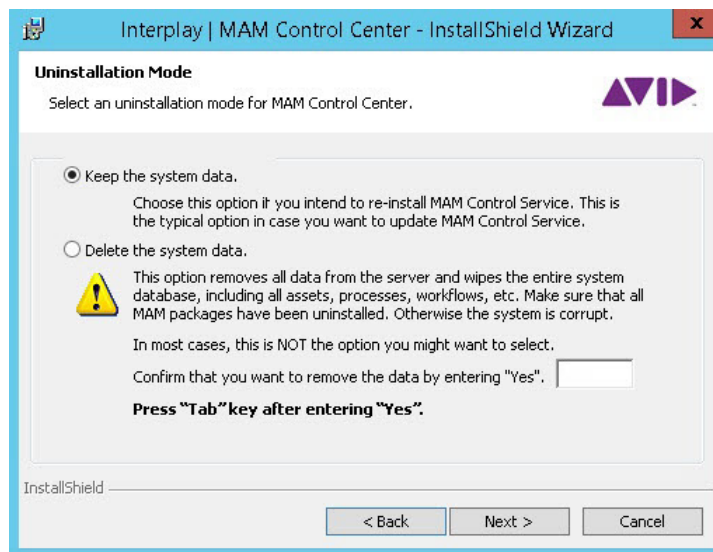
3. Click Next.

The Program Maintenance dialog opens.



4. Select Remove and click Next.

The Uninstallation Mode dialog opens.



5. Select “Keep the system data” and click Next.



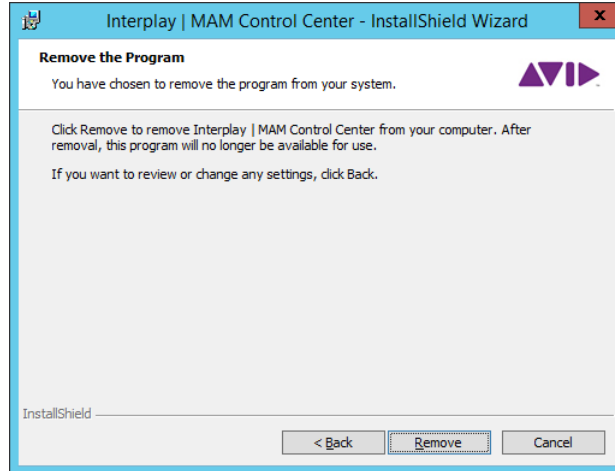
**Avid strongly recommends that you select “Keep the system data.”**

**If you select “Delete the system data” the entire installation is removed, including the database with all assets, processes, and workflows. This is only useful if you want to remove the entire MAM installation, including all data and services, and start from scratch. This only works if all installation packages have been uninstalled — otherwise**



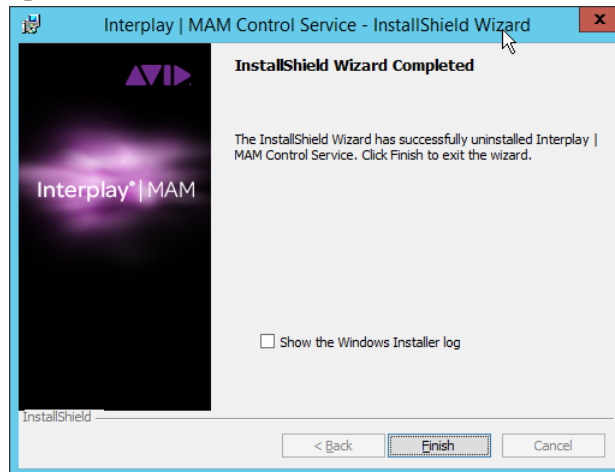
**some files and data may remain in the database, preventing a future installation.**

The final confirmation dialog opens.



6. Click Remove to uninstall the old version of MAM Control Center.

When MAM Control Center is removed, the InstallShield Wizard Completed dialog opens.



7. Click Finish to close the wizard.



*It is possible that the installer shows a warning telling that the computer must be restarted. In most cases you can ignore the warning. You should restart the computer if the installation of the new version fails..*

**To install the new version of MAM Control Center with existing data:**

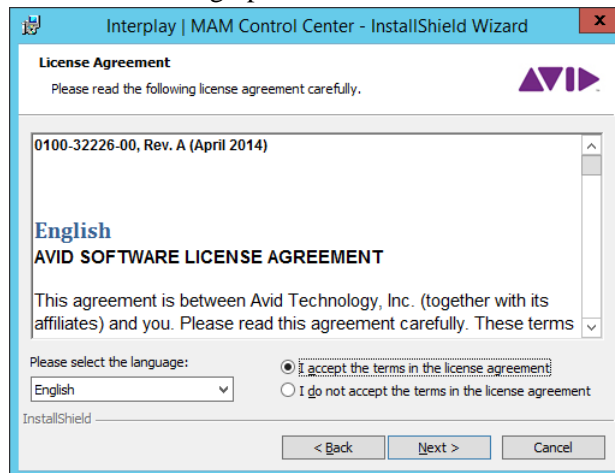
1. Open the Interplay MAM installation source of the new version.
2. Open the folder “Installer” and double-click MAMControlCenter.exe.

The MAM Control Center installer starts and shows a Welcome dialog.



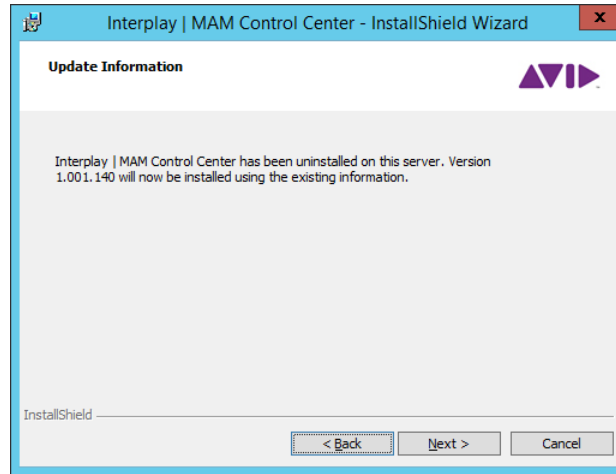
3. Click Next.

The license dialog opens.



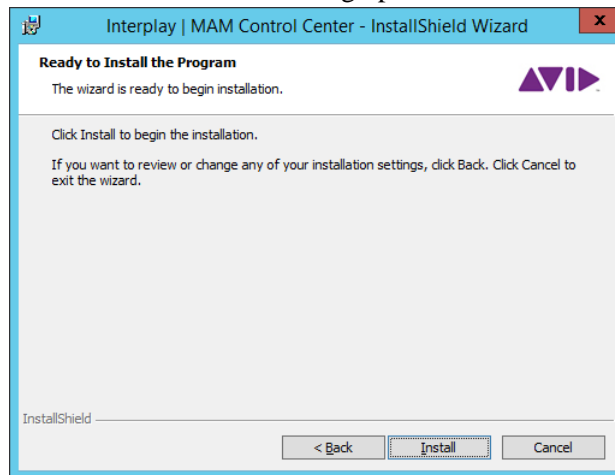
4. Select the language of the AVID SOFTWARE LICENCE AGREEMENT, and read it.
5. Select “I accept the terms in the license agreement” and click Next. If you do not accept the license agreement the installation terminates.

The Update Information dialog opens.



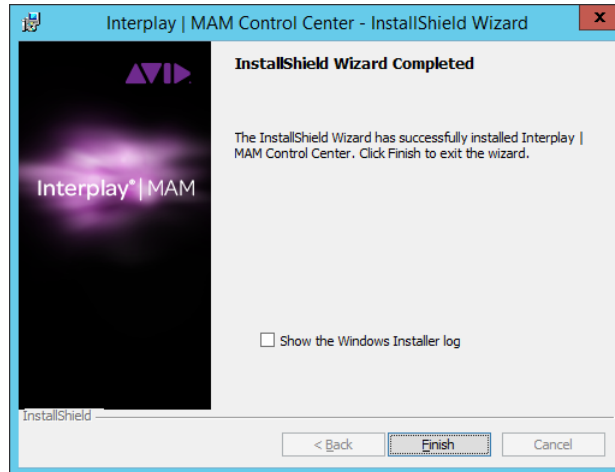
6. Click Next.

The final confirmation dialog opens.



7. Click Install to start the installation.

The installer installs the new version of MAM Control Center. When the installation is complete, the InstallShield Wizard Completed dialog opens.



8. Click Finish to exit the installer.

## Updating MAM Installation Packages

Use the MAM Control Center to update MAM installation packages.



*Updates of the following packages require additional steps:*

1. *Mam.Core.Base: If the system contains packages that bring additional DataManagerWS plug-ins (except DMPropagationPlugin,) you must first disable the additional plug-ins, then update the Mam.Core.Base package, and finally re-install the packages. See “*
2. *Updating Systems with DataManagerWS Plug-Ins” on page 116.*
3. *Mam.Core.Orchestration: If the system contains packages that bring additional command line executables to be used in SWoDL scripts, you must force re-installation of the packages after updating the Mam.Core.Orchestration package. See “Updating Systems with Custom Tools for Workflows” on page 117.*

**To update Interplay MAM packages:**

1. Start MAM Control Center with an Internet browser, entering the URL `https://hostname:9911/ControlCenter/web/` where hostname is the name of the server that is running the MAM Control Center service.

2. Enter your user credentials to use the application.  
You must be a member of the user group defined in the installation of MAM Control Center. For details, see step 12 of [“Installing MAM Control Center” on page 26](#).

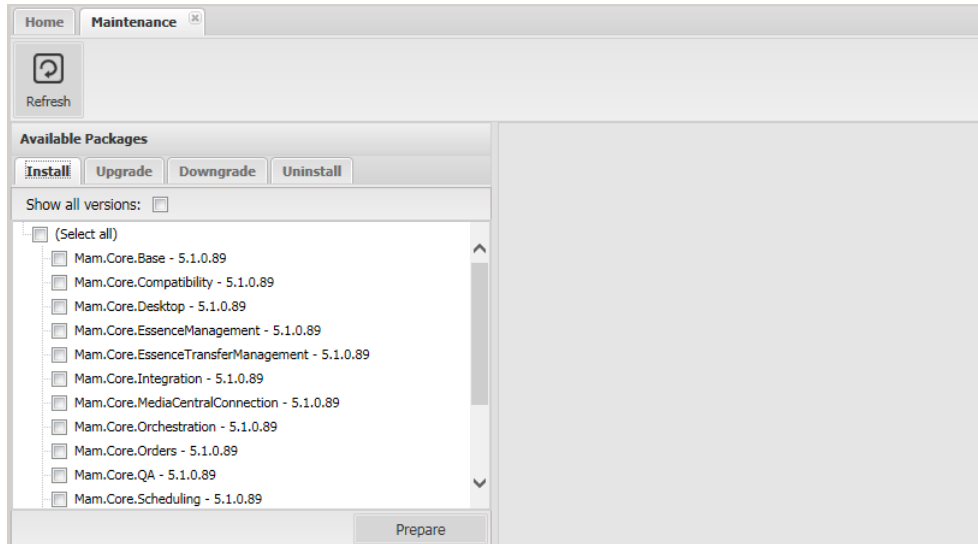
MAM Control Center opens.

3. Open the “Packages” folder on your Interplay MAM installation source.
4. Copy the new installation packages to the package folder of MAM Control Center.  
You have two options:
  - ▶ On the MAM Control Center Home view, click the Package FTP Upload button that opens an FTP link. Use your preferred FTP client to connect to this FTP URL and upload the packages you want to install. For example, copy the FTP URL and paste it to a Windows Explorer window.
  - ▶ Copy the packages you want to install directly to the package directory of MAM Control Center. See [step 8 of “Installing MAM Control Center” on page 24](#) for the configuration of the package directory.  
You can see the package directory by clicking the System Settings button on MAM Control Center’s Home view and locating the system setting System.PackagesDirectory:

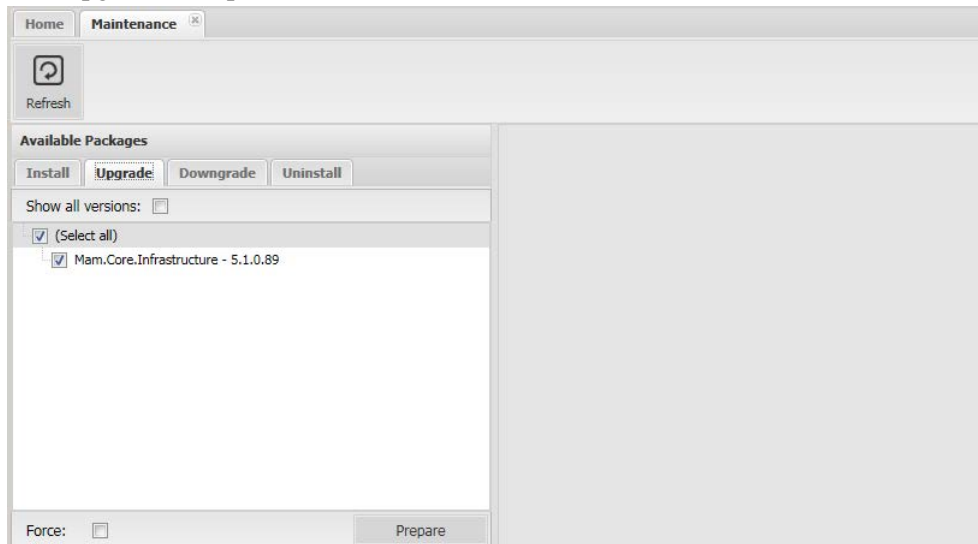
```
System.PackagesDirectory  Installation packages directory  C:\ProgramData\Avid\MediaAssetManager\InstallationPackages\
```

The system setting value is the folder on the server that is running MAM Control Center.

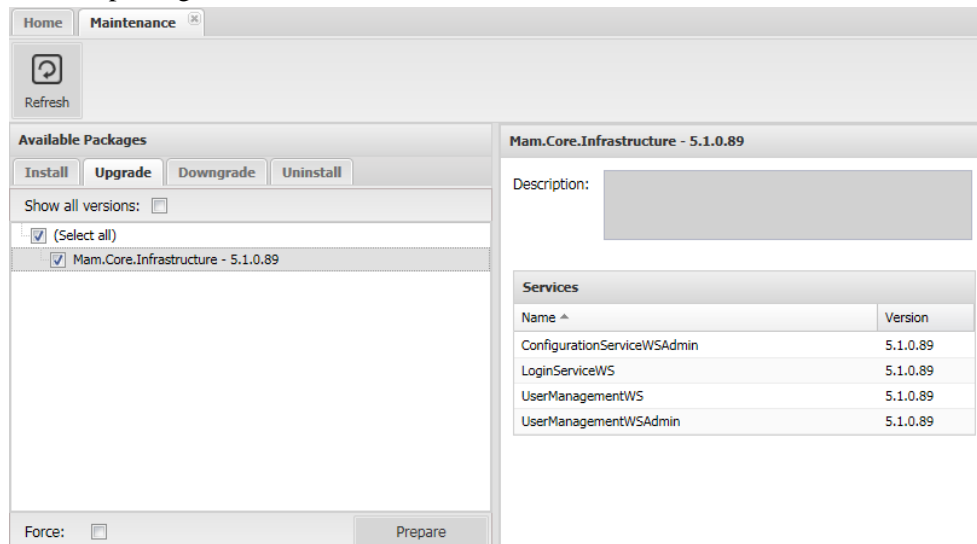
5. On MAM Control Center Home view, click Maintenance.  
The Maintenance view opens.



6. Click the Upgrade tab to see the packages you can update.  
The Upgrade tab opens.

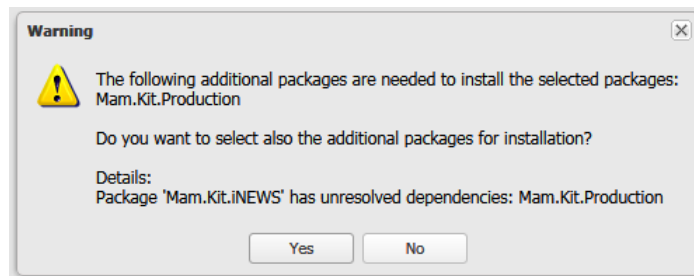


7. Select a package to see its details.



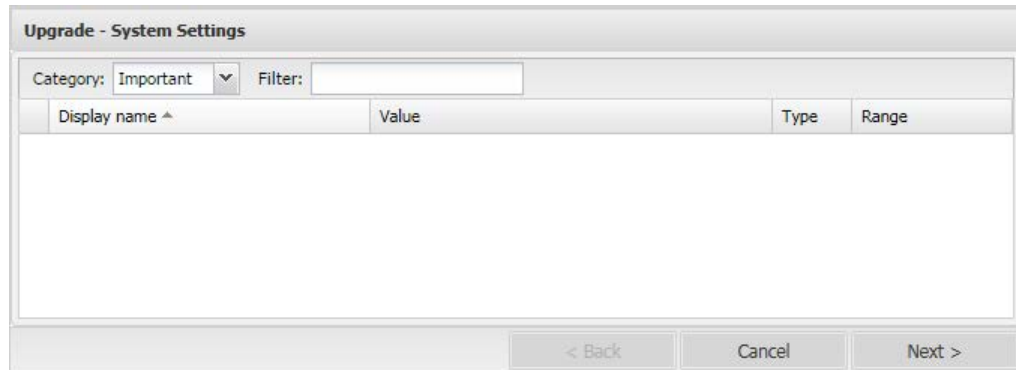
8. Select the packages you want to upgrade and click Prepare to start the installation of the packages.

MAM Control Center verifies the dependencies between packages. A warning is shown if a package relies on a package that is not yet installed and is not selected for installation.



Click Yes to select the additionally needed package(s). If you click No, the package with unresolved dependencies cannot be installed.

If all dependencies are fulfilled, the System Settings pane is shown on the Maintenance view. The pane shows only the new system settings required for the upgrade of the selected packages. If there are no new system settings, the pane is empty.



9. (Option) Use the Category list to limit the system settings that are shown:
  - Important: Shows only the most important settings. The settings are marked with an indicator in the first column.
  - Extended: Shows the important settings and advanced settings that typically have valid default values and do not need to be changed.
  - Hidden: Shows important settings, extended settings, and hidden settings that are used internally and must not be changed.
10. Check all settings and enter appropriate values. Enter values for settings marked with red borders to continue. After a value has been entered the red border disappears.

1. Double-click the Value column to edit a setting.



2. Enter a value.
  3. Press Enter or click outside the field to confirm the changed value, or press Esc to cancel editing.
11. Click Next.  
The System Settings pane is replaced by the Role to Server Distribution pane. The pane shows only new roles. In most cases there are no new roles and the pane is empty.



Upgrade - Role to Server Distribution	
Role	mam-test-inst1

< Back      Cancel      Next >

12. Assign the new roles to one of the servers by checking the appropriate check box. A role combines a number of service groups into a functional category. Roles can be used to assign service groups quickly to the configured servers. You can fine-tune the service distribution in the next step.
13. Click Next.  
The Role to Server Distribution pane is replaced by the Service Group to Server Distribution pane. The pane shows only new services. In most cases there are no new services and the pane is empty.

Upgrade - Service Group to Server Distribution	
Group	Instance Name
	mam-test-inst1

< Back      Cancel      Upgrade

The new service groups are already assigned to the servers according to the distribution of roles to servers.

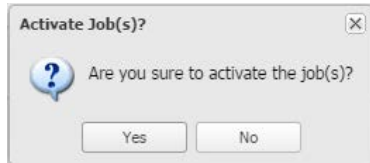
14. (Option) Modify the distribution of the new service groups to servers.
  1. Use the check boxes to change the assignment.
  2. Click the plus icon on the right-hand side to add instances.  
Click the minus icon to remove instances. At least one instance must remain.
15. For multi-instance services, define an Instance Name for each instance. Double-click the cell to edit the value. A red border indicates a value is missing. The Instance

Name is used as part of the identifier of the instance, the URLs of the service's web interfaces, and the name of the configuration profile.

After you have assigned all service groups to servers and defined identifiers for all instances of multi-instance service groups, the Upgrade button is enabled.

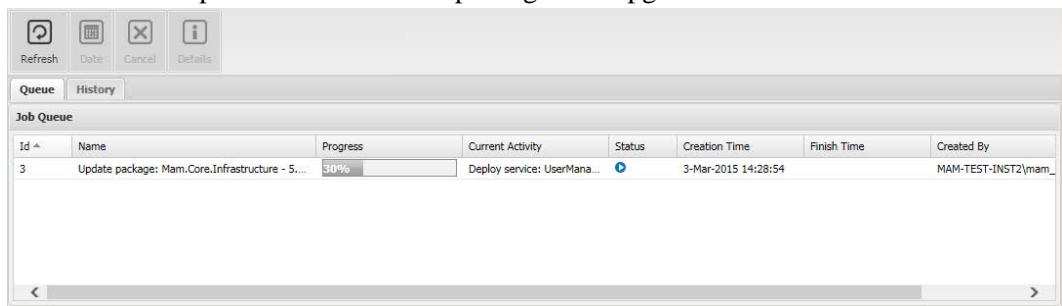
16. Click Upgrade.

An Activate Job(s) confirmation prompt opens.

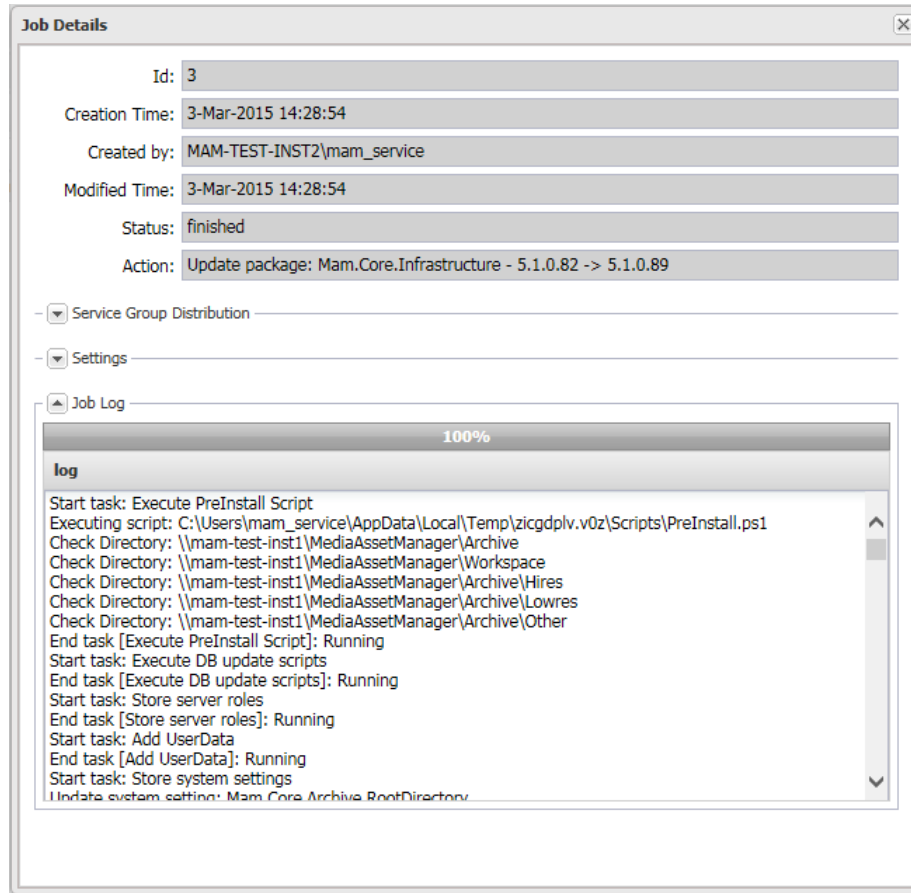


17. Click Yes to start the update.

The Jobs view opens and the selected packages are upgraded.



18. Double-click a job in the Job Queue to see its details.  
The Job Details dialog opens.



19. Click the Close icon or press Esc to close the Job Details dialog.

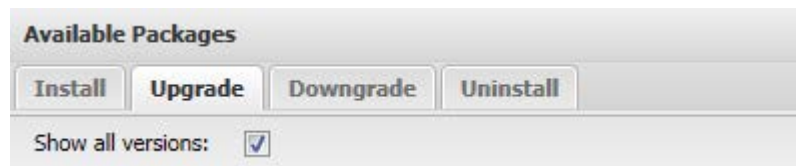
If the upgrade of a package fails the Status switches to failed. You can double-click the row to see the installation log. Other packages that depend on the failed package are canceled automatically.

When all packages are upgraded, the Interplay MAM system is up and running. You can log in to Interplay MAM Desktop and use the system.

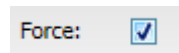
## Updating Systems with DataManagerWS Plug-Ins

If your MAM system uses DataManagerWS plug-ins other than the DMPropagatorPlugin, the following steps are required when updating the Mam.Core.Base package.

1. Open the System Administrator and select the profile DataManagerWS.
2. Disable all DataManagerWS plug-ins by setting the value of the key “enabled” to “false” in all Plugin sections, except for “Plugin/DMPropagator.”
3. Update the Mam.Core.Base package. See [“Updating MAM Installation Packages” on page 108](#).
4. Force the re-installation of all packages that deliver DataManagerWS plug-ins.
  - ▶ If a newer version of the package is available, update the package. See [“Updating MAM Installation Packages” on page 108](#).
  - ▶ To keep the current version of the package, force an update installation with the package file in the current version:
    1. Ensure that the package file is still in the InstallationPackages folder on the server that is running MAM Control Center.
    2. Open the MAM Control Center.
    3. Open the Maintenance Tab.
    4. Open the Upgrade tab.
    5. Click “Show all versions”.



The list shows all packages, including versions that are already installed.

6. Select the packages that contain DataManagerWS plug-ins.
7. Click “Force”.
8. Continue the update installation. See [step 8 of “Updating MAM Installation Packages” on page 111](#).

5. Open the Service Controller in MAM Control Center and reload the DataManagerWS service.



*You can re-activate the plug-ins manually — for example, if a DataManagerWS plug-in was not installed by means of an installation package, or if the original installation package is not available anymore:*

1. *Before updating the Mam.Core.Base package, backup all plug-in DLLs, including all dependent DLLs.*
2. *After updating Mam.Core.Base, re-deploy the plug-in DLLs to the system.*
3. *Enable the plug-ins in the DataManagerWS profile in the System Administrator.*
4. *Reload the DataManagerWS service in MAM Control Center's Service Controller.*

## Updating Systems with Custom Tools for Workflows

If the MAM system includes packages that bring additional command line executables to be used by SWoDL scripts, the following steps are required when updating the Mam.Core.Orchestration package.

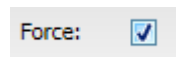
1. Update the Mam.Core.Orchestration package. See [“Updating MAM Installation Packages” on page 108](#).
2. Force the re-installation of all packages that bring additional executables to be used by SWoDL scripts.
  - ▶ If a newer version of the package is available, update the package. See [“Updating MAM Installation Packages” on page 108](#).
  - ▶ To keep the current version of the package, force an update installation with the package file in the current version:
    1. Ensure that the package file is still in the InstallationPackages folder on the server that is running MAM Control Center.
    2. Open the MAM Control Center.
    3. Open the Maintenance Tab.
    4. Open the Upgrade tab.

5. Click “Show all versions”.



The list shows all packages, including versions that are already installed.

6. Select the packages that contain executables to be used by SWoDL scripts.
7. Click “Force”.



8. Continue the update installation. See [step 8 of “Updating MAM Installation Packages”](#) on page 111.



*You can re-activate the executables manually, for example if they were not installed by means of an installation package, or if the original installation package is not available anymore:*

1. *Before updating the Mam.Core.Orchestration package, backup all files in the “exe” sub folder of the WorkflowLibraryWS service, usually “C:\Program Files\Avid\MediaAssetManager\System\_Site\WorkflowLibraryWS\exe.”*
2. *After updating the Mam.Core.Base package, re-deploy the saved files to that folder.*

## 7 Maintenance

The following topics provide information about typical maintenance features:

- [Defining Regular MS SQL Database Maintenance Plan](#)
- [Running Tenant-Related Consistency Checks for Legal Lists and Thesauri](#)

### Defining Regular MS SQL Database Maintenance Plan

When you install MAM Control Center, the DefragmentIndexes.sql script is placed in the Download Center (%ProgramData%\Avid\MediaAssetManager\Download\Database\Maintenance). This script can be executed during a maintenance plan for the MAM\_System database. It defragments all full text catalogs that have more than five fragments.



**Avid recommends running the DefragmentIndexes.sql script every night.**

#### To download the script:

1. Log in to MAM Control Center.
2. Click the Downloads button on the Home tab's toolbar.

The MAM Control Center Download directory opens in a new browser tab.

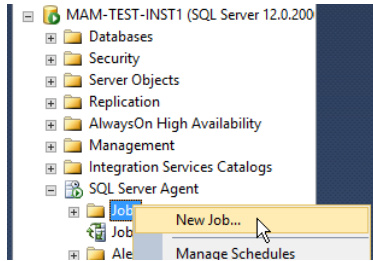
3. Click the Database link and then the Maintenance link to navigate to the respective directory.



4. Right-click the file DefragmentIndexes.sql and save it using the default Save As feature of your browser.

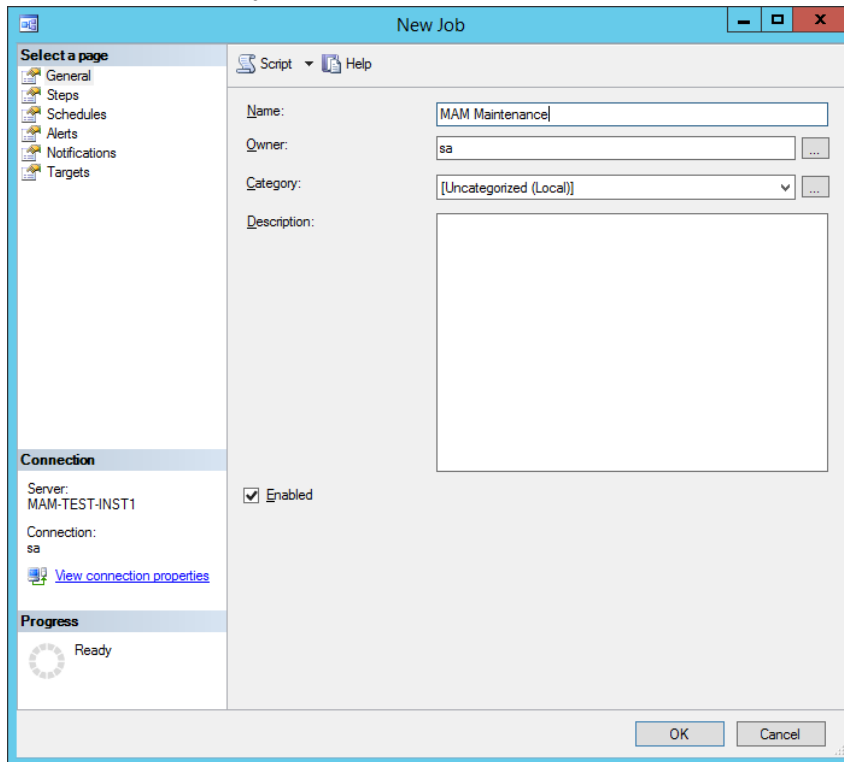
**To create a new job for the maintenance script:**

1. Start Microsoft SQL Server Management Studio and connect to the database using an account with administrative permissions.
2. Open SQL Server Agent, right-click Jobs, and select “New Job...” to create a maintenance job.



The New Job dialog opens.

3. Enter a name for the job.



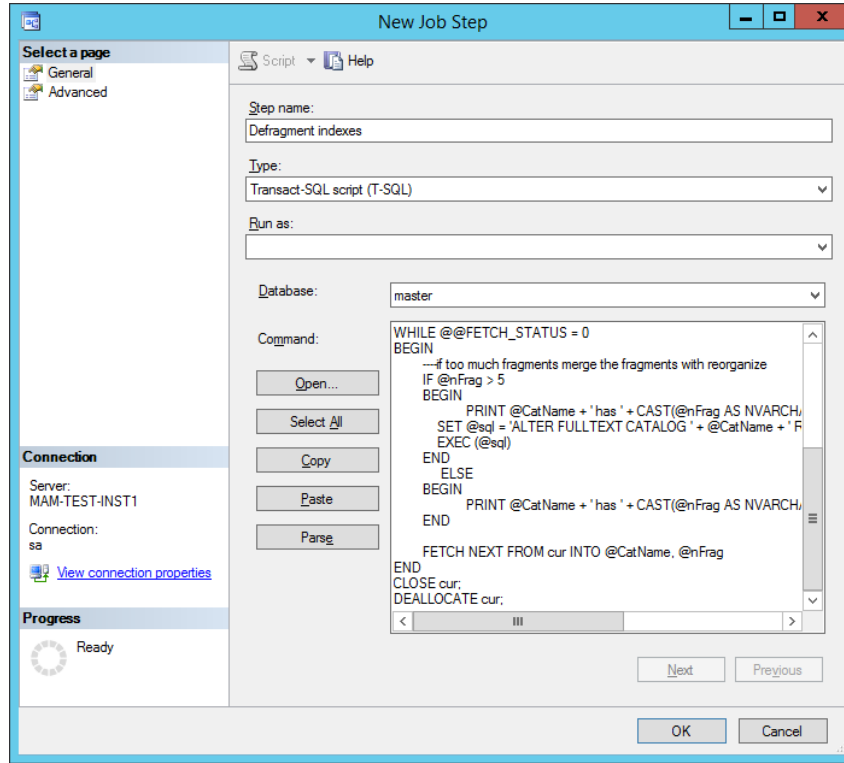


## Defining Regular MS SQL Database Maintenance Plan

4. Select “Steps” on the left-hand side.

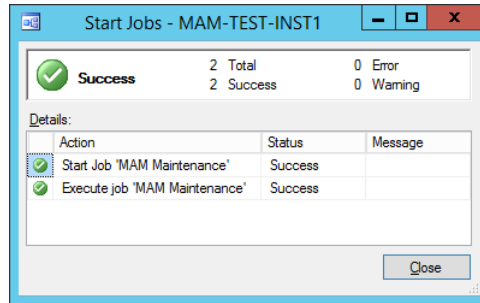
The Job step list is shown.

5. Click “New...” to open the New Job Step dialog.
6. In the New Job Step dialog, enter a name for the step and copy the content of the maintenance script to the Command field.



7. Click OK to close the New Job Step dialog.
8. Click OK to close the New Job dialog.
9. (Option) To test the job, right-click the new job and click “Start Job at Step...”

The job is executed and finishes successfully.



**To include the maintenance job in a daily maintenance plan:**

1. Start Microsoft SQL Server Management Studio and connect to the database using an account with administrative permissions.
2. Click Management, and then click Maintenance Plans.

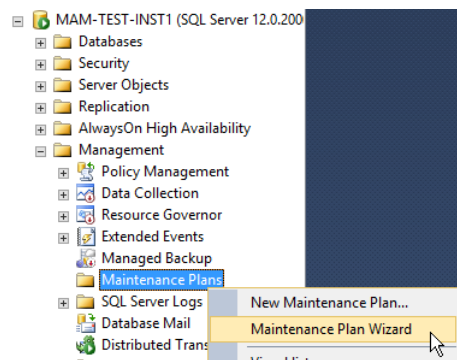


*You can create a new maintenance plan or add the script to an existing maintenance plan. This depends on your environment and requirements.*

*The following steps explain how to create a new maintenance plan.*

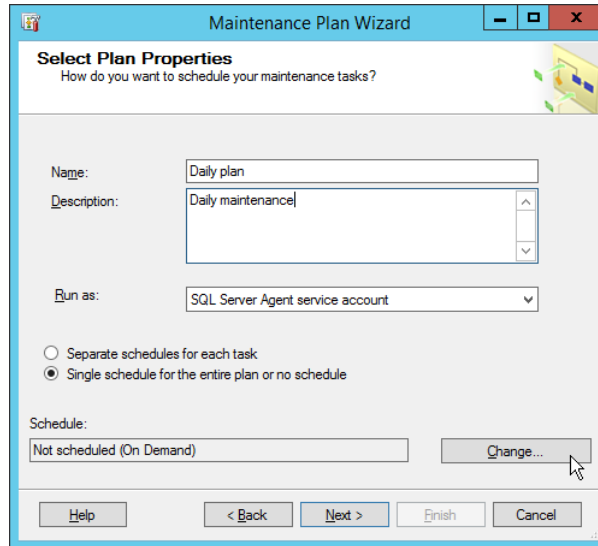
*If there is already a daily maintenance plan for the database, Avid recommends incorporating the MAM maintenance job in the existing maintenance plan.*

3. Right-click Maintenance Plans and select “Maintenance Plan Wizard” from the context menu.



## Defining Regular MS SQL Database Maintenance Plan

- In the Maintenance Plan Wizard, click Next to go to the Select Plan Properties page. Enter a name and description for the maintenance plan.

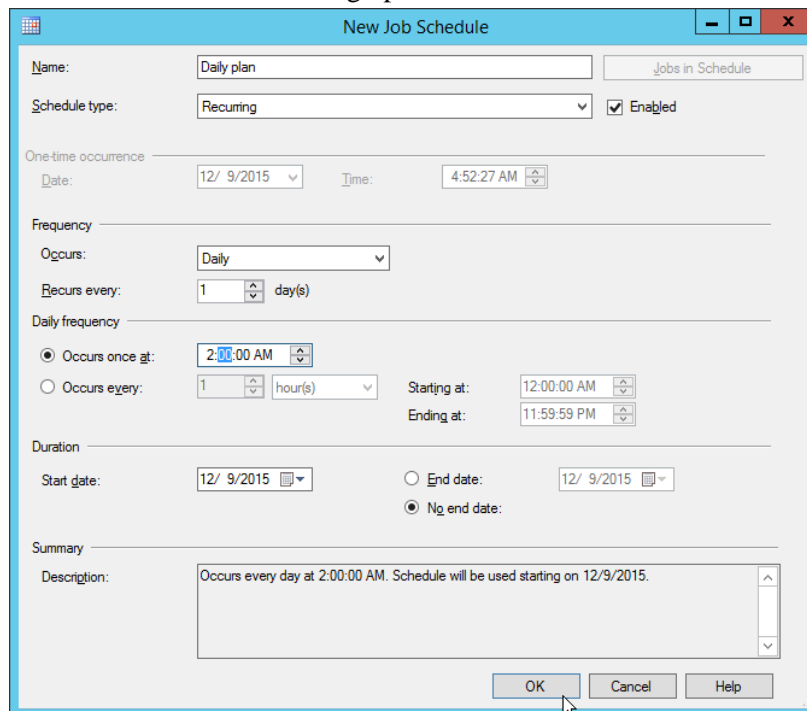


The screenshot shows the 'Maintenance Plan Wizard' dialog box, specifically the 'Select Plan Properties' step. The title bar reads 'Maintenance Plan Wizard'. The main heading is 'Select Plan Properties' with the sub-heading 'How do you want to schedule your maintenance tasks?'. The dialog contains the following fields and options:

- Name:** A text box containing 'Daily plan'.
- Description:** A text box containing 'Daily maintenance'.
- Run as:** A dropdown menu set to 'SQL Server Agent service account'.
- Schedule options:** Two radio buttons: 'Separate schedules for each task' (unselected) and 'Single schedule for the entire plan or no schedule' (selected).
- Schedule:** A text box containing 'Not scheduled (On Demand)' and a 'Change...' button to its right.
- Navigation buttons:** 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

- Click "Change..." to define a schedule.

The New Job Schedule dialog opens.



The screenshot shows the 'New Job Schedule' dialog box. The title bar reads 'New Job Schedule'. The dialog contains the following fields and options:

- Name:** A text box containing 'Daily plan' and a 'Jobs in Schedule' button.
- Schedule type:** A dropdown menu set to 'Recurring' and a checked 'Enabled' checkbox.
- One-time occurrence:** A section with 'Date' (12/ 9/2015) and 'Time' (4:52:27 AM).
- Frequency:** A section with 'Occurs' (Daily), 'Recurs every' (1 day(s)), and 'Daily frequency' options: 'Occurs once at' (2:00:00 AM) and 'Occurs every' (1 hour(s)).
- Duration:** A section with 'Start date' (12/ 9/2015), 'End date' (12/ 9/2015), and a selected 'No end date' radio button.
- Summary:** A text box containing the description: 'Occurs every day at 2:00:00 AM. Schedule will be used starting on 12/9/2015.'.
- Navigation buttons:** 'OK', 'Cancel', and 'Help'.

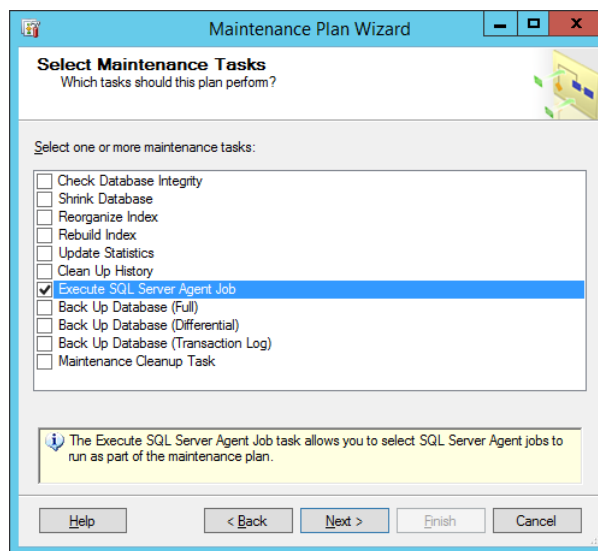
## Defining Regular MS SQL Database Maintenance Plan

- Define a schedule according to your needs. The screenshot shows a daily schedule, running at 2 AM in the morning.
- Click OK to close the dialog.
- Click Next.

The Select Maintenance Tasks dialog is shown.

- Select Execute SQL Server Agent Job and click Next.

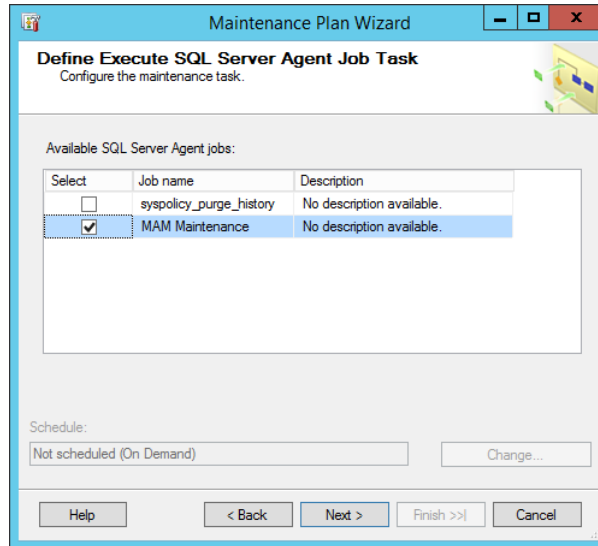
The Select Maintenance Task dialog is shown.



- Click Next.

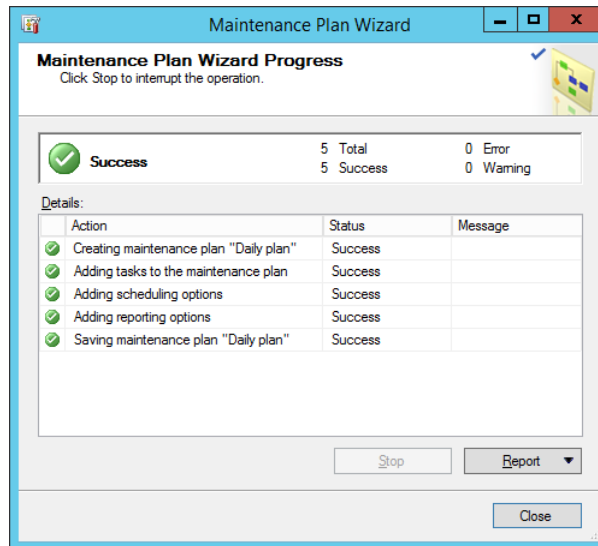
The Define Execute SQL Server Agent Job Task dialog is shown.

11. Check the MAM maintenance job and click Next.



12. Click Next through the remaining dialogs and finally click Finish to complete the wizard.

The Maintenance Plan Wizard Progress dialog opens and the plan is successfully created in the database.



## Running Tenant-Related Consistency Checks for Legal Lists and Thesauri after Migration

When you install MAM Control Center, three SQL scripts are placed in the Download Center (%ProgramData%\Avid\MediaAssetManager\Download\Database\Consistenncy). They can be executed to check the consistency of legal list entries and thesaurus terms — specifically, whether they are assigned to the “undefined” tenant or specific tenants (such as “DEFAULT”). This is important for synchronization with Central Index, because the default configuration only selects entries and terms of the “undefined” tenant for synchronization.



**If your Interplay MAM installation is connected to MediaCentral, Avid recommends running the following queries after a system migration. If everything is fine, each query returns an empty result set.**

- Check\_TenantIndependent\_LegalListEntries.sql: Queries all non-empty legal list labels that have no corresponding entry in the base table DMLE\_LEGALLISTENTRYINFO for the “undefined” tenant. This situation should never occur under regular conditions and may only happen as a result of a system migration. If this occurs, you must fix it manually in the database.
- Check\_TenantIndependent\_LegalListLabels.sql: Queries all legal list labels that are defined for specific tenants, but not for the “undefined” tenant. Use Interplay MAM Legal List Administrator to enter the corresponding labels for the “undefined” tenant.
- Check\_TenantIndependent\_ThesaurusTerms.sql: Queries all IDs and attributes for terms that are assigned to a specific tenant but have no corresponding term attributes for the “undefined” tenant. Use Interplay MAM Thesaurus Administrator to define the corresponding attributes for the “undefined” tenant.

### **To download the script:**

1. Log in to MAM Control Center.
2. Click the Downloads button on the Home tab’s toolbar.

The MAM Control Center Download directory opens in a new browser tab.

3. Click the Database link and then click the Consistency link to navigate to the respective directory.

*Running Tenant-Related Consistency Checks for Legal Lists and Thesauri after Migration*

4. Right-click the file `Check_TenantIndependent_LegalListEntries.sql` and save it using the default Save As feature of your browser.
5. Download `Check_TenantIndependent_LegalListLabels.sql` and `Check_TenantIndependent_ThesaurusTerms.sql`, as described in step 4.

**To run the script:**

1. Log in to the MAM database server.
2. Make sure that your server can access the downloaded SQL scripts.
3. Double-click the SQL script.

SQL Enterprise Manager is started and the script is loaded into the query editor.

4. Click the Execute button in SQL Enterprise Manager.

If everything is fine, each query returns an empty result set. If not, follow the instructions that are mentioned in the script.

## 8 Crash Recovery

The following topics provide information about the recovery procedures if a server crashes due to hardware failure or corrupted software installation:

- [Recovery after Failure of the MCC Server](#)
- [Recovery after Failure of a MAM Server](#)

### Recovery after Failure of the MCC Server

This section contains information about the procedure to recover from the failure of a server that is running MAM Control Center.



**If you have to replace or reinstall the server that is running MAM Control Center, Avid recommends that the replacement server has the same DNS name and IP address.**

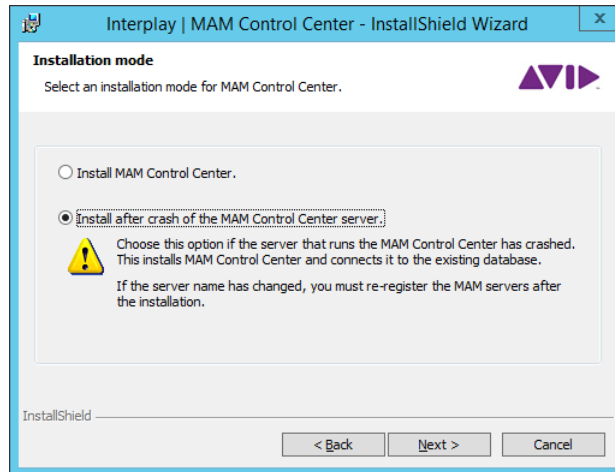
After repairing or replacing the crashed server, continue with the following procedure:

1. Reinstall MAM Control Center and connect it to the existing database.
1. (Option) If the crashed server hosted MAM services, force re-installation of the MAM services.
2. If the DNS name of the replacement server has changed, re-register the MAM servers.

**To reinstall MAM Control Center on the repaired or replaced server:**

1. Install MAM Control Center with the option “Install after crash of the MAM Control Center server.”





In this mode the installer does not create new databases, but only installs the MAM Control Center service and reconnects it to the existing databases.

2. For all other dialogs enter the same values as for a fresh installation.  
See [“Installing MAM Control Center” on page 22.](#)
3. After installation, activate the license again.  
See [“Activating License” on page 29.](#)

**To force re-installation of MAM services on the replacement server:**

If the crashed server also hosted MAM services, continue with the following procedure:

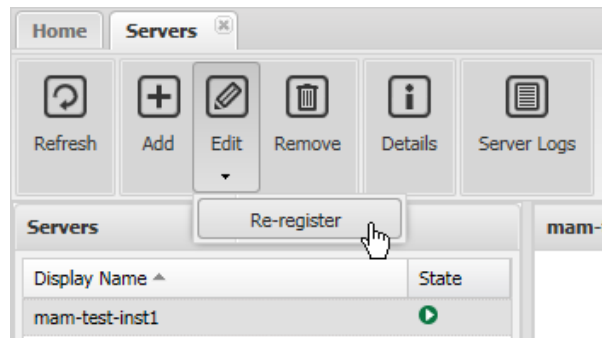
1. Open MAM Control Center with an Internet browser, entering the URL <https://hostname:9911/ControlCenter/web/>.  
See [“Opening MAM Control Center” on page 31.](#)
2. Move all MAM services that were running on the crashed server to one of the remaining MAM servers using the “Force” option.
3. Remove the crashed server from MAM Control Center.
4. (Option) Move the services back to the replacement server:
  1. Install MAM Control Service on the repaired or replaced server.
  2. Add the repaired or replaced server to MAM Control Center.
  3. Move the services back to the repaired or replaced server.

For details, see [“Recovery after Failure of a MAM Server” on page 131.](#)

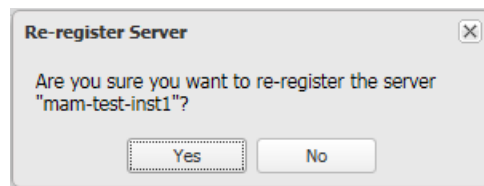
**To re-register MAM servers in MAM Control Center:**

If the DNS name of the replacement server has changed, re-register the MAM servers.

1. Open MAM Control Center with an Internet browser, entering the URL `https://hostname:9911/ControlCenter/web/`.  
See [“Opening MAM Control Center” on page 31](#).
2. Click Servers on MAM Control Center’s Home view.  
The Servers view opens.
3. For every registered MAM server, do the following:
  1. Select the server in the Servers list.
  2. Click the arrow below Edit.
  3. Click Re-register.



The Re-register Server prompt opens.



4. Click Yes.

## Recovery after Failure of a MAM Server

If a MAM server is unavailable — for example, due to a hardware failure or a corrupted software installation — you can recover the system by performing the following (details are provided in separate procedures below):

1. Move all MAM services that were running on the crashed server to one of the remaining MAM servers. This minimizes the downtime of the MAM system because the system is functional as soon as the services are moved.
2. Remove the crashed server from MAM Control Center.
3. (Option) Repair or replace the crashed server in a planned and scheduled way — for example, at a less busy time of day. This requires the following steps:
  1. Install MAM Control Service on the repaired or replaced server.
  2. Add the repaired or replaced server to MAM Control Center.
  3. Move the services back to the repaired or replaced server.

This ensures that server load distribution is the same as before the crash.

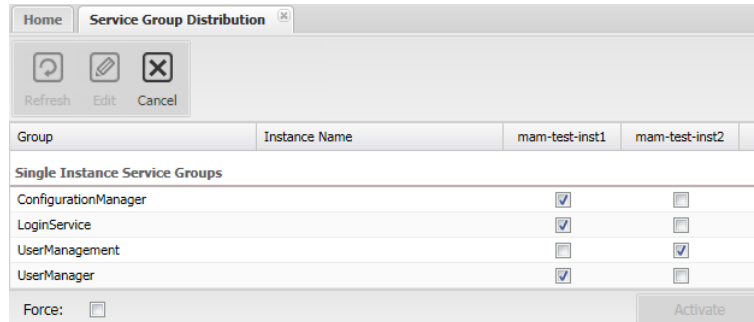


*For a production system it is advisable to have a spare MAM server running on “hot standby.” Install MAM Control Service on the spare server but do not assign services to it. In case of an emergency you can move the services from a crashed server to the spare server. The spare server then acts as a complete replacement for the crashed server so you can avoid additional maintenance downtime.*

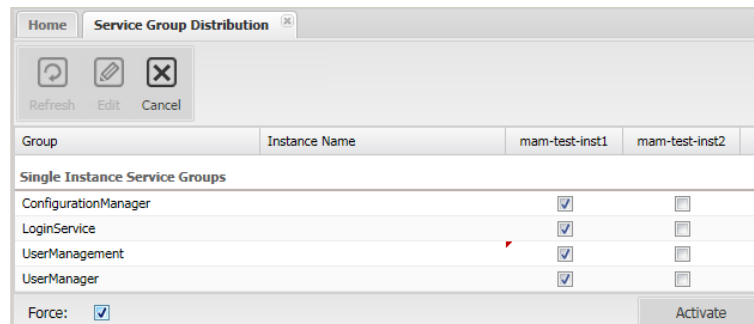
### **To move all MAM services from a crashed server to one of the remaining MAM servers:**

1. Log in to MAM Control Center.
2. Click Service Groups in the View pane.  
The Service Group Distribution view opens and shows the distribution of services to servers.

3. Click the Edit button.  
The view switches to edit mode.



4. Move all MAM services from the crashed server (in the illustration “mam-test-inst2”) to other MAM servers.
  1. For each of the services select a different target server (in the illustration “mam-test-inst1”).
  2. Click the Force check box.



5. Click the Activate button and confirm the security prompt that opens.  
The services are moved.



*The Force option is needed because MAM Control Service is no longer available on the crashed server. MAM Control Center tries to uninstall MAM service from the source server and install it on the target server. As the source server does not run MAM Control Service anymore, the uninstallation fails. The Force option ignores this and forces installation of the service on the target server.*

**To remove the crashed server from MAM Control Center:**

The following steps require that all services have been removed from the crashed server.

1. Log in to MAM Control Center.
2. Click Servers in the View pane.  
The Servers view opens.
3. Select the crashed server in the Servers list.
4. Click the Remove button and confirm the security prompt that opens.

**To move MAM services back to the repaired or replaced server:**

1. Install MAM Control Service on the repaired or replaced server. For details, see [“Installing MAM Control Service” on page 16](#).
2. Log in to MAM Control Center.
3. Click Servers in the View pane.  
The Servers view opens.
4. Click the Add button and enter the required information for the repaired or replaced server.
5. Click OK.
6. Click the Home tab.
7. Click Service Groups in the View pane.  
The Service Group Distribution view opens.
8. Click the Edit button.
9. Move all services that were running on the crashed server back to the repaired or replaced server.
10. Click Activate and confirm the security prompt that opens

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