# Installation Guide
## Axiom Software
## Version 2019.1

KaufmanHall
AXIOM

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# Introduction

Axiom Software is an enterprise planning solution that combines the full benefits of spreadsheet-based modeling with the latest enterprise software technologies. Axiom Software can be used to perform the full range of enterprise performance management functions, including budgeting, forecasting, strategic planning, capital planning, consolidations, and financial reporting.

This guide contains information on how to:

- Prepare your environment for installation of Axiom Software
- Install Axiom Software server and client components
- Configure required and optional system settings

Installation of Axiom Software is typically managed by your organization's Information Technology department. This guide assumes that your organization has internal expertise on network, server, and database administration. Kaufman Hall Software Support and your implementation consultant are available to assist you with the installation.

This guide references the Axiom Software Help file for additional information on certain topics. You can access Axiom Software Help from within Axiom Software.

**NOTE:** This guide only applies to customers who are installing Axiom Software on premise. If you are a cloud service customer, see the separate *Cloud Service Technical Guide* for information on installing software for use with cloud services.

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# Installation Checklist

The following installation checklist applies to new installations. The checklist is provided to give you a quick step-by-step overview of the installation process. Detailed information is provided in the referenced sections.

If you are upgrading an existing installation, see Upgrading Axiom Software before performing any installation steps.

| | Step | More Information |
|---|---|---|
| ☐ | Plan the installation and server configuration | Planning the Installation |
| ☐ | Prepare the database server | Microsoft SQL Server |
| ☐ | Prepare the Axiom Software database:<br>• Create/restore the database<br>• Upgrade the database | Preparing the Axiom Software database |
| ☐ | Prepare the application server:<br>• Install IIS<br>• Install .NET | Microsoft IIS<br>Microsoft .NET Framework |
| ☐ | Install the Axiom Application Server and the Axiom Update Service | Installing the Axiom Application Server<br>Installing Axiom Update Service |
| ☐ | Prepare the Scheduler server(s):<br>• Install VSTO<br>• Install .NET | Microsoft VSTO<br>Microsoft .NET Framework |
| ☐ | Install the Axiom Scheduler Server and the Axiom Update Service | Installing Axiom Scheduler Service<br>Installing Axiom Update Service |
| ☐ | Prepare the client workstations<br>• Install .NET<br>• Install Excel (for Excel Client only)<br>• Install VSTO (for Excel Client only) | Microsoft .NET Framework<br>Microsoft Excel<br>Microsoft VSTO |

| | Step | More Information |
|---|---|---|
| ☐ | Install the Axiom Desktop Client | Installing the Axiom Software Client on client workstations |
| ☐ | Configure Axiom Software:<br>• Complete the system configuration settings<br>• Set up Scheduler<br>• Set up users in Security | Configuring Axiom Software |

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# Planning the Installation

This section provides the information you need to understand the deployment options, technical requirements, and prerequisites for Axiom Software. Before installing Axiom Software, you should prepare the server and client environments as needed.

## Technical requirements

Before installing Axiom Software, make sure that you understand the supported software versions and minimum hardware requirements. For more information, see the separate documents *Server Technical Requirements* and *Client Technical Requirements*. These documents are maintained separately so that we can provide you with the most up-to-date technical requirements. Copies of the documents are included with the installation package, or you can contact Kaufman Hall Software Support to obtain copies.

## Component overview

Axiom Software consists of the following server and client components.

### Server components

Axiom Software has the following server components:

| Component | Description |
|---|---|
| Application Server | The Axiom Application Server controls server-side operations for Axiom Software, including web services for the Web Client. It operates as a Microsoft IIS application. |

| Component | Description |
| --- | --- |
| Scheduler Service | The Axiom Scheduler Service processes Axiom Software tasks on a server instead of the individual client machines. Tasks can be scheduled for processing or run on demand.<br><br>The application server install includes installation of a System Scheduler on the application server to handle system tasks. To handle user-scheduled tasks, you must manually install the service on one or more Scheduler servers. |
| Database | Axiom Software uses Microsoft SQL Server to store all data and files for the Axiom Software application. Users interact with these managed files using the Axiom Software virtual file system, which simulates a familiar Windows Explorer file system for accessing documents.<br><br>Each Axiom Software system consists of two databases: an application database that holds all files, tables, and other data for the system, and a corresponding audit database to track changes made to that system. By default the audit database is a separate, standalone database, but if necessary the database can be configured so that the audit tables are embedded within the application database. However, this embedded-database configuration is typically only used for Axiom cloud service systems. |
| Update Service | The Axiom Update Service is used to download and apply updates to the Axiom server software. When using the service, upgrades can be performed from the Web Client rather than requiring direct access to the servers. |

Once the application server has been installed and the Axiom Software database has been configured, you can access the Axiom Software Web Client to install the Desktop Client and perform certain administrative functions. For more information, see Installing the Axiom Software Client on client workstations.

## Client components

Users interact with Axiom Software using the following clients:

| Client Name | Description |
| --- | --- |
| Excel Client | The Excel Client provides access to all Axiom Software features within a Microsoft Excel interface. |
| Windows Client | The Windows Client emulates the spreadsheet environment without requiring Microsoft Excel. It provides full access to Axiom Software features, but certain spreadsheet features are limited. |

| Client Name | Description |
| --- | --- |
| Web Client | The Web Client provides browser-based access to Axiom Software, limited to certain web-enabled features. The Web Client does not provide any spreadsheet functionality.<br><br>For end users, the Web Client can provide access to web-based input forms, reports, and dashboards. This includes using pre-configured Axiom forms, and using the Report Builder to create and view web reports. For administrators, the Web Client provides access to certain administration features, such as system auditing. |

Administrators (also known as Master System Users) can choose to use either the Excel Client or the Windows Client. End users can use any client, depending on your organization's deployment preferences and template/report design. The Excel Client and Windows Client require installation on the client machine via ClickOnce; whereas the Web Client is accessible within a browser and does not require separate installation.

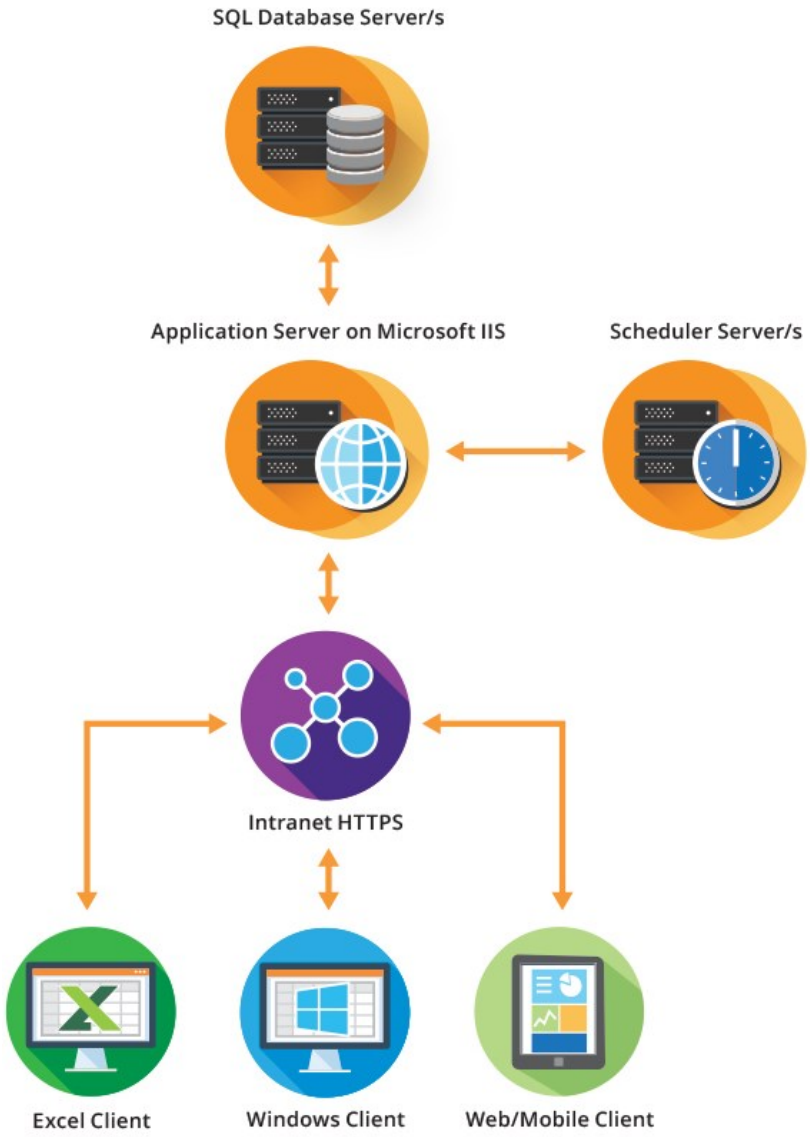
Because the Windows Client does not use Microsoft Excel, it has some limitations in regard to spreadsheet functionality. For more information, see Axiom Software Help: **File setup > Additional design considerations > Windows Client design considerations for Axiom files** (or search for AX2289).

The Excel Client and the Windows Client are referred to collectively as the Desktop Client. Any references to Desktop Client means use of either client.

# Server configurations

Axiom Software can be deployed in a number of server configurations, depending on factors such as the size of your user base, the number of active plan files, and anticipated Scheduler activity.

For detailed information on server configurations, including specific hardware requirements, see the separate *Server Technical Requirements* document. Server information is summarized here for reference.




For medium, large, and enterprise deployments, server components must be hosted on separate servers for optimal performance. Additionally, for larger deployments, we recommend multiple Scheduler servers.

- The medium footprint assumes 25-50 concurrent users, fewer than 500 plan files, and moderate Scheduler activity. In this scenario, one Scheduler server should be sufficient.
- The large footprint assumes more than 50 concurrent users, more than 500 plan files, and heavy Scheduler activity. We recommend two load-balanced Scheduler servers to support this configuration.
- The enterprise footprint assumes 500-1000 concurrent users, more than 500 plan files, and heavy Scheduler activity. We recommend four load-balanced Scheduler servers to support this configuration.

# Account and file permissions

## User rights

Users do not require any special file permissions on your organization's network in order to work with Axiom Software. All Axiom Software managed files are stored within the Axiom Software database, and access to those files is controlled within the system. All users must be set up within Axiom Software Security, and the number of allowed users is subject to your licensing agreement with Kaufman Hall.

## Application Server—Service account rights

When setting up imports in Axiom Software, the import source files must be accessible to either the Network Service account or Computer account used by the Axiom Application Server. By default, the application server runs using the Network Service account.

If you are importing from a network share that is local to the application server, the share and security permissions must be configured to grant the Network Service account at least read permission. If you are importing from a network share that is not local to the application server, the share and security permissions must be configured to grant the application server Computer account at least read permission.

This applies when the import file location is fixed, or when the import is run via Scheduler. If users are running imports interactively, you can use the file prompt option to import any file, regardless of whether the application server account can access it directly.

## Scheduler Server(s)—Service account rights

Scheduler supports certain tasks that can save files to specified folder locations, or process files at specified folder locations. These folder locations must be accessible to the user account for the Scheduler service.

By default, the Scheduler service runs using the local system account. If you want Scheduler to be able to access file shares on other network servers, then you must change this so the Scheduler service runs using a domain service account, and then grant this account read/write share and security permissions to the desired folders.

# Software prerequisites

The following software prerequisites are required for Axiom Software:

| Prerequisite | Database Server | Application Server | Scheduler Service | Client Workstations (Excel) | Client Workstations (Windows) |
|---|---|---|---|---|---|
| Microsoft SQL Server | X | | | | |
| Microsoft IIS | | X | | | |
| Microsoft .NET | | X | X | X | X |
| Microsoft Excel | | | | X | |
| Microsoft Visual Studio Tools for Office (VSTO) | | | | X | |
| Web browser (Microsoft Internet Explorer and others) | | | | X | X |

## Microsoft SQL Server

Axiom Software does not require any special settings for the SQL Server installation. If you are doing a new installation, you can use the default settings. Note the following:

- For **Feature Selections** to install, make sure that the following components are selected: **Database Engine Services**, **Client Tools Connectivity**, and **Management Tools - Complete**.
- For the **Service Account**, select **Use the built-in System account**.
- For **Authentication Mode**, select **Mixed Mode**. The sa password can be anything that meets your organization's requirements.

After installing SQL Server, make sure to install the latest service pack for the release.

## Microsoft IIS

Microsoft Internet Information Services (IIS) is required to be installed on the Windows Server that will host the Axiom Software Application Server.

For IIS 8, the following IIS features are required:

- Under **Web Server > Common HTTP Features**, select **Default Document** and **Static Content**.
- Under **Web Server > Performance**, select **Static Content Compression** and **Dynamic Content Compression**.
- Under **Web Server > Application Development**, select **.NET Extensibility 4.5** and **ASP.NET 4.5**.

- Under **Web Server > Management Tools**, select **IIS Management Console**.
- Under **.NET Framework 4.5 Features**, select **.NET Framework 4.5**, **ASP.NET 4.5** and **WCF Services > HTTP Activation**.

For IIS 10, the following IIS features are required:

- Under **Web Server > Common HTTP Features**, select **Default Document** and **Static Content**.
- Under **Web Server > Performance**, select **Static Content Compression** and **Dynamic Content Compression**.
- Under **Web Server > Application Development**, select **.NET Extensibility 4.6** and **ASP.NET 4.6**.
- Under **Web Server > Management Tools**, select **IIS Management Console**.
- Under **.NET Framework 4.6 Features**, select **.NET Framework 4.6**, **ASP.NET 4.6** and **WCF Services > HTTP Activation**.

## Microsoft .NET Framework

Microsoft .NET Framework is required on all Axiom Software servers and client workstations (except for computers and devices that will only use the Axiom Web Client). Server components require 4.6.1 or higher, while client components require 4.5 or higher.

After installing IIS on the Axiom Application Server, run Windows Update on the server, and then select **Custom** to access the full list of updates. Select every available update that is related to .NET. Make sure to check the **Software, Optional** section in addition to the **High Priority** section.

If the required version of .NET is not already present on client machines, it can be installed from Microsoft's website, or from the Axiom Software Web Client after the application server has been installed.

## Microsoft Excel

A supported version of Microsoft Excel is required to be installed on all client workstations that will use the Axiom Excel Client. Please see the separate document *Client Technical Requirements* for a full list of supported Excel versions. Either 32-bit or 64-bit versions can be used where applicable.

When installing Excel, the Visual Basic for Applications component must be included. After installing, make sure to install the latest service pack for the release.

If your organization has configured Excel to require add-ins to be digitally signed, then you must install the publisher certificate for Axiom Software to the Trusted Publisher area on client machines. Kaufman Hall Software Support can provide this certificate to clients on request.

## Microsoft VSTO

Microsoft Visual Studio Tools for Office (VSTO) is required to be installed on all client workstations that will use the Axiom Excel Client. You can install this program from the Axiom Software Web Client after the application server has been installed.

## Web browser

Use of the Desktop Client (Excel Client or Windows Client) requires Microsoft Edge or Internet Explorer 11 or above. This browser is required to install and launch the client using ClickOnce. Other browsers may have ClickOnce add-ins that can be used, but no particular add-in is officially supported.

Use of the Web Client requires a current version of an HTML5-compliant browser. Various browsers are supported, based on the platform where the Web Client will be viewed. For full details on supported browsers, see the separate document *Client Technical Requirements*.

If you will be using Axiom forms exclusively within the Desktop Client (meaning users will not open forms in a separate browser), then the embedded browser within the application provides native support for form functionality. There are no additional browser requirements for Axiom forms used within the Desktop Client environment.

# Authentication methods

Axiom Software supports several different ways to perform user authentication into Axiom Software. Axiom Software can be the sole method of authentication, or you can integrate with other methods of authentication used at your organization. Axiom Software supports the following authentication options:

- Axiom Prompt Authentication
- Windows Authentication
- LDAP Authentication
- OpenID Authentication

Axiom Prompt Authentication is always available and does not need to be explicitly enabled. All other authentication options must be enabled during the Axiom Application Server installation if you want to use them. You can also modify authentication options post-installation using the Axiom Software Manager: **Installation Manager > Configure Authentication Methods**.

When you set up users in Axiom Software security, you specify which method of authentication should be used for each user. If an integrated authentication option is enabled for your system, that method is the default method.

## Axiom Prompt Authentication

When using Axiom Prompt Authentication, users are authenticated based on their Axiom Software credentials. When the Axiom Software login screen displays, users must type their Axiom user name and password. In Axiom Software security, users must be assigned to the **Axiom Prompt** authentication type.

Axiom Prompt Authentication is always available and applies to all components of Axiom Software. You can use Axiom Prompt Authentication as the primary authentication method for your installation (meaning no other authentication method is enabled), or you can use it in conjunction with another authentication method. If you are also using another authentication method, then the Axiom Prompt behavior is as follows:

- If LDAP Authentication or Windows Authentication is enabled, Axiom Prompt users simply enter their Axiom Software user name and password at the Axiom Software login prompt. If the login screen is configured to show the domain selector, Axiom Prompt users must select **Axiom Named User**.
- If OpenID Authentication is enabled, Axiom Prompt users must go to a special area of the web site in order to log in. For example:

  `https://`*`ServerName`*`/Axiom/Home/Login`

## Windows Authentication

When using Windows Authentication, users are authenticated based on their Windows credentials. When the Axiom Software login screen displays, users must enter their Windows user name, domain, and password. If the current domain is an allowed domain and the Windows user name matches a user name in Axiom Software, then the credentials are passed to Windows for authentication into Axiom Software. Windows Authentication applies to all components of Axiom Software.

Users must be set up in Axiom Software security using their Windows user names and assigned to the **Windows User** authentication type. This can be done manually, or you can optionally import and synchronize users from Active Directory using a Scheduler task.

Windows Authentication is enabled during the Axiom Application Server installation. When enabling Windows Authentication, you must specify allowed domains for authentication. You can modify this configuration later as needed using the Axiom Software Manager, or by using a Save Type 4 utility to the system configuration table.

If the Windows Authentication configuration only allows one domain, then that domain is assumed for authentication and users do not need to specify it when logging in. If multiple domains are allowed, then the domain must be specified in one of the following ways:

- The user must include the domain with their user name, such as: *DomainName**UserName*.
- The user must specify the appropriate domain using the **Domain** selection list on the login screen. This is an optional setting that can be enabled for your installation. For more information, see Domain prompt.

Users must enter their credentials each time they log in, unless they select **Remember me** to store their credentials for future login. For more information, see Remember me.

The Cloud Integration Service is required when using Windows Authentication in Axiom cloud service systems. For more information, see the *Cloud Service Installation Guide*.

## LDAP Authentication

When using LDAP Authentication, users are authenticated based on their LDAP credentials. When the Axiom Software login screen displays, users must enter their LDAP user name (with or without the suffix) and their LDAP password. If the LDAP user name matches a user name in Axiom Software, then the credentials are passed to LDAP for authentication into Axiom Software. LDAP Authentication applies to all components of Axiom Software.

Users must be set up in Axiom Software security using their LDAP user names and assigned to the **LDAP Prompt** authentication type. The user name can contain the LDAP suffix or not as desired. Note that the user name must include the suffix if there is a user name conflict with another user that is configured with a different authentication type (or with a different LDAP suffix). For example, if you have an Axiom Prompt user jdoe, and you have an LDAP user jdoe, then the LDAP user must include the suffix on their user name to differentiate the two users.

LDAP Authentication is enabled during the Axiom Application Server installation. When enabling LDAP you must specify the connection information to the LDAP server, as well as the allowed LDAP suffixes. You can modify this configuration later as needed using the Axiom Software Manager, or by using a Save Type 4 utility to the system configuration table.

If only one LDAP suffix is allowed by the configuration, then that suffix will be used for all LDAP authentication. The user can include the suffix or not when logging in, and the Axiom user name can contain the suffix or not. Axiom will automatically append the suffix as needed when sending the credentials to LDAP for authentication. However, if multiple suffixes are allowed, then the suffix must be specified using any of the following approaches:

- The Domain selector must be enabled for login, and the user must select the appropriate suffix.
- The user must include the suffix as part of their user name when logging in.
- The user names in Axiom Software must include the appropriate suffix for each user.

Users must enter their credentials each time they log in, unless a user chooses to select **Remember me** to store their credentials for future login. For more information, see Remember me.

## OpenID Authentication

When using OpenID Authentication, users are authenticated based on their credentials for the designated OpenID provider (such as Google OpenID Connect). OpenID Authentication is a web-based authentication method. Users access Axiom Software by going to the Axiom Software Web Client, where

they must enter their user name and password for their OpenID provider. Once a user is authenticated, if the user name matches a user name in Axiom Software, then the user can access the Web Client and launch the Axiom Excel Client or Windows Client from the web page.

Users must be set up in Axiom Software using their OpenID user names, and assigned to the **OpenID** authentication type. This user name must exactly match the OpenID user name, including the @suffix.

Users assigned to OpenID Authentication can only access Axiom Software from the web. The Excel Client and Windows Client cannot subsequently be launched using a shortcut on the user's computer; the user must continue to log into the Axiom Software Web Client in order to start the Desktop Client. When using OpenID Authentication, you may want to configure the Axiom Application Server installation so that no shortcuts are placed on user computers during the client installation, since users will not be able to use these shortcuts.

OpenID Authentication is enabled during the Axiom Application Server installation. When enabling OpenID Authentication, you must specify the Client ID and Client Secret for the OpenID provider. You can modify this configuration later as needed by performing a Repair on the installation.

OpenID Authentication may require additional configuration steps for IIS, the Axiom Application Server, and the OpenID provider. These steps may vary depending on your particular environment. At minimum, you must configure the OpenID provider with the redirect URI to the Axiom Software login page (such as `<URLtoAxiom>/openid/login`). Please contact Kaufman Hall Software Support for assistance if you are interested in enabling OpenID Authentication.

**NOTE:** OpenID Authentication is not supported for use with the iPad app.

### Logging in as an Axiom Prompt user when OpenID Authentication is enabled

You can set up **Axiom Prompt** users when OpenID Authentication is enabled, such as to allow Kaufman Hall Software Support to access the system without using OpenID credentials. These users must go a special area of the web site in order to log in:

`https://ServerName/Axiom/Home/Login`

Where *ServerName* is the name of your Axiom Application Server and Axiom is the name of the virtual directory.

# Login behavior

This section details some options for the Axiom Software login behavior. These options apply to all authentication types except OpenID.

## Domain prompt

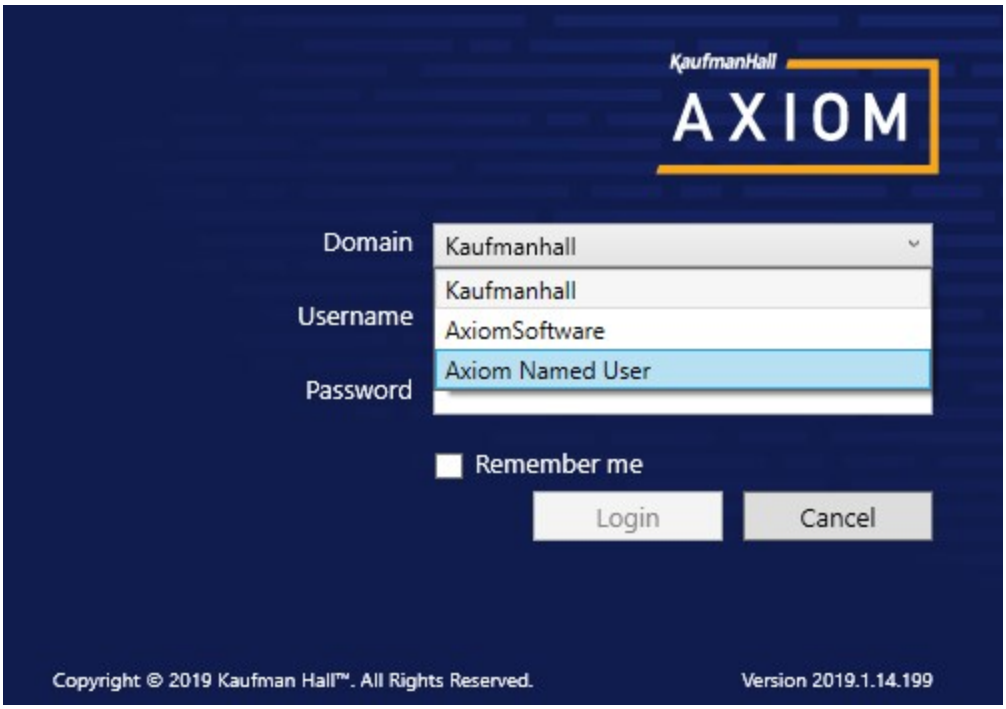
When a user logs in, Axiom Software looks for a matching user name within Axiom security and applies the specified authentication type for that user. For LDAP Authentication and Windows Authentication, if only one allowed domain or suffix is specified, that information can be assumed and the user does not need to include it when logging in. If multiple domains or suffixes are specified, then the user must include that information as part of their user name. For example: *DomainName**UserName* for Windows Authentication.

Alternatively, you can configure your system so that all users must specify their authentication type / domain when logging into Axiom Software, using the **Domain** selection list. The Domain selection list displays the following:

- **Axiom Named User** (for Axiom Prompt login)
- Each allowed Windows Authentication domain (if Windows Authentication is enabled for the installation)
- Each allowed LDAP suffix (if LDAP Authentication is enabled for the installation)

When the Domain selection list is enabled, the user must make the appropriate selection in order to log in. For example, a Windows Authentication user must select their Windows domain name. Because it is specified separately, the domain or suffix does not need to be added to the user name, even when there are multiple allowed domains or suffixes.

The following screenshot shows an example of the Domain selection list. In this example, the installation has enabled Windows Authentication with two allowed domains. The two domain names display on the selection list as well as the choice to log in as an Axiom Named User.



The Domain selection list can be enabled or disabled using the **AuthenticationDomainSelectionListRequired** system configuration setting. By default this is set to False, which means the Domain selection list only displays if your system contains duplicate user names that require the domain to be specified to differentiate those users. If you set this to True, then the Domain selection list displays at all times.

If the Domain selection list is enabled, and if Windows Authentication is enabled for the installation, then by default the user's current domain will be selected in the list (if that domain is one of the allowed domains). Otherwise, the first option in the list is selected by default. Options are ordered as follows: LDAP suffixes, Windows domains, Axiom Named User.

## Remember me

Users can optionally select **Remember me** at the login screen to store their Axiom Software authentication for future use. This information is encrypted and only applies to the current user for the current machine. The next time the user starts Axiom Software on the current machine, they will not be prompted to log in.

Although all Axiom Software clients have a Remember Me check box on the login screen, note that the remembered status is stored separately for access to the Web Client versus the Desktop Client. For example, a user can choose Remember Me when logging into the Excel Client, and then that user will not be prompted when subsequently accessing either the Excel Client or the Windows Client. However, if the user attempts to access the Web Client, they will be prompted for credentials (and can then choose to be separately remembered for the Web Client).

**NOTE:** Logging out of a client will clear the remembered status for that client type. Although the Excel Client and Windows Client do not have an explicit log out feature, logging out of the Word or PowerPoint add-in will clear the remembered status for the Desktop Client (but only if you are not also currently logged into another instance of the Desktop Client).

If you do not want users to have access to the Remember Me option, so that they must log in each time, then you can disable the feature by setting the system configuration setting **ShowRememberMe** to **False**. This will hide the option from the various login screens. Keep in mind that if a user has already used the Remember Me option, hiding the setting will not clear the user's stored credentials. The user will continue to be remembered until they log out and cause their credentials to be cleared.

# Using SSL

You can set up the Axiom Application Server to use Secure Socket Layer (SSL) security, assuming that you have provided a certificate and configured IIS appropriately to support it.

When installing the application server, specify the URI as HTTPS if you will be using SSL. Additionally, if you want the site to require SSL, you can select the **Require SSL** option for the application server. Please see Installing the Axiom Application Server for more information, and contact Kaufman Hall Software Support if you need assistance configuring SSL for your Axiom Software implementation.

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# Installing Axiom Software Server Components

This section discusses the installation process for the Axiom Software server components, including:

- Creating or restoring the Axiom Software database
- Installing the Axiom Software Application Server
- Installing the Axiom Scheduler Service
- Installing the Axiom Update Service

**IMPORTANT:** This process is for new installations. If you are upgrading an existing installation, see Upgrading Axiom Software before performing any installation steps.

## Before you install

Before beginning the server installation process, make sure the following prerequisites have been completed:

- Microsoft SQL Server is installed on the database server. See Microsoft SQL Server.
- Microsoft IIS is installed on the application server. See Microsoft IIS.
- Microsoft .NET updates have been performed on all servers that will host an Axiom Software server component. See Microsoft .NET Framework.

## Axiom Software Manager

The Axiom Software Manager is used to install and configure all Axiom Software server components and the Axiom Software database. This package must be copied to any server where you plan to install Axiom Software.

As a first step to installing Axiom Software on any server, you should:

- Create a folder named `C:\AxiomFiles` on the server.
- Extract the contents of the Axiom installation package into a sub-folder named `\Axiom_v2019_1`.

**NOTE:** You can name these folders whatever you like. The previous example names are used in this document.

The Software Manager package is named `AxiomSoftwareManager.exe` and is located in the `C:\AxiomFiles\Axiom_2019_1` folder (assuming the contents of the installation package were extracted using the example folder names). We recommend keeping the installation package on the server after the installation is complete, since the Software Manager can also be used to view installation details, configure the database, and uninstall the software if needed.

**NOTE:** The Software Manager must be run as an administrator when installing software or when configuring the application server.


*Example Axiom Software Manager*

# Preparing the Axiom Software database

Use the Axiom Software Manager to create or restore the Axiom Software database. For more information on the Software Manager, see Axiom Software Manager.

For this purpose, you can run the Software Manager from any location that can connect to the database server (however, it may be easiest to run the Software Manager from the application server). When you perform an action that requires a database connection, you must enter database administrator credentials. The credentials only need to be entered once per session for each database that you try to connect to.

**NOTE:** If you need to clear the stored database administrator credentials so that you can re-enter them, click **Action > Clear DBA Credentials**.

## Creating or restoring the database

You can create a new blank Axiom Software database, or you can restore a copy of an existing Axiom Software database. For new customers, eventually you will be restoring a database provided by your implementation consultant, but the blank database can be used for installation in the meantime.

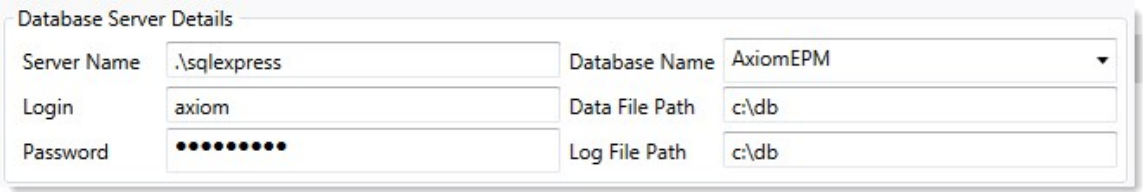
**NOTE:** The blank database contains one admin user (user name: admin, password: admin) that you can use to log into the Axiom Software system. You should change the password of this user after logging in. Once real users have been set up for your implementation, you can delete this user.

If you are restoring a database, the backup file must first be placed on the database server. The restore file path is local to the database server.

**To create or restore the Axiom Software database:**

1. In the Software Manager, click **Database Manager > Restore Databases**. (You can also click **Create/Restore** from the home screen.)
2. Complete the **Database Server Details** section with the information necessary to connect to the database server and create the Axiom Software database.

| Item | Description |
|---|---|
| Server Name | The server name of the SQL database server. If you are not using the default instance, append the instance name with a backward slash (Server\Instance). |
| Login<br>Password | The login name and password for the database. If you are creating a new database, you can set the name and password as necessary to meet your organization's requirements. If you are restoring an existing database, the name and password must match the existing name and password on the database. |
| Database Name | The name of the database. |
| Data File Path<br>Log File Path | The location to place the data files and the log files on the database server. Paths are relative to the database server. |




*Example Database Server Details*

3. In the **Restore System** section, select the check box for **Application Database**, and then select one of the following:
   - **Create New**: Create a system starting with an entirely blank database.
   - **Restore**: Create a system from a backup copy of an existing database.

   All paths are local to the database server.


*Example Restore System database*

4. By default, when you select the Application Database, the **Audit Database** is also selected. In most cases you want to leave this selected and use **Create New - Standalone** to create a separate audit database for the system. Alternatively, the **Create New - Embedded** option will create the audit database tables within the application database. This embedded configuration is intended for use with Axiom cloud service systems.

   **IMPORTANT:** Do not select the embedded database option unless you are instructed to do so by Kaufman Hall Software Support.

   The **Restore** option for the audit database is typically only used when restoring an entire system from backup in a production environment, and only when the audit database is a standalone database. If the audit database is embedded within the application database, then it will be restored when the application database is restored.

5. When all database settings are complete, click **Restore** at the bottom of the screen.
6. If you have not previously entered database administrator credentials, you are prompted to enter them. Enter the credentials (or use Trusted Authentication if you have database administrator rights) and then click **OK**.

A confirmation message displays when the process is complete. When you click **OK** to dismiss the confirmation message, the Software Manager automatically opens the **Upgrade Databases** screen. In all cases, you must upgrade the database after creating a new database or restoring an existing database. See the following section for more details.

## Upgrading the database

After creating or restoring the database, it must be upgraded to the current Axiom Software version. The **Upgrade Databases** screen will automatically open after using the **Restore Databases** screen to create or restore a database, with the information for the database pre-populated. In most cases you can simply click **Upgrade** on this screen. However, the full instructions are provided below in case you ever need to manually perform this action.

**To upgrade the database:**

1. In the Software Manager, click **Database Manager > Upgrade Databases**.
2. In the **Database Server Details** section, complete the following:
   - **Server Name**: Enter the database server name. If you are not using the default instance, append the instance name with a backward slash (Server\Instance).
   - **Database Name**: Enter the database name.

   Once a database server and name have been specified, the details display in the **System Database Details** section. Note that the Axiom user name for the database is the login name as currently specified on the **Restore Databases** screen. If you have come to the Upgrade Databases screen directly and you need to specify a different user name for the database that you want to upgrade, you can enter the correct user name into the **Axiom User Login** field.
3. Click **Upgrade** to upgrade the specified database.

A confirmation message box displays when the upgrade is complete.

# Installing the Axiom Application Server

The following requirements apply to the Axiom Application Server installation:

- You must have administrator rights on the server to run the installation.
- During the installation, you will be prompted for a valid Axiom Software license file, as well as the connection information for the Axiom Software database. The installation cannot be completed without this information.
- The server must have Internet access in order to successfully complete the installation. This access is necessary to validate the Kaufman Hall signed publisher certificate. If it is not possible to enable Internet access to the server, additional workarounds are available, as detailed in this Microsoft Support article.

**NOTE:** Once you enter the installation screens, there is no Cancel button. To cancel an installation, move to a different location within the Axiom Software Manager, or close the Software Manager.

**To install the Axiom Application Server:**

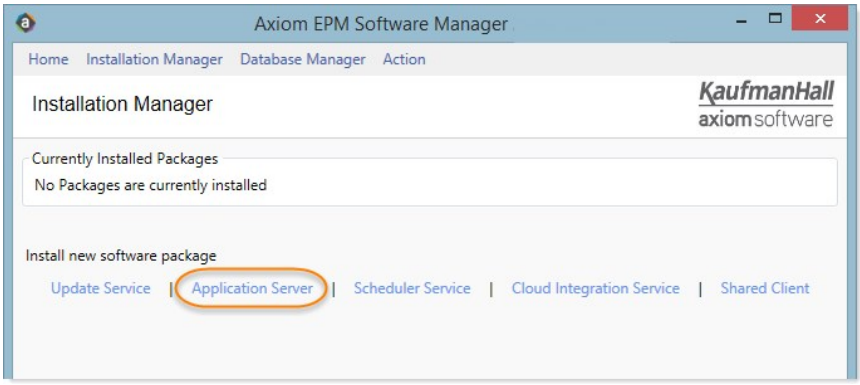
1. Navigate to `C:\AxiomFiles\Axiom_2019_1` and then double-click `AxiomSoftwareManager.exe`.

   This assumes that you have already extracted the Axiom Software installation package to the server. For more information, see Axiom Software Manager.

2. From the **Home** screen of the Software Manager, click **Manage Software**.

   **TIP:** You can also click **Installation Manager > Manage Software Packages** on the menu bar.

3. On the **Installation Manager** screen, under **Install new software package**, click **Application Server**.

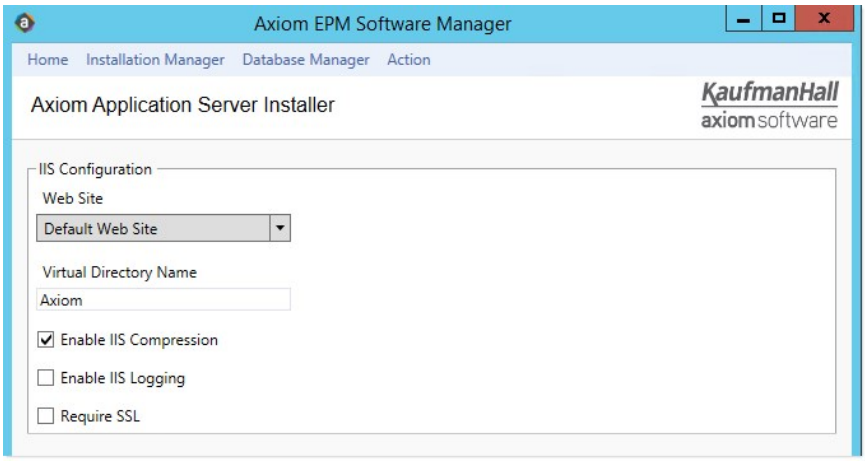



   The Axiom Application Server Installer begins. The installation is performed within the Software Manager—a separate installer program is not launched. While using the installer, do not use the menu to move to other locations in the Software Manager, unless you want to cancel the installation.

4. On the **License Agreement** screen, click **I accept** and then click **Next**.

5. On the **IIS Configuration** screen, complete the following settings and then click **Next**:

| Item | Description |
|---|---|
| Web Site | By default, this is set to **Default Web Site**. This should not be changed. |
| Virtual Directory Name | By default, the virtual directory name is **Axiom**. You can change the name if desired.<br><br>The virtual directory name defines how the system is accessed via the web. All examples in the documentation assume the default virtual directory name. |
| Enable IIS Compression | This option enables HTTP compression for the IIS application pool. This may improve performance, especially in environments where network bandwidth is an issue.<br><br>If you do not want to enable compression, clear the check box. We recommend discussing the need for compression with Kaufman Hall Software Support before disabling the option. |
| Enable IIS Logging | This option enables IIS logging for the application. This is disabled by default because in most cases it is not necessary and does not provide useful information. However, it can be enabled if it is needed to help diagnose a particular issue. |
| Require SSL | This option configures the Axiom Software virtual directory to require SSL. You should select this option if you want all access to this web site to use SSL. Selecting this option will require the application server URI to be in HTTPS format.<br><br>**NOTE:** This option does not configure the web site to require SSL; you must manually configure this for the specified web site within IIS. It simply configures the Axiom Software virtual directory as appropriate for environments where SSL is required.<br><br>If you want to use a mixed mode for this web site, then do not select this check box. You can enable mixed mode by manually specifying an HTTPS address for the Axiom Application Server URI on the next installation screen. |




6. On the **Installation Folder** screen, specify the location where the Axiom Software files will be installed, and then click **Next**.

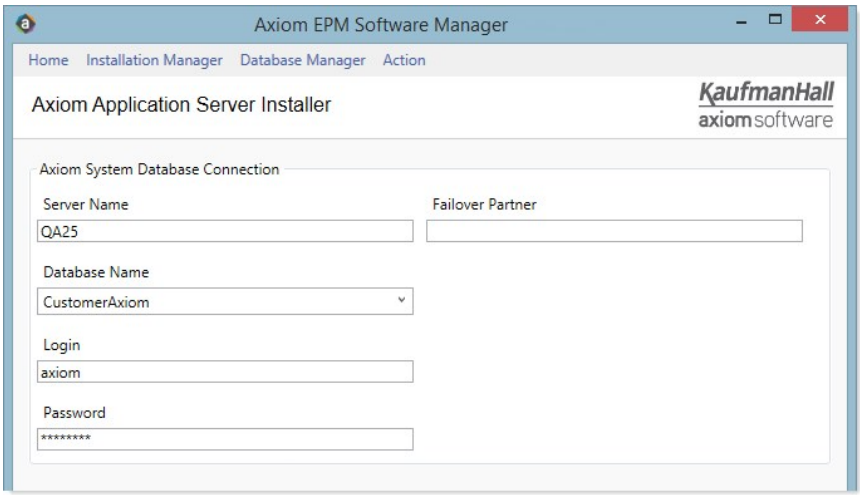
   By default, the installation location is `C:\Inetpub\wwwroot\Axiom` (where Axiom is the default virtual directory name). This location should not be changed (except to account for differences in the virtual directory name).

7. On the **System Database Connection** screen, configure the connection from the application server to the Axiom Software database, and then click **Next**.

   To configure the connection string, complete the following settings:

| Item | Description |
|---|---|
| Server Name | The server name of the SQL database server that hosts the Axiom Software database. |
| Failover Partner | Optional. The server name of the database server to be used in failover situations. This only applies to cloud service systems; otherwise it should be left blank. |
| Database Name | The name of the database for Axiom Software. |
| Login | The login name for the Axiom Software database. |
| Password | The password for the Axiom Software database.<br><br>**NOTE:** The last-entered password will be remembered when using the one-click upgrade, but the password must be typed in when performing new installations or repairs of existing installations. |

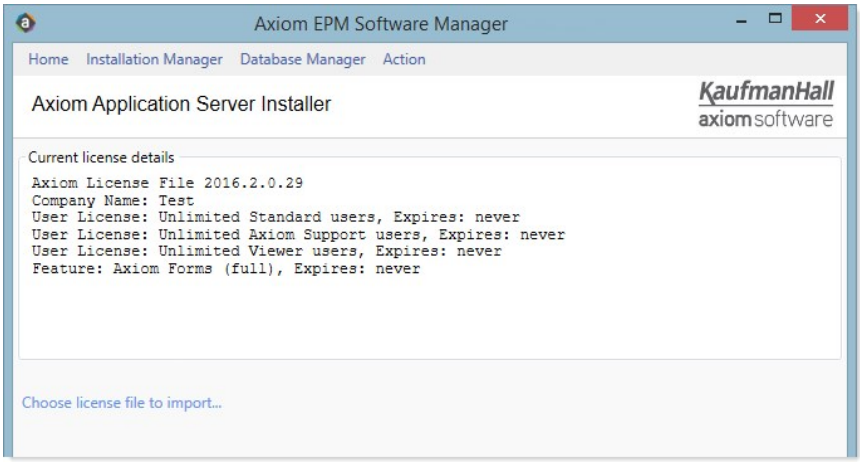
   This is the same database information that was used when creating or restoring the Axiom Software database (Creating or restoring the database).




This information must be provided in order to continue with the install. The connection information can be changed later by using the **Configure Connections** page of the Software Manager.

8. On the **License File** screen, upload your Axiom Software license file, and then click **Next**.

   Click **Choose license file to import**, then navigate to the location where you have saved the license file provided by Axiom Software. Once you have uploaded the file, the license details display on this screen, as shown in the following screenshot.

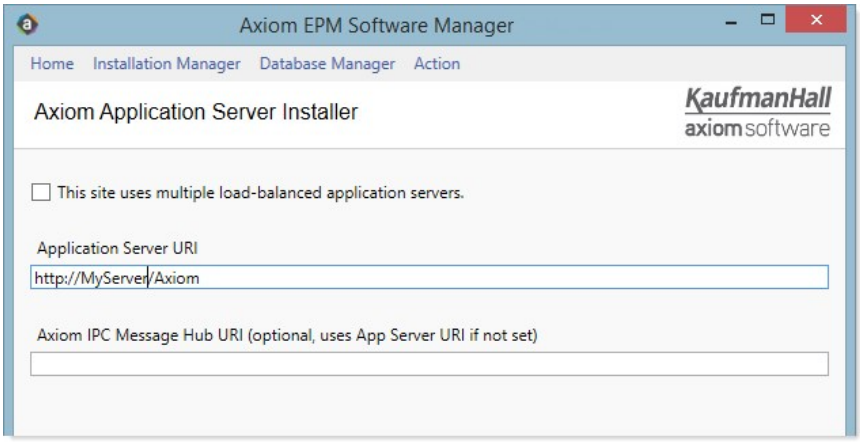



   A valid license file must be provided in order to continue with the install. The license file can be updated later by using the **License Manager** page of the Software Manager. You can also update your license using the administration features of the Axiom Web Client.

9. On the **Application Server URI** screen, specify the URI to the application server, and then click **Next**.

   By default, the **Application Server URI** is `http://<servername>/Axiom`. If you changed the web site or the virtual directory name in the prior screen, then you must update this URI to match.

   In most cases you will leave the **Axiom IPC Message Hub URI** blank, so that it uses the default URI (the application server URI).




*Example Application Server URI screen*

**NOTE:** The option **This site uses multiple load-balanced application servers** is provided for legacy configurations. You should not enable this option unless instructed to by Kaufman Hall Software Support.

### Configuring SSL

If you selected **Require SSL** on the previous installation screen, then the URI is in HTTPS format by default. If you want to use SSL for the Axiom Software virtual directory but not require SSL for the web site, then you can manually change the URI to use HTTPS. This will configure the virtual directory to support SSL in a mixed-mode environment.

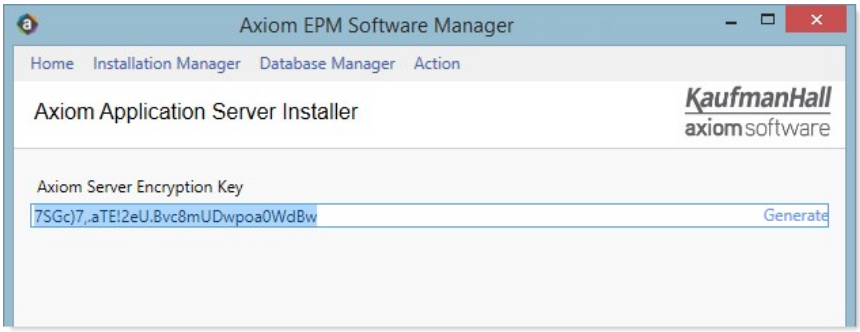
10. On the **Axiom Server Encryption Key** screen, enter an encryption key and then click **Next**.

    The encryption key is for security purposes. It is used by the Axiom Application Server to authenticate requests from the Axiom Scheduler Service. There are two options to specify the key:

    - Click **Generate** to randomly generate an encryption key. If you generate a key, be sure to copy and paste the key to a temporary location so that you can use it when you subsequently install the Axiom Scheduler Service. Once you have used the key in your application server installation and your Scheduler service installation, it will be remembered by the installer so you have no further need to save the key.

      **NOTE:** If you move your cursor out of the encryption key field, the key will become masked (meaning it displays as asterisks). You can place your cursor back in the field to read the key.

    - Alternatively, you can type in your own key. Axiom Software does not enforce any rules on the key string. If you choose to use your own key, it is your responsibility to ensure that the key is of an adequate strength for your organization's security requirements.

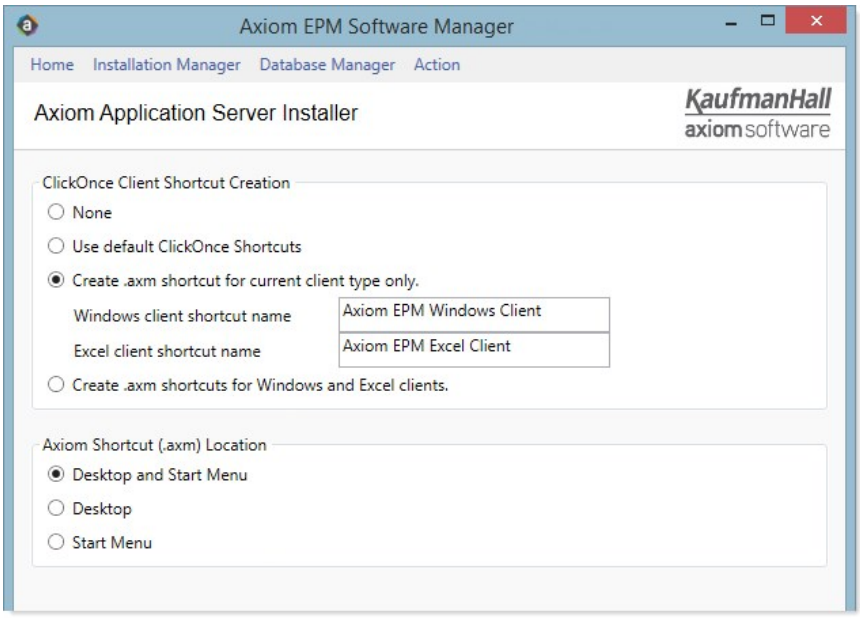



11. On the **ClickOnce Client Shortcut** screen, complete the following settings and then click **Next**.

    These settings determine whether and where shortcuts will be created on client workstations when using the ClickOnce installer to install the Axiom Windows Client and Axiom Excel Client.

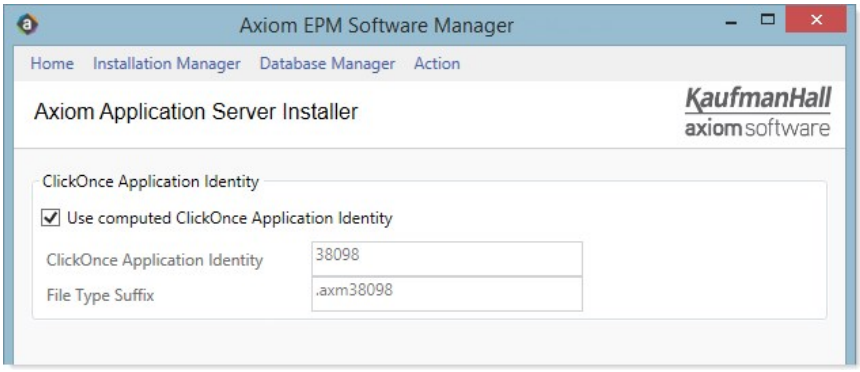
| Item | Description |
| --- | --- |
| ClickOnce Client Shortcut Creation | Select one of the following:<br>• **None**: No shortcuts will be created on client workstations.<br>• **Use default ClickOnce Shortcuts**: One shortcut will be created on the client workstation, which launches the last-launched client version (Excel Client or Windows Client). If a user wants to launch the other client version, they must use the Web Client to switch back and forth.<br>• **Create .axm shortcut for current client type only** (Default): An AXM shortcut will be created when you install/launch a particular client type (Excel Client or Windows Client). Users who only use one client type will only see the shortcut for that type. The other shortcut will only be created if you launch the other client type. If desired, you can change the default name for each shortcut.<br>• **Create .axm shortcuts for Windows and Excel clients**: AXM shortcuts will be created for both client types when a user installs the Axiom Software client. If desired, you can change the default name for each shortcut. |
| Axiom Shortcut Location | If the prior option is set to anything other than **None**, then select one of the following options to specify where the client shortcuts will be created:<br>• **Desktop and Start Menu** (Default)<br>• **Desktop**<br>• **Start Menu**<br>In very controlled IT environments, users may not have permission to create desktop shortcuts, therefore causing the installation to fail. In these environments you can select **Start Menu** so that users are able to complete the installation and still have access to a shortcut. |

**NOTE:** AXM shortcuts are special Axiom Software files that can be used to launch specific client versions using the ClickOnce protocol. From a user's perspective the shortcut is the same, except that AXM shortcuts are not automatically removed if the client program is uninstalled. ClickOnce shortcuts are automatically removed when the client is uninstalled.




12. On the **ClickOnce Application Identity** screen, specify the identity code for this particular Axiom Software installation, and then click **Next**.

    The ClickOnce Application Identity is used to uniquely identify this particular Axiom Software installation for purposes of future client updates and for launching this installation via AXM shortcut. You can leave the default settings to use the automatically-computed number for the identity (recommended), or you can clear the check box and enter a number. (If you manually enter a number, you should put the same number on the file type suffix.) You can also choose to disable use of the identity, but this is not recommended.



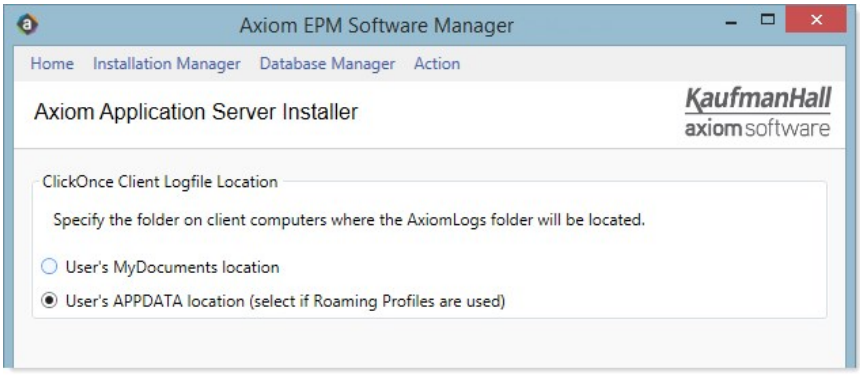
13. On the **Default Proxy Configuration** screen, specify whether to allow use of the default proxy when accessing the Axiom Application Server, and then click **Next**.

    If **Disable use of the default proxy for application server access** is selected (the default behavior), then users cannot use the default proxy to access the application server. In most environments this will improve performance.

    However, in some environments disabling proxy access may prevent clients from being able to access the application server. For these environments, the check box should be cleared to allow use of the default proxy.

14. On the **ClickOnce Client Logfile Location** screen, specify the location where the AxiomLogs folder will be created on client machines, and then click **Next**.

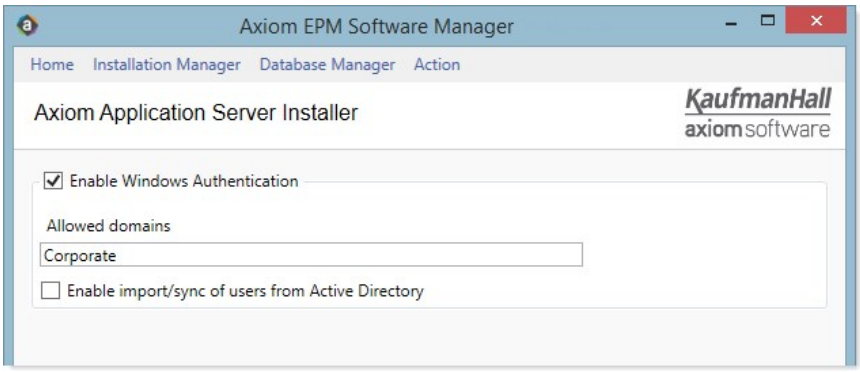
    By default, the folder is created in the user's APPDATA folder. If desired, you can change the location to the user's My Documents folder.



15. On the **Enable Windows Authentication** screen, choose whether to enable Windows Authentication, and then click **Next**.

    If you want to use Windows Authentication, then leave the **Enable Windows Authentication** option checked and complete the following settings. If you do not want to use Windows Authentication, then clear the check box. For more information, see Authentication methods.

| Item | Description |
|---|---|
| Allowed domains | The recognized domains for Windows Authentication.<br><br>Enter one or more domain names. Separate multiple domain names with commas. Users will be authenticated against the specified domains. |
| Enable import/sync of users from Active Directory | If selected, then the installation will allow use of the Active Directory Import Scheduler task to import and synchronize Active Directory users into Axiom Software security.<br><br>Selecting this option simply enables the ability to use the Scheduler task. You must set up the Scheduler task within a system and schedule it for execution in order to import and synchronize users. If this option is not selected, then the Scheduler task can be configured but it will not execute. |




**NOTE:** You can change these settings for the installation later by using **Installation Manager > Configure Authentication Methods**.

16. On the **Enable LDAP Authentication** screen, choose whether to enable LDAP Authentication, and then click **Next**.

    If you want to use LDAP Authentication, select **Enable LDAP Authentication** and then complete the following settings. For more information, see Authentication methods.

| Item | Description |
|---|---|
| LDAP server connection string | The connection string for the LDAP directory that you want to authenticate users against. |
| LDAP connection user name | The user identity under which the application server will access the LDAP directory, for the purposes of passing user credentials for authentication. |
| LDAP connection password | The password for the designated user name. |
| Allowed suffixes | Recognized suffixes for use with LDAP authentication, such as: `@mydomain.local`.<br><br>Including the @ sign in the suffix is optional (if it is omitted, it will be automatically included when submitting credentials for authentication). If needed, separate multiple suffixes with commas. |

    **NOTE:** You can change these settings for the installation later by using **Installation Manager > Configure Authentication Methods**.

17. On the **SAML Authentication** screen, click **Next**.

    SAML Authentication is not supported for use with on-premise installations. It is only present in the installer for legacy installations.

18. On the **OpenID Authentication** screen, choose whether to enable OpenID Authentication, and then click **Next**.

    If you want to use OpenID Authentication, select **Use OpenID for user authentication** and then complete the following settings.

| Item | Description |
|---|---|
| OpenID provider API client ID | The client ID for the OpenID provider. |
| OpenID provider API client secret | The client secret for the OpenID provider. |

    For example, if using Google OpenID Connect, the client ID and client secret can be obtained from the Google Developers Console, within the project you are using for authentication.

**NOTE:** Additional setup is required to fully enable the OpenID Authentication. For more information, see Authentication methods and contact Kaufman Hall Software Support for assistance as needed.

19. On the **Ready to install** screen, click **Install** to begin the installation.

A status bar displays the progress of the installation. When the installation is complete, click **Done** to exit the installer. You are returned to the **Installation Manager** screen, where you can see the details of the newly installed application server.

### Post-installation steps

While you are on the server that is hosting the application server, you should also install the Axiom Software Update Service to enable future software updates. For more information, see Installing Axiom Update Service.

# Installing Axiom Scheduler Service

Perform the Axiom Scheduler Service installation on each server that you want to use for Scheduler task processing. Larger installations may need multiple dedicated Scheduler servers. The logged in user must have administrator rights on the server to run the installation.

**NOTES:**

- Scheduler does not direct task traffic to other machines, it performs processing on the machines where it is installed.
- Once you enter the installation screens, there is no Cancel button. To cancel an installation, move to a different location within the Axiom Software Manager, or close the Software Manager.

**To install the Axiom Scheduler Service:**

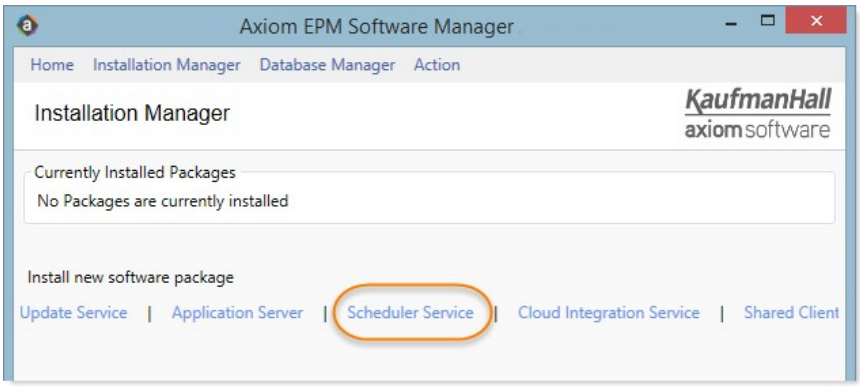
1. Navigate to `C:\AxiomFiles\Axiom_2019_1`, and then double-click `AxiomSoftwareManager.exe`.

   This assumes that you have already extracted the Axiom Software installation package to the server. For more information, see Axiom Software Manager.

2. From the **Home** screen of the software manager, click **Manage Software**.

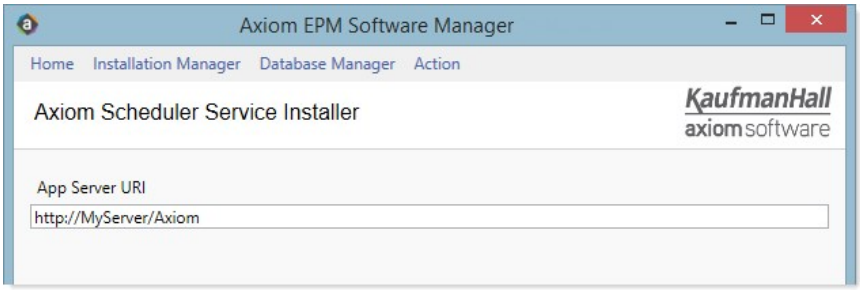
   **TIP:** You can also click **Installation Manager > Manage Software Packages** on the menu bar.

3. On the **Installation Manager** screen, under **Install new software package**, click **Scheduler Service**.




The Axiom Scheduler Service Installer begins. The installation is performed within the Software Manager—a separate installer program is not launched. While using the installer, do not use the menu to move to other locations in the Software Manager, unless you want to cancel the installation.

4. On the **License Agreement** screen, click **I accept** and then click **Next**.
5. On the **App Server URI** screen, specify the URI to the Axiom Application Server, and then click **Next**.




This is the URI that the Scheduler service will use to access the Axiom Application Server. By default, this is `http://<APPSERVER>/Axiom`. You must edit the URI to specify the name of the server where the application server component was installed. If you changed the name of the virtual directory for the application server, then you must edit that too.

6. On the **Installation Folder** screen, specify the installation location for the Scheduler program files, and then
click **Next**.

   You can accept the default installation location, or click Browse to select a different location. By default, the location is:

   `C:\Program Files (x86)\Axiom EPM\Axiom EPM Scheduler Service\`

7. On the **Service Name** screen, specify the name of the Scheduler service, and then click **Next**.

The default name is **Axiom EPM Scheduler Service**. We recommend leaving the default name unless you will be installing multiple versions of the service on this machine and you need to be able to differentiate them.

8. On the **Axiom Server Encryption Key** screen, enter the encryption key that was used in the Axiom Application Server installation, and then click **Next**.

   The key must match the key used by the application server. The key is used to encrypt traffic between the Scheduler service and the application server.

   > **TIP:** If you do not know the encryption key that was used for the Axiom Application Server installation, then you can find out the encryption key by going to **Installation Manager > Configure Service Encryption**. Place your cursor in the field to read the encryption key. Keep in mind that leaving the installation screens will cancel the installation, so you will need to start over once you get the key.

9. On the **Application server** screen, specify whether to use the embedded application server, and then click **Next**.

   By default, the Scheduler installation includes an embedded application server instance that can be used to poll for queued Scheduler jobs, service requests as a result of job processing, and report the status of the Scheduler service to the system.

   It is recommended for most configurations to leave **Use embedded application server** enabled, for improved system performance. However, in some situations you may wish to disable this option. For example, if a firewall prevents direct contact between the Scheduler server and the database server, then you should disable this option.

   The second option on this screen, **Install EdiDev runtime components**, only applies to Contract Management installations. This option must be left unchecked unless you are instructed to enable it as part of a Contract Management implementation.

10. On the **Ready to Install** screen, click **Install** to begin the installation.

A status bar displays the progress of the installation. When the installation is complete, click **Done** to exit the installer. You are returned to the **Installation Manager** screen, where you can see the details of the newly installed package.

## Post-installation steps

Axiom Software will attempt to automatically start the Scheduler service after the installation. If you discover that the service is not running, you can start it manually as follows:

1. In Windows **Administrative Tools**, go to **Services**.
2. Right-click **Axiom EPM Scheduler Service** and then select **Start**.

Also, while you are on the server that is hosting the Scheduler service, you should also install the Axiom Software Update Service to enable future software updates. For more information, see Installing Axiom Update Service.

# Installing Axiom Update Service

Perform the Axiom Update Service installation on each server where either of the following components is installed: Axiom Application Server or Axiom Scheduler Service.

The Update Service is not required in order to operate the Axiom Software application. However, it is required if you want to perform future upgrades to the software using the Software Updates tool.

**NOTE:** Once you enter the installation screens, there is no Cancel button. To cancel an installation, move to a different location within the Axiom Software Manager, or close the Software Manager.

**To install the Axiom Update Service:**

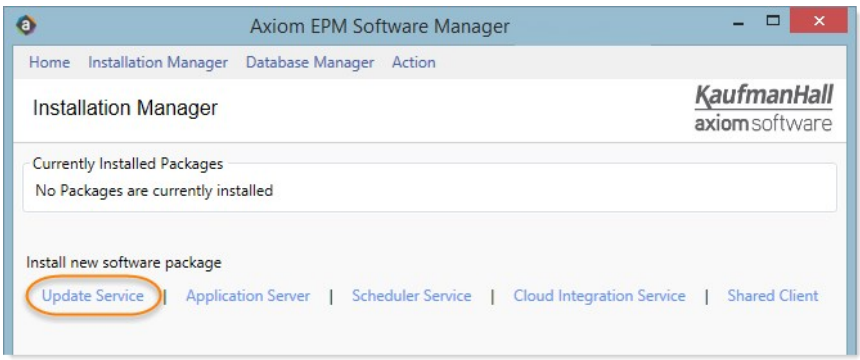
1. Navigate to `C:\AxiomFiles\Axiom_2019_1`, and then double-click `AxiomSoftwareManager.exe`.

   This assumes that you have already extracted the Axiom Software installation package to the server. For more information, see Axiom Software Manager.

2. From the **Home** screen of the software manager, click **Manage Software**.

   **TIP:** You can also click **Installation Manager > Manage Software Packages** on the menu bar.

3. On the **Installation Manager** screen, under **Install new software package**, click **Update Service**.




   The Axiom Update Service Installer begins. The installation is performed within the Software Manager—a separate installer program is not launched. While using the installer, do not use the menu to move to other locations in the Software Manager, unless you want to cancel the installation.

4. On the **License Agreement** screen, click **I accept** and then click **Next**.

5. On the **Installation Folder** screen, specify the installation location for the Update Service program files, and then click **Next**.

   You can accept the default installation location, or click Browse to select a different location. By default, the location is:

   `C:\Program Files (x86)\Axiom EPM\Axiom EPM Update Service\`

6. On the **Service Name** screen, specify the name of the update service, and then click **Next**.

   The default name is **Axiom EPM Update Service**. We recommend leaving the default name unless you will be installing multiple versions of the service on this machine and you need to be able to differentiate them.

7. On the **Ready to Install** screen, click **Install** to begin the installation.

A status bar displays the progress of the installation. When the installation is complete, click **Done** to exit the installer. You are returned to the **Installation Manager** screen, where you can see the details of the newly installed package.

# Uninstalling server components

The Axiom Software server components can be uninstalled by using the Axiom Software Manager.

**NOTE:** These server components do not display in the Windows program manager and cannot be uninstalled from that location.

**To uninstall a server component:**

1. On the server where you want to uninstall a component, navigate to the location where you saved the Software Manager, and then double-click `AxiomSoftwareManager.exe`. For example: `C:\AxiomFiles\Axiom_2019_1`. For more information on the Software Manager, see Axiom Software Manager.

   If you did not save a copy of the Software Manager on the server, then you will need to obtain a copy in order to perform the uninstall. You can download Axiom Software installation packages from the Kaufman Hall Support site. In order to uninstall a component, you can use the same version that is currently installed or a higher version. If you need assistance obtaining a copy of the Software Manager, contact Kaufman Hall Software Support.

2. From the **Home** screen of the Software Manager, click **Manage Software**.

3. In the **Installation Manager** screen, in the **Currently Installed Packages** section, locate the component that you want to uninstall, and then click **Uninstall**.

4. At the first uninstall confirmation screen, click **Next** to continue.

5. At the **Local Content** screen, specify whether to preserve locally modified files, or delete all package files, and then click **Next**.

   By default, **Preserve locally modified files and logs** is selected. This means that any file that was modified after installation, such as log files and .config files, will not be deleted as part of the uninstall. If later you want to reinstall to this same folder location, you will need to manually delete these files and the installation folder.

   If you know that you do not need these files, you can select **Remove package folder and all files**. In this case the entire installation folder will be deleted.

6. Click **Uninstall**.

# Repairing or modifying server components

You can repair and modify server components using the Software Manager. When you repair a component, the component is basically reinstalled. You can change any of the installation options.

During the repair process, all configuration files are replaced with the deployment versions, even if they have been locally modified. This is different than the upgrade process, which preserves locally modified configuration files.

**To repair or modify a server component:**

1. On the server where you want to repair a component, navigate to the location where you saved the Software Manager, and then double-click `AxiomSoftwareManager.exe`. For example: `C:\AxiomFiles\Axiom_2019_1`. For more information on the Software Manager, see Axiom Software Manager.

   If you did not save a copy of the Software Manager on the server, then you will need to obtain a copy in order to perform the repair. You can download Axiom Software installation packages from the Kaufman Hall Support site. In order to repair a component, you must use the same version that is currently installed (if you use a higher version, the component will be upgraded as part of the repair). If you need assistance obtaining a copy of the Software Manager, contact Kaufman Hall Software Support.

2. From the **Home** screen of the Software Manager, click **Manage Software**.

3. In the **Installation Manager** screen, in the **Currently Installed Packages** section, locate the component that you want to repair, and then click **Repair**.

Progress through the installation screens and modify any options as desired.

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# Installing the Axiom Software Client

This section discusses the installation process for the Axiom Excel Client and Axiom Windows Client on individual client workstations using ClickOnce deployment. Both the Excel Client and the Windows Client are installed using the same installer. Once the installer has been run, either client can be launched on the machine. The term *Desktop Client* is often used to refer to both of these clients.

The Axiom Web Client operates within a browser and does not require any installation. The only requirement is a browser that meets the technical requirements. For information on these requirements, see the separate document *Client Technical Requirements*.

**NOTE:** Certain system configuration settings should be completed before the client is deployed to end users. However, at least one client installation must occur before you can set up users in Security and finish configuring the default system Scheduler jobs. You may also want to deploy the client to a handful of users for system testing before finalizing the configuration settings. For more information on configuration, see Configuring Axiom Software.

## Before you install

Before beginning the client installation process, make sure the following prerequisites have been completed on the client workstations:

- Microsoft Edge or Internet Explorer is installed. See Web browser.
- Microsoft .NET Framework is installed. See Microsoft .NET Framework.
- Microsoft Excel is installed on any machine where you want to use the Excel Client. See Microsoft Excel.
- Microsoft VSTO is installed on any machine where you want to use the Excel Client. See Microsoft VSTO.

The only installer prerequisite is .NET. If the minimum required version of .NET is not present, the installer displays a message about the missing requirement and cancels the installation. If the other prerequisites are not present, then the client program will still be installed on the machine, but it may not be able to be launched until the remaining prerequisites are installed.

# Installing the Axiom Software Client on client workstations

This section explains the installation of the Axiom Software Desktop Client on individual client workstations using ClickOnce.

## Use of ClickOnce for client installations

Axiom Software takes advantage of the Microsoft ClickOnce technology that is included with the Microsoft .NET Framework. This technology allows for the installation and launch of the Axiom Software Excel Client or Windows Client software with minimal interaction from the user.

The IT department, which is responsible for the implementation of Axiom Software along with the maintenance of the servers that Axiom Software resides on, benefits from the ClickOnce technology in three major ways:

- **The Axiom Software Client is easy to update.** When upgrading to a new version of Axiom Software, the upgrade software is only run on the Axiom Software server components. When a user launches the Axiom Software Client, the software immediately recognizes that a new version has been installed, prompts the user to install it, downloads and installs the update, and then launches the application.
- **Minimal impact to user computers and other installed applications.** Traditional applications are installed using Windows Installer deployment and often rely on shared components, which can create potential versioning conflicts. By utilizing the ClickOnce deployment technology, the Axiom Software Client is completely self-contained and does not interfere with other applications.
- **No changes to end user permissions.** Applications deployed using Windows Installer often require “local administrator” permissions, which can present problems when users do not have such access. Non-administrative users can install and launch the Axiom Software Client without elevated permissions.

## Performing the client installation

You can perform the Desktop Client installation from any page of the Axiom Web Client, using the **Quick Launch** menu.

Users must log in to Axiom Software in order to install the Desktop Client from the Web Client. Anonymous access is not allowed. Users cannot install the client and then obtain login credentials later.

**To install the Axiom Software Desktop Client:**

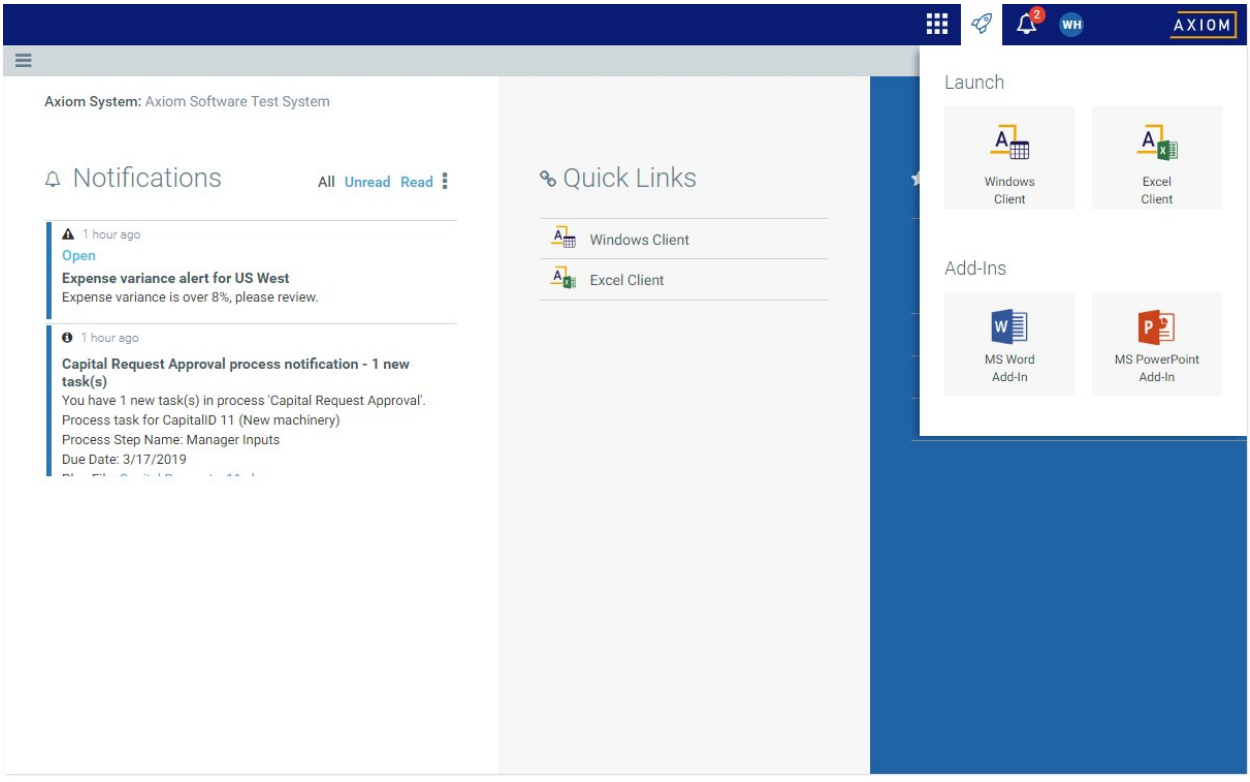
1. Open the Axiom Web Client in your browser, using the following URL:

`http://<servername>/Axiom`

Where *<servername>* is the name of the application server and Axiom is the default name of the virtual directory. If you specified a different virtual directory name during the application server installation, you must use that.

2. Enter your user name and password to access Axiom Software.
3. Once you have logged in, click the Quick Launch icon in the blue bar across the top of the page.
4. In the Quick Launch menu, click on one of the following icons:
   - **Windows Client**
   - **Excel Client**

**TIP:** If you see the default home page when you log in (as shown in the following screenshot), you can also install and launch the client using the links in the **Quick Links** section.




*Example Quick Launch menu to install and launch the Desktop Client*

The first time that a user launches the client from a specific workstation, the following occurs:

1. The installer verifies that required prerequisites are present. As previously noted, the installer only checks for the minimum required version of .NET. The absence of other prerequisites does not stop the installation.
2. The installer downloads the client installation package and installs both clients (Excel and

Windows).

3. When the installation is finished, the client type (Excel or Windows) that was specified in the link is launched.

Each subsequent time that the user launches the client from a specific workstation, the following occurs:

1. The installer checks the application server for any system updates. If any updates are found, they are downloaded and installed. Otherwise, no installation activity occurs on subsequent visits.
2. The client type (Excel or Windows) that was specified in the link or shortcut is launched.

For example, if a user first clicks on the link to launch the Excel Client, it will install the client program and then launch the Excel Client. If the user subsequently clicks on the link to launch the Windows Client, then the program does not need to be installed again, and the link will simply launch the Windows Client.

**NOTE:** If your end users will be using the Windows Client exclusively, you can optionally hide the Excel Client icon from the Quick Launch menu. To do this, set the system configuration setting **AllowShowExcel** to **False**. If you have a handful of users who need to install the Excel Client, those users can install it before you hide the icon, or you can use an installation URL to directly install/launch the Excel Client.

## Prerequisite downloads

If a user does not have the necessary prerequisites to install the Axiom Software Desktop Client, these prerequisites can be installed from the Web Client as needed. Generally, installation of prerequisites requires administration privileges on the client machine.

**To access the prerequisite download page:**

1. Click the menu icon  in the blue bar across the top of the page to open the Area menu.
2. Click **About Axiom Software** at the bottom of the Area menu.
3. In the About Axiom Software dialog, under **Download**, click **Necessary software tools for running Axiom desktop client applications**.

This takes you to the prerequisite download page. From here, you can download prerequisites such as Microsoft .NET and VSTO.

## Installation URLs

If desired, you can provide users with a link to install and launch the appropriate client, instead of having them launch it through the Web Client. The following are some common launch URLs:

| Launch Action | URL |
|---|---|
| Excel Client | `http://<servername>/Axiom/c1/Axiom.UI.Start.application?client=Excel` |
| Windows Client | `http://<servername>/Axiom/c1/Axiom.UI.Start.application?client=Windows` |
| Use a language override | `http://<servername>/Axiom/c1/Axiom.UI.Start.application?client=Excel&lang=FR-fr`<br><br>Substitute the desired client and language code. |

Contact Kaufman Hall Software Support if you need assistance determining the correct URL to provide to your users for direct install/launch.

## Client shortcuts

Shortcut creation for the Axiom Software Desktop Client depends on the selections initially made during the application server installation. These shortcut options can be changed later by using Repair on the application server installation, or by modifying the system configuration settings.

The default behavior is to create shortcuts on both the desktop and the Start menu as needed—meaning, when a particular client version is launched (Excel Client or Windows Client), a shortcut is created for that specific version. For example, if a user only ever launches the Excel Client, then they will only have a shortcut to the Excel Client. If a user launches both clients, then they will have separate shortcuts for each client.

There are several shortcut options for the ClickOnce deployment, including placing shortcuts for both clients by default, or placing no shortcuts, or using the default ClickOnce shortcut that always launches the last-launched client. You can also specify whether shortcuts are created on the desktop, the Start menu, or both. For more details on the available options, see Installing the Axiom Application Server.

**NOTE:** Some authentication methods, such as OpenID, do not support launching the Axiom Software Desktop Client via shortcut.

# Uninstalling or repairing client components

### ▶ Uninstalling the ClickOnce Client

The Axiom Software ClickOnce Client can be uninstalled by using the program manager in the Windows Control Panel (**Uninstall or change a program**). Select **Axiom EPM Client**, and then select **Remove** or **Uninstall**. At the prompt, select **Remove the application from this computer**.

**NOTE:** If you used either of the AXM shortcut options for the ClickOnce installation, then those shortcuts will not be automatically removed from the desktop and/or the Start menu when the client is uninstalled. You must manually remove these shortcuts.

The uninstall process does not remove any files that have been modified after installation, such as log files. You can manually delete these files in the user's Windows document directory after uninstalling.

### Repairing the ClickOnce Client

The Axiom Software ClickOnce Client can be repaired by using the program manager in the Windows Control Panel (**Uninstall or change a program**). Select **Axiom EPM Client**, and then select **Remove** or **Uninstall**. At the prompt, select **Restore the application to its previous state**.

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# Configuring Axiom Software

This section provides information on the initial Axiom Software system setup and configuration.

## Editing system configuration settings

Axiom Software has a number of configuration settings that can be set on a per system basis. These settings are managed by using the Software Manager.

For the purposes of editing system configuration settings, the Software Manager must be run on the Axiom Application Server. For more information, see Axiom Software Manager.

**NOTE:** The system configuration settings can also be edited within Axiom Software itself, if desired. To do this, you must set up an Axiom file to use Save Type 4. For more information, see Axiom Software Help: **System administration > System configuration > Updating system configuration settings using Save Type 4**.

**To edit system configuration settings:**

1. In the Software Manager, click **Installation Manager > Configure System Properties**.
2. If necessary, from the **Application Server** list, select the application server installation.

   In most cases, only one instance of the Axiom Application Server is present on the machine, and you do not need to change anything. This option is for situations where multiple application servers may be installed on the same machine.
3. Edit any of the configuration settings as desired. For more information on the available configuration settings, see System Configuration Settings. For example, you may wish to edit the following:
   - For the **Scheduler_FromEmailAddress** property, enter an email address to use for the "From" address for Axiom email notifications. By default, this is set to `noreply@axiomepm.com`. This address will be used in all cases where a separate "From" address is not specified.
4. Click **OK**.

### Resetting the application server cache

The edited configuration settings will not be recognized until the application server cache is reset. The Software Manager will attempt to reset the cache automatically when you save changes to the system configuration settings. (Using Save Type 4 in the software will also automatically reset the cache as part of the save process.)

However, if you ever need to reset the cache manually, you can do so as follows:

1. In the Software Manager, click **Installation Manager > Reset Server Cache**.
2. If necessary, from the **Application Server** list, select the application server installation.

   In most cases, only one instance of the Axiom Software Application Server is present on the machine, and you do not need to change anything. This option is for situations where multiple application servers may be installed on the same machine.
3. Click **Reset**.

**TIP:** You can also reset the application server cache using the administration features of the Axiom Software Web Client.

# Setting up Scheduler

Axiom Software's Scheduler services manage certain system tasks and can also be used to automate user-defined tasks. After Axiom Software is installed, you must complete the Scheduler setup.

This setup is performed using the **Scheduler** dialog in the Axiom Software Client. You must have installed at least one client instance in order to perform these setup steps.

**To access the Scheduler dialog:**

1. Launch the Axiom Excel Client or the Windows Client. You must log in as a user that has system administrator rights.

   If you started with a new blank database, you can log into the system using the built-in admin user (user name: admin, password: admin). You should change the password of this user after logging in. Once real users have been set up for your implementation, you can delete this user.
2. On the **Axiom** tab, in the **Administration** group, click **Manage > Scheduler**.

   **NOTE:** In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

## Enabling Scheduler services

Each system has a system Scheduler service that runs on the Axiom Application Server, and one or more manually installed Scheduler services.

The system Scheduler service is installed and activated automatically as part of the Axiom Application Server installation. No special setup steps apply. This service is only used to process system jobs.

The manually-installed Scheduler services must be explicitly enabled within the Scheduler dialog. Even though the service itself is started as part of the Scheduler services installation, these services must be enabled in Scheduler in order to begin processing tasks.

**To enable Scheduler services:**

1. In the **Scheduler** dialog, on the **Service** tab, click **Servers**.

   You should see at least two entries in the **Servers** tab:

   - *<AppServerName>*-System: This is the system Scheduler service.
   - *<SchedulerServerName>*: This is a manually installed Scheduler service. You will have an entry for each server where you manually installed Scheduler.

2. For each manually-installed Scheduler service, select the service in the list. In the **Configuration details** section, select the **Processing Enabled** check box, and then click **Update**.

   **NOTE:** The **Configuration details** section also contains several configuration settings for the Scheduler service. We recommend leaving the default settings unless you are instructed to change them by Kaufman Hall Software Support. For more information, see Axiom Software Help: **Scheduler > Scheduler administration > Managing Scheduler servers** (or search for AX2542).

These Scheduler servers are now available to process Scheduler jobs.

## Configuring Scheduler system jobs

Scheduler provides several system jobs that should be configured as part of your system setup activities. These jobs are created automatically by the Scheduler service when it is started. These jobs control email notifications for Scheduler and other system processes, and cleanup processes for the database.

**NOTE:** The SMTP Message Delivery job must be configured in order to enable email notifications for Axiom Software. If this job is not configured, then email notifications will be created and saved in the database, but they will not be sent.

**To configure the Scheduler system jobs:**

1. In the **Scheduler** dialog, on the **Service** tab, click **Scheduled Jobs**. You should see the following scheduled jobs where the name starts with **System**:

   - **System.ProcessNotification**
   - **System.SystemDataPurge**
   - **System.IndexMaintenance**

2. Double-click a job to open it for editing. Once you have modified the job as needed, click **Save**.

- In the **Tasks** section, select the task name to access the task settings, and then edit the **Task Details** as necessary. See the following section for more details on the specific task settings.
- In the **Notifications** section, configure the email notifications for the job as desired. By default, the jobs are configured to send notifications on error, however, you must specify a valid email address to receive these notifications (such as the email address of a system administrator).

3. On the **Service** tab, click **Event Handlers** and then locate the **System.SMTPMessageDelivery** event in the list. Double-click the event to open the associated job (with the same name), then perform step 2 for that job as well.

The changes will apply the next time the job is executed.

## System job overview

The following list provides a brief description of the purpose of each job and its task settings.

### SMTPMessageDelivery

| | |
|---|---|
| Description | This job enables email notifications for Scheduler jobs and other system processes, such as process management notifications. Email notifications are stored in the database until the job picks them up and sends them. |
| Configuration | This task is not operational until you specify the name of a valid SMTP server in your environment. Once you have completed the SMTP server settings, make sure to disable **Test Mode** so that email notifications will be sent. |
| Schedule | This job is not a scheduled job. Instead, it uses an event handler so that the job is triggered for execution whenever there are email messages ready to be sent. |

### ProcessNotification

| | |
|---|---|
| Description | This job enables reminder notifications for process management. These are notifications to remind users of upcoming due dates and overdue tasks. |
| Configuration | This task does not have any editable settings. |
| Schedule | By default, this job is set to execute once per hour. You should not change the frequency of this job. |

### SystemDataPurge

| | |
|---|---|
| Description | This job purges old data from the system, such as old Scheduler job results, old email notifications, old temp table data, and old audit data. This task should be run regularly to help keep old and unnecessary data from impacting system performance. |
| Configuration | This task is configured to delete items that are older than a specified number of days (by default, 15 days). You can change the default settings for this task if desired. |
| Schedule | By default, this job is set to run every ten minutes from midnight to 4:00 AM. The task is operational as soon as it is created by the Scheduler service, using the default settings. |

### IndexMaintenance

| | |
|---|---|
| Description | This job maintains the indexes on your Axiom databases (system database and audit database). It reports the current index fragmentation and then reorganizes or rebuilds the indexes as needed, depending on the current level of fragmentation. It also updates table statistics. |
| Configuration | Any changes made to the SQL statements in this system job should only be made with the guidance of Kaufman Hall Software Support and/or your SQL database administrator. |
| Schedule | By default, this task is set to run once per day, at 5:15 AM. The task is operational as soon as it is created by the Scheduler service, using the default settings. |

## Email notifications for system jobs

By default, most system jobs are configured to send notifications on error, however, you must edit the job to specify a valid email address for the notifications (such as the email address of a system administrator). In the **Notifications** section for the job, edit the email notification settings as desired. The default setting of `{CurrentUser.EmailAddress}` cannot be used because the job is run by the system and therefore does not resolve to a user email address.

**NOTE:** It is recommended to leave the SMTPMessageDelivery job at the default notification behavior of None. If this job experiences an issue attempting to send email, it likely will be unable to send you an email notification about this error.

# Setting up security

This section provides an overview to security setup considerations for Axiom Software.

## Creating users in Axiom Software

All users must be set up in Axiom Software security in order to access the system. User setup is performed within the Axiom Software Client.

**To access the Security Management dialog:**

1. Launch the Axiom Excel Client or the Windows Client. You must log in as a user that has system administrator rights.

   If you started with a new blank database, you can log into the system using the built-in admin user (user name: admin, password: admin). You should change the password of this user after logging in. Once real users have been set up for your implementation, you can delete this user.

2. On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

   **NOTE:** In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

You must have installed at least one client instance in order to perform these setup steps. For more information on how Axiom Software security works, and details on specific security settings, see Axiom Software Help: **Security**.

## Configuring security options for the installation

### Enabling or changing authentication methods

During the application server installation, you had the option to enable various authentication options for use with Axiom Software. If you did not enable these options during the installation but you would like to do so later, or if you need to change any of the configuration settings for these options, you can do so in the Software Manager using **Installation Manager > Configure Authentication Methods**. You can also modify the system configuration settings directly, by using the Software Manager or a Save Type 4 report. For more information on the available authentication settings, see Authentication methods.

### Configuring a user lockout threshold

If desired, you can configure a user lockout threshold for Axiom Software, so that user accounts are locked out of the system if they exceed a specified number of failed login attempts. By default, no lockout threshold is defined (unlimited attempts). You can define a user lockout threshold using the **MaxLoginAttempts** system configuration setting. For information on editing system configuration settings, see Editing system configuration settings.

### Resetting a user password

You can reset a user's password from within the Software Manager. You might use this functionality if the user has been locked out or has forgotten their password, and you cannot access the Axiom Software Client to change the password using the Security Management dialog.

To change a user's password, select **Installation Manager > Reset Axiom User Password**. When specifying the user name, you must preface it with the domain name if applicable (for example: domain\username). Changing the user's password using this method also clears the user lockout, if applicable.

# Updating your license file

When you first installed Axiom Software, you imported a license file into your system database. You can update this license file using the Software Manager or using the administration features of the Axiom Web Client. For example, you may need to update your license file if you purchase additional licensed users, or if your current license file is about to expire.

As long as your license has not yet expired, you can update it from the Axiom Web Client:

1. In a web browser, open the Axiom Web Client and go to the license update page. For example:

   `http://servername/Axiom/admin/license`

   Where *servername* is the name of your Axiom Application Server, and Axiom is the default virtual directory name.

   You can also access this feature from the System Administration area of the Web Client.

   **TIP:** You can also access this web page from within the Axiom Excel Client or Axiom Windows Client. From the **Axiom** or **Admin** tab, click **Help > About Axiom Software**, and then click the **Update License** link at the top of the dialog.

2. On the Update Axiom Licenses page, click **Choose license file to import**.
3. Navigate to the license file, and then click **Open**.

The new license has been imported into your system. You can see the license details listed on the page.

You can also update your license file from the Software Manager, using **Installation Manager > License Manager**. You must use this method if your license file has expired, because in that case you will not be able to log into the Web Client.

# Configuring the service encryption key

Each installation has a service encryption key which was defined as part of the Axiom Application Server installation. If desired, you can change this encryption key later using the **Configure Service Encryption** screen.

1. In the Software Manager, click **Installation Manager > Configure Service Encryption**.
2. If necessary, from the **Application Server** list, select the application server installation.

   In most cases, only one instance of the Axiom Software Application Server is present on the machine, and you do not need to change anything. This option is for situations where multiple application servers may be installed on the same machine.
3. In the **Axiom Server Encryption Key** field, do one of the following:
   - Click **Generate** to generate a new random encryption key. This is the recommended approach.
   - Type your own key. Axiom Software does not enforce any rules on the key string. If you choose to use your own key, it is your responsibility to ensure that the key is of an adequate strength for your organization's security requirements.
4. Click **Update**.

The encryption key is changed for the installation.

**TIP:** You can use this screen to find out the encryption key if you need it for an installation but you did not retain a record of it. For example, if you installed the Axiom Application Server but forgot to record the key for use in the Axiom Scheduler Service installation. You can come to this screen and place your cursor in the field to read the encryption key.

# Reloading system documents

Axiom Software has a number of system documents and templates that are added automatically to new blank systems the first time the new database is upgraded. This includes control sheets for various features, the new report template, the default home file, standard task panes and ribbon tabs, and other documents.

Subsequent document updates are handled as follows:

- The following documents are always updated when a database is upgraded: control sheets, sample task panes and ribbon tabs, and support utilities.
- All other documents can be manually updated as desired using the **Reload System Documents** screen.

**To reload system documents:**

1. In the Software Manager, click **Installation Manager > Reload System Documents**.
2. If necessary, from the **Application Server** list, select the application server installation.

   In most cases, only one instance of the Axiom Software Application Server is present on the machine, and you do not need to change anything. This option is for situations where multiple application servers may be installed on the same machine.
3. Select the documents that you want to update. When the update is processed, the selected documents will be added to the target system, replacing any existing version of the document.
4. Click **Update**.

The selected documents are updated.

# Editing the connection string to the Axiom Software database

The connection string to the Axiom Software database must be defined during the Axiom Software Application Server installation. If necessary, you can modify the connection string later using the **Configure Connections** screen.

For the purposes of editing the connection string, the Software Manager must be run on the Application Server. For more information, see Axiom Software Manager.

**NOTE:** The Configure Connections screen can only be used to modify application servers that are at the same version as the Software Manager.

**To edit the connection string:**

1. In the Software Manager, click **Installation Manager > Configure Connections**.
2. If necessary, from the **Application Server** list, select the application server installation.

   In most cases, only one instance of the Axiom Software Application Server is present on the machine, and you do not need to change anything. This option is for situations where multiple application servers may be installed on the same machine.
3. Edit the **Database Server Details** as appropriate:

| Item | Description |
| --- | --- |
| Server Name | The server name of the database server that hosts the Axiom Software database. |

| Item | Description |
|---|---|
| Failover Partner | Optional. The server name of the database server to be used in failover situations. This only applies to cloud service systems; otherwise it should be left blank. |
| Database Name | The name of the database for Axiom Software. |
| Login | The login name for the Axiom Software database. |
| Password | The password for the Axiom Software database. |
| Update Database user and password | Select this option if you want to change the login name and password to what you have entered in this screen. Otherwise, you must enter the login name and password as they were originally defined. |

4. Click **Update**.

# Backing up and restoring the Axiom Software database

The Axiom Software database should be backed up regularly using SQL Server backup functionality. Your IT department and/or database administrator should manage this backup as part of their regular backup processes. In addition to regular backups, you should make sure to take a backup before performing any system activity that may result in major database or system changes, such as before upgrading the installation.

The Axiom Software Manager can also be used to take a backup of the database, but the Software Manager's backup feature is only for "one-off" backups, not for regular ongoing backups.

Both related Axiom Software databases—the application database and its corresponding audit database (if standalone)—must be backed up as a set so that they remain in sync.

Managed files are stored in the Axiom Software application database. As long as all Axiom files are managed, then there is no need for any additional network folder or file backups in order to back up Axiom Software systems. If users are saving report files as non-managed files to their local drives or to a network share, these files should be backed up according to your normal file system backup processes.

If you need to restore the database, make sure to restore both related databases from the same backup “set.” The only time that you should restore only an application database is when directed to do so by Kaufman Hall Software Support, to troubleshoot or resolve a specific issue, or when the audit database is embedded in the application database. If the audit database is a standalone database, both database components should be restored together.

You can use standard SQL Server functionality to restore an existing database, or you can use the Axiom Software Manager. The only time that you *must* use the Software Manager to restore a database is when you are creating a new installation or a new system.

After restoring a database, you must always perform a database upgrade (even if you are restoring a database that was using the latest database version). If you restored the database using the Software Manager, the System.SMTPMessageDelivery Scheduler job is automatically set to test mode, so that the newly-restored system does not instantly start sending email notifications. To restore email functionality, you must edit the job in Scheduler and turn off test mode.

## Backing up a database using the Software Manager

1. Open the Software Manager on the Axiom Application Server.
2. Click **Database Manager > Backup Databases**. (You can also click **Backup** from the home screen.)
3. In the **Database Server Details** section, complete the following settings:

| Item | Description |
|---|---|
| Database Server | The server name of the database server. If you are not using the default instance, append the instance name with a backward slash (Server\Instance). |
| Database Name | The name of the database. |

4. In the **Options** section, complete the following settings:

| Item | Description |
|---|---|
| Backup Folder | Specify the location for the backup. Paths are relative to the database server.<br><br>**NOTE:** The Browse button does not apply unless the application server is also the database server. |
| Include Audit Database | Select this check box if you want to back up the corresponding audit databases for the selected system databases. |

5. Click **Create Backup**.

The backup files are saved to the location specified in the backup settings. The backup process creates a SQL backup (.BAK) that is the same as a manual backup using SQL Management Studio.

## Restoring a database using the Software Manager

For details on using the Axiom Software Manager to restore a database from backup, see Creating or restoring the database.

# Enabling in-memory tables

Axiom Software supports in-memory tables. In-memory tables are stored in the main memory of the database server versus on disk (a "backup" version of the table is stored on disk for recovery purposes). Reading data from memory and writing data to memory can result in significant performance gains over disk-based table access.

Currently, this feature is limited to document reference tables (driver tables and other tables created using Save Type 3). Storing document reference tables in-memory may improve performance for systems with large document reference tables. Systems with smaller document reference tables are less likely to realize any noticeable performance benefit, as these smaller tables are cached on the client by default regardless.

The in-memory table feature has the following requirements and limitations:

- Use of in-memory tables requires SQL Server Enterprise 2014.
- In-memory tables are not audited. If the in-memory feature is enabled, auditing is disabled for document reference tables.

**To enable in-memory tables:**

1. In the Software Manager, click **Database Manager > Advanced Options**.
2. In the **Database Server Details**, verify that the **Server Name** and the **Database Name** are correct for the Axiom Software database that you want to configure. If not, enter the appropriate information.

   **NOTE:** You may be prompted to enter credentials for the specified database server, if those credentials have not already been stored in the Software Manager.

3. Select the check box for **Enable In-Memory Tables**.
4. Click **Apply**.

Enabling this option causes the following changes to be made to your database server:

- The Axiom Software database is enabled for Memory Optimized Data.
- A portion of the database server's memory is dedicated for use of in-memory tables. Currently this percentage is set at 3%.

After enabling the feature in the Software Manager, you must recycle the Axiom application pool so that the Axiom Software system recognizes the change. This is done on the Axiom Application Server, using the IIS Manager.

Document reference tables will be created in-memory the next time they are saved after enabling the feature.

# Viewing system logs

Axiom Software maintains several logs that can be used to troubleshoot technical issues.

| Component | Log file (default location) |
|---|---|
| Application Server | `C:\Inetpub\wwwroot\Axiom\logs`<br><br>General application server activity is logged in AxiomServer.log, and Axiom form activity is logged in AxiomWebClient.log.<br><br>These logs can also be accessed using the Axiom Software Web Client, in the **Application Server Administration > Logging** section. |
| Scheduler Service | `C:\Program Files(x86)\Axiom EPM\Axiom EPM Scheduler Service\logs`<br><br>AND<br><br>`C:\Inetpub\wwwroot\Axiom\scheduler\logs` (for the system Scheduler service) |
| Client Integration Service | `C:\Program Files (x86)\Axiom EPM\Axiom EPM Cloud Integration Service\logs` |
| Update Service | `C:\Program Files (x86)\Axiom EPM\Axiom EPM Update Service\logs` |
| Client | `C:\<WindowsUserDirectory>\<UserName>\AppData\Local\AxiomLogs`<br><br>OR<br><br>`C:\<WindowsUserDirectory>\<UserName>\My Documents\AxiomLogs`<br><br>The client log can also be accessed from within the Axiom Software Client, from the **Help** menu. |

### Scheduler warnings

The application server checks the Scheduler schedule periodically, and logs any warning conditions to the event log for the application server machine. This logging is intended to warn about events that may indicate that one or more Scheduler servers are not running, or that a job has gotten "stuck." You can monitor for these events using any event log monitoring tool. The event source is Axiom Software.

## Changing the logging level

You can temporarily change the logging level for the Axiom Application Server or the Axiom Software Client. You may want to change the logging level to help troubleshoot a specific issue. For assistance in determining the appropriate level of logging to troubleshoot your issue, please contact Kaufman Hall Software Support.

## Changing the logging level for the Axiom Application Server

You can change the logging level for the application server using the Axiom Web Client.

1. In a web browser, open the Axiom Web Client and go to the logging page. For example:

   `http://<servername>/Axiom/admin/logging`

   Where *<servername>* is the name of the server hosting Axiom Software, and Axiom is the default virtual directory name.

   You can also access this feature from the System Administration area of the Web Client.

2. On the Logging page, select the check box to **Enable verbose logging for application server**. You can also enable verbose logging for the web client from this location.

## Changing the logging level for the Axiom Software Client

You can change the logging level for the Axiom Excel Client or the Axiom Windows Client using the Log Analyzer tool.

1. On the **Axiom** tab, in the **Help** group, click the arrow underneath the Help icon, and then select **Log File Analyzer**.

   **NOTE:** If you are using an Axiom packaged product, you can access this feature from the **Admin** tab.

2. In the **Log Analyzer** window, click **Log Level** and then select the desired logging level.

Alternatively, the function AxLoggingLevel can also be used to temporarily change the logging level of the Axiom Software Client. To change the logging level, start the client and then type the following function into any file within the client:

`=AxLoggingLevel("LogLevel")`

The client log will return to the default setting the next time that you start the client.

7

# Upgrading Axiom Software

This section details upgrade considerations and the upgrade process for Axiom Software.

## Upgrade considerations

Please review the considerations in this section before upgrading to version 2019.1. If you have any questions or if you need assistance with upgrading, please contact Kaufman Hall Software Support.

**IMPORTANT:** This document details the upgrade considerations when moving from the most recent Axiom Software release of 2018.4 to the new release of 2019.1. If you are upgrading from an earlier version, please also see the release notes for the interim versions for any additional upgrade considerations.

## Change to total row behavior in Data Grid components

Description

In previous releases, Data Grid components in Axiom forms used a tag named `[TotalRow]` to configure the contents of the total row (if enabled for the grid). In order to include a table column in the total row, it was required to enter an aggregation type into the `[TotalRow]` column, such as Sum or Count. Calculated columns could be included, but could only use an assigned aggregation—it was not possible to apply the defined calculation to the total row.

Going forward, Data Grid components have been improved so that all relevant table columns are automatically included in the total row, and these columns automatically use the appropriate aggregation type. Calculated columns are also automatically included in the total row, and now use their defined calculation. To enable this improved behavior, the DataGridColumns data source must contain a new tag named `[Total]` instead of the old `[TotalRow]` tag. This new tag is automatically included in any newly created data sources. You can add the tag manually to any existing data sources.

After upgrading, any existing Data Grid components that use the legacy `[TotalRow]` tag will behave as follows for limited backward-compatibility: any column with a non-blank value in the `[TotalRow]` column is included in the total row, and uses the new total behavior where the aggregation or calculation is automatically applied.

Testing and Review

If your system has any Data Grid components with an enabled total row, you can convert the grid to use the new behavior as follows:

- Find the existing `[TotalRow]` tag in the DataGridColumns data source, and rename it to `[Total]`.
- Clear all entries in this column except for the `Header` keyword. The Header keyword determines where the total row label is displayed, and works the same way as before.
- It is not necessary to set any columns to `True`, because all relevant columns will be included by default.

Preview the form and review the contents of the total row. If you identify any columns that you do not want to include in the total row, you can enter `False` in the `[Total]` column.

More Info

For more information, see the *Data Grid enhancements* section of the separate *What's New* document.

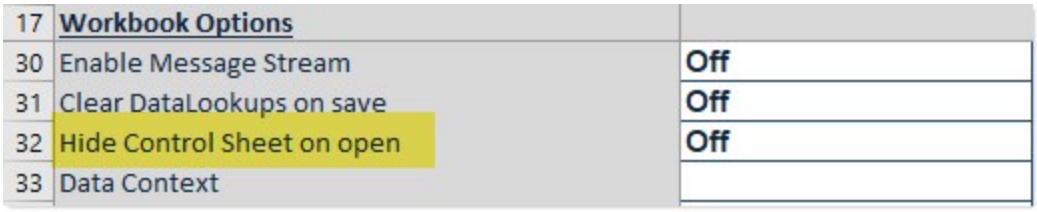
### Change to total and subtotal behavior in Fixed Report components

| | |
|---|---|
| Description | In previous releases, Fixed Report components in Axiom forms used a tag named `[SubTotal]` to configure the contents of subtotal and total rows in the report. All relevant columns and calculations were included these rows by default, however, calculated columns did not use their defined calculation. Instead they were summed or subtracted, as defined by the expression used by the subtotal or total row.<br><br>Going forward, Fixed Report components have been improved so that calculated columns automatically use their defined calculation on subtotal and total rows. To indicate the changed behavior, and to align the total tag between the Data Grid component and the Fixed Report component, newly created FixedReportColumns data sources now use a tag named `[Total]` instead of the old `[SubTotal]` tag. You can add the tag manually to any existing data sources.<br><br>After upgrading, any existing Fixed Report components with a `[SubTotal]` tag will continue to work as before to determine which columns are included in subtotal and total rows. If a calculated column is included, it will now use the new total behavior and apply its defined calculation to the total row. |
| Testing and Review | If your system has any Fixed Report components, you can convert the report to use the new tag by locating the existing `[SubTotal]` tag in the FixedReportColumns data source, and then renaming it to `[Total]`. It is not necessary to set any columns to `True`, because all relevant columns will be included by default. However, you may want to clear any calculated columns that had previously been set to `False`, so that these columns are now included in subtotal and total rows. |
| More Info | For more information, see the *Fixed Report enhancements* section of the separate *What's New* document. |

## Control Sheets no longer hidden by default for Sheet Assistant users

Description

The file-level option **Hide Control Sheet on open** determines whether the Control Sheet is hidden by default for *all* users when the file is opened. Going forward, the default setting for this option is **Off**. This applies to all newly created spreadsheet Axiom files, and any existing files where the setting is blank or not present.



| 17 | Workbook Options | |
|---|---|---|
| 30 | Enable Message Stream | Off |
| 31 | Clear DataLookups on save | Off |
| 32 | Hide Control Sheet on open | Off |
| 33 | Data Context | |

When this option is disabled, the visibility of the Control Sheet depends on whether the current user has the **Allow Sheet Assistant** permission for the file (as specified on the **Files** tab of security). This default behavior works as follows:

- If you are an administrator or you have the **Allow Sheet Assistant** permission, *and* you open the document as read/write, then the Control Sheet is visible. This behavior is intended to provide report writers with easy access to configuration settings on the Control Sheet.
- Otherwise, the Control Sheet is hidden. In this case, users with **Allow Sheet Assistant** permission can unhide the Control Sheet by double-clicking a field name on the Sheet Assistant. And as always, any user with **Allow Unprotect** permission can manually unhide the sheet.

This default behavior means that in most cases, there is no longer any need to enable **Hide Control Sheet on open**. However, if you do have a situation where you need the Control Sheet to always hide, for all users, then you can set this option to **On**.

**NOTE:** This behavior does not apply to plan files. The Control Sheet is always hidden in plan files for all users. It is rarely necessary to access the Control Sheet in plan files, because any configuration changes for plan files need to be made in the template.

Testing and Review

For existing files, this behavior change only applies to files where the **Hide Control Sheet on open** option is blank or not present (because it will now default to Off instead of On). Additionally, only administrators and users with access to the Sheet Assistant will notice any change in behavior. In most cases it is beneficial and desired to show the Control Sheet by default to these users. End users who do not have access to the Sheet Assistant will continue to not see the Control Sheet.

If you have an existing file where **Hide Control Sheet on open** is *not* enabled, but the Control Sheet is still hiding for all users on open, this may mean that the file was saved using the previous default behavior (or that the Control Sheet was manually hidden using Excel functionality). In this case, you can open the file, unhide the Control Sheet, and then save the file. The next time the file is opened, it should now use the default behavior where Sheet Assistant access controls the visibility of the Control Sheet.

### Legacy Axiom form features hidden in user interface

Description

A couple of legacy form features are now hidden in the user interface, so that these features can only be configured manually on the Form Control Sheet. This change was made to streamline the user interface to remove features that are inapplicable to most users, and to prevent confusion over when these features should be used.

- The option **Grid Formatting** for Formatted Grid components is no longer visible in the Form Assistant and Form Designer. Newly created grids should always use the default thematic formatting. It is not necessary to edit this setting except in very rare cases when supporting legacy forms that use the deprecated spreadsheet-formatting option.
- The option **Use Web Client Container** is no longer visible in the Form Properties dialog. Newly created forms should always use the container, since many newer features require the presence of the container to work correctly. It is not necessary to change this setting except in very rare cases when supporting legacy forms.

Testing and Review

This is a display change only—supported functionality for these legacy features remains as is. Both settings still exist, and can still be edited manually on the Form Control Sheet as necessary.

### Restriction enforced on post-query sum by for Axiom queries

| | |
|---|---|
| Description | Axiom queries have an advanced setting that allows you to set a sum by level that applies after the initial database query is made. The purpose of this setting is to support grouping by segments, when using another advanced feature to organize Axiom query data into ranked segments. Although this was the only intended use case, the setting was not restricted and allowed entries other than the segment column.<br><br>Going forward, the **Post Query Sum By** setting for Axiom queries now only honors segment column names. If a non-segment column name is used in this setting, it is ignored and the query does not error. Segment column names are defined using special syntax in the Axiom query field definition. |
| Testing and Review | This change should not affect any clients, since the setting still works as expected for its intended use case, and we are unaware of any other needed use case. Additionally, because it is an advanced setting that is only present on the Control Sheet, it is unlikely to have been used by accident. However, if you identify a report that no longer works as expected because a non-segment column is used in the Post Query Sum By, please contact Kaufman Hall Software Support for assistance. |
| More Info | For more information on using segments in Axiom queries, see the following topic in Axiom Software Help: *Organizing Axiom query data into ranked segments* (AX1117). |

### Potential impacts on end users

This section summarizes the potential impacts to your end users when upgrading to version 2019.1. This list is provided to help you understand changes that you may need to communicate to end users. You may also need to update your internal documentation.

- The application logo, and other branding images and colors, have been updated. Users will see these changes in areas such as login screens, desktop shortcuts, and the Web Client toolbar. For more information, see the *Branding changes* section in the separate *What's New* document.
- The Report Builder page in the Web Client has been renamed to Report Designer, and the design of the page has been streamlined. Users can still open and create web reports, but the look and feel of the page is different. This affects any end users who access web reports using this page.

**NOTE:** "End users" refers to users who work with plan files and reports that have been built for them. These users do not perform any file setup activities or administration activities. It is assumed that Master System Users will fully review the release documents to understand changes that may affect them and other power users.

# Before you upgrade

Certain steps should always be performed before proceeding with any Axiom Software upgrade.

- **Review the release notes.** Make sure you understand the changes in the current release and any documented upgrade considerations. If you are upgrading from an older version, make sure to review the release notes for each interim version as well.

  **IMPORTANT:** Although Kaufman Hall strives to maintain backward-compatibility with each release, any upgrade has the potential to interrupt system functionality. The *Upgrade Considerations* section of the release notes details known impacts to existing functionality. However, other impacts may be unforeseen at the time of release, or may be particular to your specific system design and configuration. We strongly recommend performing the upgrade first on a test server and then testing system functionality to make sure all critical features are still working as expected.

- **Perform the database pre-upgrade check.** The Axiom Software Manager provides a tool to check your database for potential backwards-compatibility issues before upgrade. If issues are found, they must be addressed before performing the upgrade.

  **NOTE:** This check is performed automatically as part of the Software Updates tool. You do not need to separately perform the check if you are using this automated upgrade process. However, you can perform it manually if you want to proactively check for upgrade issues before actually performing the upgrade.

- **Back up your database.** It is always a good idea to make a backup before performing any major system changes, such as an upgrade. For more information, see Backing up and restoring the Axiom Software database.

- **Make sure users are logged out of the system.** All users should be logged out of the system before performing the upgrade. You can communicate the planned upgrade time to users, and you can also use the System Access feature in the Windows Client or Excel Client to lock out non-admin users.

## Performing the database pre-upgrade check

The Pre-Upgrade Check scans your database for known upgrade issues. Keep in mind that this check is not all-encompassing and does not guarantee that no backward-compatibility issues will exist in your system. It tests for known critical issues that can be detected in the database. Other issues may not be detectable with this kind of test or may not be known at this time.

1. In the version 2019.1 Software Manager, click the **Upgrade** icon on the home screen.
2. Confirm the **Database Server Details** at the top of the upgrade screen.
3. Click **Pre-Upgrade Check**.

If the check finishes successfully, then you can continue with the upgrade process. If the check detects any issues, these issues should be addressed before proceeding with the upgrade. Please contact Kaufman Hall Software Support as needed for assistance in resolving these issues.

# Upgrading an existing Axiom Software installation

This section explains the process of upgrading an existing Axiom Software installation to version 2019.1.

## Upgrade notes

- In order to upgrade to version 2019.1, your Axiom Software database must be at version 2017.1 or higher. If your database is 2016.4 or earlier, then you must first use a 2017.x Software Manager to upgrade your database to that version. After that, you can use the 2019.1 Software Manager to complete the database and software upgrade. Please contact Kaufman Hall Software Support for assistance if you need to obtain a copy of a 2017.x Software Manager, or if you are upgrading a very old version (8.2 or earlier).
- If you are upgrading from version 2017.1 or higher, then you can use the Software Updates tool to perform an automated upgrade.

## Performing an automated upgrade

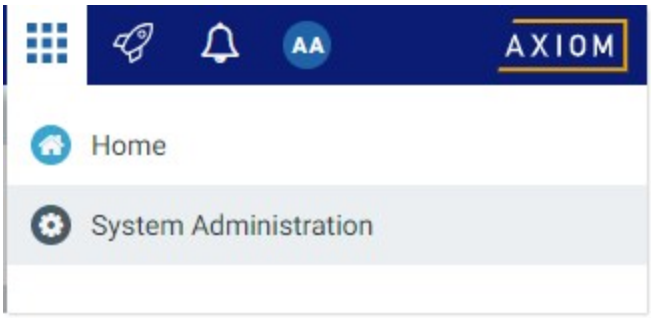
If you are upgrading from version 2017.1 or higher, then you can use the Software Updates tool to perform an automated upgrade of the following server components:

- Axiom Software Database
- Axiom Application Server
- Axiom Scheduler Service

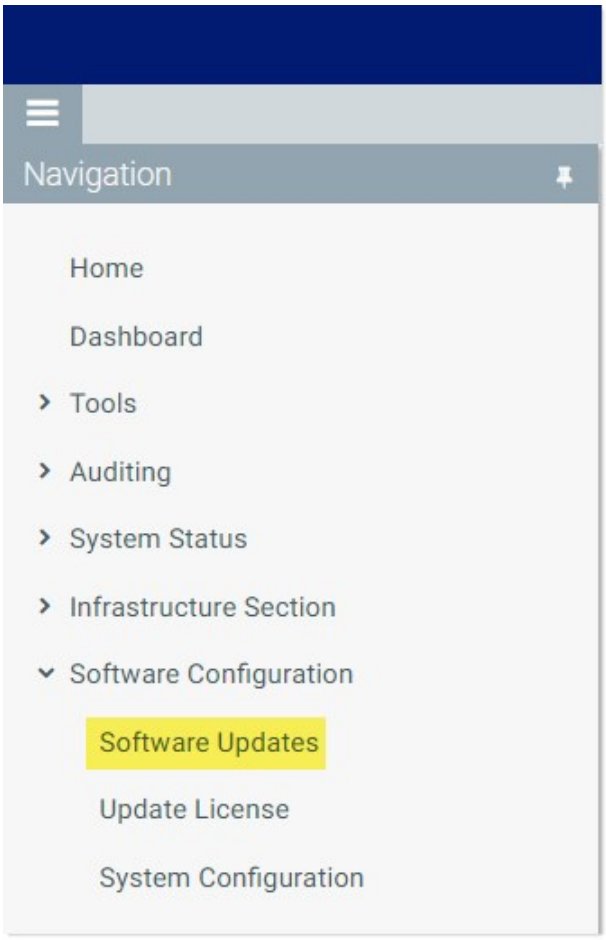
**NOTE:** Access to the Software Updates tool is limited to Axiom Software administrators and to users with the **Administer Updates** security permission. Users do not need to have admin rights to the servers they are upgrading in order to apply updates using the Update Service.

**To perform an upgrade using the Software Updates tool:**

1. In the Web Client, click the menu icon  in the Global Navigation Bar. From the Area menu, select **System Administration**.




2. From the Navigation panel, select **Software Configuration > Software Updates**.




The **Software Updates** page opens. This page lists the details of updates you have applied in the past, and enables installing new updates. If you have not yet installed any updates using the Update Service, then this page will not have any history.

Alternatively, you can go directly to the Software Updates page as follows:

| | |
|---|---|
| **Example On-Premise URL** | `http://ServerName/Axiom/Updates`<br>Where *ServerName* is the name of the Axiom Application Server, and Axiom is the default name of the virtual directory. |
| **Example Cloud System URL** | `https://ClientName.axiom.cloud/Updates`<br>Where *ClientName* is the name of your Axiom Cloud Service system. |

**TIP:** You can also access this page from within the Desktop Client. From the **Axiom** tab, in the **Administration** group, click **Manage > Software Updates**. However, once you launch the page from this location, you should close the desktop client before performing any software upgrades.

3. On the Software Updates page, click **Check for platform updates**.

   **NOTE:** This discussion only covers installing Axiom Software platform updates. If you have licensed a packaged product that uses the Axiom Software platform and you want to update it, please see the instructions provided with that product. The **Check for product updates** option only displays if you have licensed such a product.

   The **Platform Update Manager** page opens. From here you can see your current Axiom Software platform version, download new updates, and apply staged updates. This page automatically checks for any new platform updates. If an update is found, it is listed under **Stage a platform update with one of the following versions from the portal**.

4. From here, you can do the following:
   - To view the changes in the update, click **[release notes]**. This opens the PDF release notes document. If the update is a patch release, the items fixed in this patch are listed in an appendix at the end of the document.
   - To download the update and make it available for installation, click **Download and Stage**.
   - If you have a copy of an update stored locally—for example, if you manually downloaded an installation package from the Kaufman Hall Support site, or if Kaufman Hall Software Support sent you a package—then you can click **Browse for platform installer** to browse to that ZIP file and stage it for installation.
5. Once the update is downloaded, it will display as the **Staged Update** at the top of the page. To install the update, go to the **Apply the staged update** section at the bottom of the page, and then click **Install version *number***.
6. Axiom Software prompts you to confirm that you want to upgrade the platform. Click **OK**.

You are returned to the Software Updates page. This page updates periodically to show the latest status of the upgrade, however, in some cases you may need to manually refresh the page. Keep in mind that if you refresh the page while the application server is still being upgraded, you may see an error because the application server is currently down. If this occurs, wait a few minutes and then refresh the page again.

The database upgrade is performed first. This process includes performing the database Pre-Upgrade Check. If any issues are found by this check, then the upgrade will fail and the issues are noted in the log file. The update status details include a link to open this log file. Once these issues have been addressed, you can perform the upgrade again.

Once the upgrade is finished, be sure to check the status of all items to make sure everything completed successfully. If some portion of the upgrade did not complete successfully, then you may need to manually upgrade some or all components. Please contact Kaufman Hall Software Support with any questions.

### Components that cannot be upgraded using the Software Updates tool

The Software Updates tool does not upgrade the Axiom Update Service. If necessary, this components can be upgraded manually.

The Axiom Update Service is the server component that enables use of the Software Updates tool. Running the Update Service does not upgrade the Update Service itself. In most cases it is not necessary to upgrade this component when performing other server upgrades. However, if you want to upgrade the component, you can do this manually on each server where it is installed. See Installing or upgrading the Update Service.

## Performing a manual upgrade

Systems running 2016.4 or older must perform a manual upgrade. Systems running 2017.1 or higher can optionally perform a manual upgrade instead of using the Update Service.

### Upgrading the database to 2017.x

In order to upgrade to version 2019.1, your Axiom Software database must first be upgraded to any 2017.x version. You must obtain a copy of any 2017.x Software Manager and upgrade your database before proceeding with the 2019.1. If you need assistance obtaining this older version, please contact Kaufman Hall Software Support.

If your system is already running 2017.1 or higher, then you can skip this step and upgrade directly to 2019.1.

1. Extract the contents of the version 2017.x installation package to the application server. For example, if you have an existing `C:\AxiomFiles` folder on the server, place the installation files a sub-folder named `\Axiom_v2017`. Then go to `C:\AxiomFiles\Axiom_2017\` and run

`AxiomSoftwareManager.exe`.

2. In the 2017.x Software Manager, click the **Upgrade** icon on the home screen.
3. Verify and complete the following properties on this screen:
    - Confirm that the **Database Type** and **Server Name** are correctly configured and pointing to the server where your Axiom Software application database is stored.
    - From the **Database Name** list, select the name of the application database to upgrade. If the server only has one Axiom Software application database, then that database will be selected by default.
4. Click **Upgrade**.

Once you have upgraded the database to 2017.x, you can move on to the 2018.1 Software Manager. It is not necessary to upgrade server or client components to 2017.x.

## Upgrading the database to 2019.1

Before upgrading the Axiom Software server software, you must upgrade the database.

1. Extract the contents of the version 2019.1 installation package to the application server. For example, if you have an existing `C:\AxiomFiles` folder on the server, place the installation files a sub-folder named `\Axiom_v2019_1`. Then go to `C:\AxiomFiles\Axiom_2019_1` and run `AxiomSoftwareManager.exe`.
2. In the Software Manager, click the **Upgrade** icon on the home screen.
3. Verify and complete the following properties on this screen:
    - Confirm that the **Database Type** and **Server Name** are correctly configured and pointing to the server where your Axiom Software application database is stored.
    - From the **Database Name** list, select the name of the application database to upgrade. If the server only has one Axiom Software application database, then that database will be selected by default.
4. Click **Upgrade**.

When the upgrade is complete, a confirmation message displays.

## Upgrading server components to 2019.1

Once the database has been upgraded to 2017.x, you can upgrade the Axiom Application Server and Scheduler Service to version 2019.1.

1. Upgrade the Application Server:
    - On the home page of the Software Manager, click **Manage Software**.

- In the **Currently Installed Packages** section, locate the entry for the Application Server, and then click **Upgrade**.
- On the Axiom Application Server Installer screen, click **Upgrade**.

The upgrade process will remember your previous installation settings.

2. Upgrade the Scheduler Service:
   - If you have not already extracted the contents of the version 2019.1 installation package to the Scheduler server, do so. For example, if you have an existing `C:\AxiomFiles` folder on the server, place the installation files a sub-folder named `\Axiom_v2019_1`. Then go to `C:\AxiomFiles\Axiom_2019_1` and run `AxiomSoftwareManager.exe`.
   - On the home page of the Software Manager, click **Manage Software**.
   - In the **Currently Installed Packages** section, locate the entry for the Scheduler Service, and then click **Upgrade**.
   - On the Axiom Scheduler Service Installer screen, click **Upgrade**.

   The upgrade process will remember your previous installation settings.

   Perform this upgrade on each Axiom Scheduler Service installed in your environment.

Before proceeding with client installations and post-upgrade setup, verify that you can access the Axiom Web Client. If you are not able to load this web page, contact Kaufman Hall Software Support for assistance.

## Installing or upgrading the Update Service

If you have not already installed the Update Service, you can do this as part of manually upgrading your servers to 2019.1. Once installed, you can use this service to find, download, and install software updates. The Update Service must be installed on each server where either of the following components is installed: Axiom Application Server or Axiom Scheduler Service. For information on installing the Update Service, see Installing Axiom Update Service.

This service is not required for operation of Axiom Software, however, it is required if you want to perform subsequent upgrades using the Update Service. If you do not install this component, then you will not be able to use the service to check for new updates and to install those updates. You can still perform upgrades manually using the Software Manager if desired.

If the Update Service is already installed on your servers, it is not required to upgrade it to the latest version, although you can if desired. To upgrade the Update Service:

1. Extract the contents of the version 2019.1 installation package to each server where the Updated Service is installed. For example, if you have an existing `C:\AxiomFiles` folder on the server, place the installation files a sub-folder named `\Axiom_v2019_1`. Then go to `C:\AxiomFiles\Axiom_2019_1` and run `AxiomSoftwareManager.exe`.
2. On the home page of the Software Manager, click **Manage Software**.

3. In the **Currently Installed Packages** section, locate the entry for the Update Service, and then click **Upgrade**.
4. On the Axiom Update Service Installer screen, click **Upgrade**.

## Upgrading individual client workstations

Individual client workstations will be upgraded automatically the next time the Axiom Software client is launched on that workstation. No special setup is required.

For more information on deployment using the ClickOnce installer, see Installing the Axiom Software Client on client workstations.

## Upgrading Axiom add-ins for PowerPoint and Word

The Axiom add-ins for Word and PowerPoint will be upgraded automatically when the Axiom Software client is upgraded.

# System Configuration Settings

The Axiom Software database stores several system configuration settings that can be edited if needed. For more information on how to change these settings, see Editing system configuration settings.

The following system configuration settings are available:

### ADONetBatchSize

| | |
|---|---|
| Default True | 100 |
| Description | Specifies the batch size for update statements. This should only be changed on the advice of Kaufman Hall Software Support. |

### AllowAmbiguousAlternateAggregationAndColumnFilterFieldDefinitions

| | |
|---|---|
| Default value | False |
| Description | Specifies whether unsupported combinations of alternate aggregations and column filters can be run in an Axiom query. By default, this is False, which means that the Axiom query will error if an unsupported condition is found. The True case is only intended for situations where an existing report uses these unsupported combinations and the client wants to continue to be able to run the report, understanding the limitation. |

### AllowBlanksToBeDataRowSeparators InAQDataUpdate

| | |
|---|---|
| Default value | True |
| Description | Specifies whether blank rows cause duplicate records in an Axiom query data range to be treated as contiguous or not (True/False). This is for purposes of determining update behavior for duplicate records. By default, blank rows are treated as data separators and each duplicate row will be updated.<br><br>If disabled, then blank rows are ignored and the duplicate records are treated as contiguous, which means only the first row in the contiguous block will be updated. |

### AllowShowExcel

| | |
|---|---|
| Default value | True |
| Description | Specifies whether the icon to install / launch the Axiom Excel Client shows in the Axiom Web Client (True/False). By default the icon is available.<br><br>If disabled, the icon will be hidden and therefore users cannot launch the Excel Client from the Web Client. Users can still launch the client via other means if it is installed (such as a desktop shortcut or a dedicated URL).<br><br>This setting can be modified using the System Configuration page in the Web Client. |

### AllowShowPowerPoint

| | |
|---|---|
| Default value | True |
| Description | Specifies whether the icon to install / launch the PowerPoint Add-In shows in the Axiom Web Client (True/False). By default the icon is available.<br><br>If disabled, the icon will be hidden and therefore users cannot install or launch the PowerPoint add-in from the Web Client. Users can still install and launch the add-in via other means (such as by opening a PowerPoint file saved within the Axiom Software database).<br><br>This setting can be modified using the System Configuration page in the Web Client. |

### AllowShowWord

| | |
|---|---|
| Default value | True |
| Description | Specifies whether the icon to install / launch the Word Add-In shows in the Axiom Web Client (True/False). By default the icon is available.<br><br>If disabled, the icon will be hidden and therefore users cannot install or launch the Word add-in from the Web Client. Users can still install and launch the add-in via other means (such as by opening a Word file saved within the Axiom Software database).<br><br>This setting can be modified using the System Configuration page in the Web Client. |

### AuthenticationDomainSelectionListRequired

| | |
|---|---|
| Default value | False |
| Description | Specifies whether the authentication domain selection list always displays on the login screen (True/False). By default, the selection list only displays when it is necessary (meaning only when there are duplicate user names defined in Axiom that use different domains). If you want the domain selection list to always show, then set this to True. |

### AutoCastFloatColumnsDuringAggregation

| | |
|---|---|
| Default value | False |
| Description | Specifies treatment of numeric columns when data is aggregated by a query to the database. This should only be changed on the advice of Kaufman Hall Software Support. |

### AutoUpdateProcessTaskPane

| | |
|---|---|
| Default value | True |
| Description | Specifies whether the Process task pane automatically refreshes in response to process updates that affect the user (True/False). By default the task pane automatically refreshes.<br><br>If disabled, then the Process task pane does not automatically refresh. Instead, a message displays at the top of the task pane to inform the user that the process has updates and the user should refresh the task pane to see them. The user can click the message to refresh.<br><br>This setting should only be changed to False if system performance is being affected by the automatic process updates, which should be rare. |

### AxiomSignalRServerAddress

| | |
|---|---|
| Default value | <Blank> |
| Description | The URI of the server used to control IPC traffic for Axiom Software. By default, when no value is specified here, the Axiom Application Server for the installation is used.<br><br>This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### ClickOnceClientNameExcel

| | |
|---|---|
| Default value | Axiom EPM Excel Client |
| Description | The name of the shortcut for the Excel Client when using ClickOnce installations. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### ClickOnceClientNameWindows

| | |
|---|---|
| Default value | Axiom EPM Windows Client |
| Description | The name of the shortcut for the Windows Client when using ClickOnce installations. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### ClickOnceShortcutLocation

| | |
|---|---|
| Default value | DesktopAndStartMenu |
| Description | The location where Axiom shortcuts will be placed when using ClickOnce installations. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation.<br><br>Available options are: **DesktopAndStartMenu**, **DesktopOnly**, **StartMenuOnly**. |

### ClickOnceShortcutType

| | |
|---|---|
| Default value | CurrentClient |
| Description | Specifies whether shortcuts are created when using ClickOnce installations, and if so what type. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation.<br><br>Available options are: **None**, **Generic**, **CurrentClient**, **Both**. See the *Installation Guide* for more information on what these options mean. |

### CreateKeyIndexesOnTemporaryTables

| | |
|---|---|
| Default value | True |
| Description | Specifies whether indexes are created for key columns of temporary tables (True/False). This should only be disabled on the advice of Kaufman Hall Software Support.<br><br>By default, Axiom Software attempts to create columnstore indexes on certain temporary tables (attempting clustered first, then non-clustered). This setting is only honored if the system is not able to create the columnstore indexes. |

### CreateNonKeyIndexesOnTemporaryTables

| | |
|---|---|
| Default value | True |
| Description | Specifies whether indexes are created for non-key columns of the import temptable. This should only be disabled on the advice of Kaufman Hall Software Support.<br><br>By default, Axiom Software attempts to create columnstore indexes on certain temporary tables (attempting clustered first, then non-clustered). This setting is only honored if the system is not able to create the columnstore indexes. |

### CriticalErrorRegularExpression

| | |
|---|---|
| Default value | Object reference not set |
| Description | Defines error text to match on for purposes of flagging critical errors in server logs. By default, any error messages containing this text are considered critical. This should only be changed on the advice of Kaufman Hall Software Support. |

### DatabaseIsCaseSensitive

| | |
|---|---|
| Default value | False |
| Description | Specifies whether case-sensitivity should be recognized for SQL Server databases. This should only be enabled if your SQL Server database collation is case-sensitive. |

### DefaultColumnValue_Boolean

| | |
|---|---|
| Default value | 0 (meaning False) |
| Description | Defines the default value for Boolean columns. You can change this to 1 for True, or blank for null. It is not recommended to use null as the default for Boolean columns unless you have a particular use case that requires it.<br><br>If changed, the new value only applies to new columns created going forward. Existing columns will continue to use the default value that was set when they were created. |

### DefaultColumnValue_Date

| | |
|---|---|
| Default value | <Blank> (meaning null) |
| Description | Defines the default value for Date columns. You can change this to any valid default value for Date columns.<br><br>If changed, the new value only applies to new columns created going forward. Existing columns will continue to use the default value that was set when they were created. |

### DefaultColumnValue_DateTime

| | |
|---|---|
| Default value | <Blank> (meaning null) |
| Description | Defines the default value for DateTime columns. You can change this to any valid default value for DateTime columns.<br><br>If changed, the new value only applies to new columns created going forward. Existing columns will continue to use the default value that was set when they were created. |

### DefaultColumnValue_Number

| | |
|---|---|
| Default value | 0 |
| Description | Defines the default value for Integer columns (all types) and Numeric columns. You can change this to any valid default value, including blank for null. It is not recommended to use null as the default for number-based columns unless you have a particular use case that requires it.<br><br>If changed, the new value only applies to new columns created going forward. Existing columns will continue to use the default value that was set when they were created. |

### DefaultColumnValue_String

| | |
|---|---|
| Default value | '' |
| Description | Defines the default value for String columns. You can change this to any valid string value. Single quote marks are required.<br><br>**NOTE:** Although it is possible to set the String column default to blank for null, Axiom Software does not differentiate between null values and empty string values in String columns within the spreadsheet environment. Therefore it is recommended to leave the default of empty string if you want the default to be null (blank).<br><br>If changed, the new value only applies to new columns created going forward. Existing columns will continue to use the default value that was set when they were created. |

### DefaultEmailClientName

| | |
|---|---|
| Default value | Outlook |
| Description | Specifies a custom name for the default email client, as displayed when using the **Email Workbook** feature.<br><br>If desired, you can change this name to a different email client used by your organization, or you can clear out the setting and leave it blank. If blank, then the text "Default E-Mail Client" will display in the dialog for this option. |

### DefaultFilterType

| | |
|---|---|
| Default value | Includes |
| Description | Specifies the default comparison method for filtering "simple view" pick lists, such as when using Choose Data Element. Available options are: **BeginsWith** or **Includes**. |

### DefaultGetDataNoValueErrorMessage

| | |
|---|---|
| Default value | <Blank> |
| Description | Specifies the return value when the parameters of a GetData function use valid syntax but the function does not return any data. You can change this to any text that you want to display in this situation. This return value can be overridden within each individual GetData function. |

### DefaultGetDataSQLErrorMessage

| | |
|---|---|
| Default value | #ERR |
| Description | Specifies the return value when the parameters of a GetData function use invalid syntax, resulting in a SQL error. You can change this to any text that you want to display in this situation. This return value can be overridden within each individual GetData function. |

### DisableHashBytesCheck

| | |
|---|---|
| Default value | False |
| Description | Specifies whether the hashbytes check is disabled. This should only be changed on the advice of Kaufman Hall Software Support. |

### DisableColumnStoreIndexOnTemporaryTables

| | |
|---|---|
| Default value | False |
| Description | Specifies whether column store indexes are created on temporary tables used by data save processes. This should only be changed on the advice of Kaufman Hall Software Support.<br><br>By default, Axiom Software attempts to create columnstore indexes on certain temporary tables (attempting clustered first, then non-clustered). This includes temporary tables used by imports and by multipass save-to-database. |

### EmailDistributionAllowedDomainList

| | |
|---|---|
| Default value | <Blank> |
| Description | Defines a list of allowed email domains for Axiom Software. If a list is defined, then emails can only be sent from Axiom Software if the recipients are in the allowed domains. If any recipients are not in the allowed domains, then the email is flagged as blocked and is not sent by the System.SMTPMessageDelivery Scheduler job. By default, the list is blank, which means all email domains are allowed. |

### EnableFreeThreadingInUserFunctions

| | |
|---|---|
| Default value | True |
| Description | Specifies locking behavior for Axiom functions. This should only be disabled on the advice of Kaufman Hall Software Support. |

### EnableLegacyAQMode

| | |
|---|---|
| Default value | False |
| Description | Specifies whether to use the legacy method for creating database queries for Axiom queries (True/False). This is for backward-compatibility only and should never be manually enabled.<br><br>If enabled, then the database queries for Axiom queries are created using the rules in place prior to version 5.1. When you upgrade from a pre-5.1 system to the current version, your system will be automatically set to this mode if the upgrade script detects that your system has the potential for a certain type of query ambiguity (where a specified lookup column potentially exists on more than one lookup table). In order to disable legacy mode, you must modify any affected files to use fully qualified syntax to specify the intended lookup table. Please contact Kaufman Hall Software Support for more information. |

### EnableLegacyWorkflowEngine

| | |
|---|---|
| Default value | False |
| Description | Specifies whether the legacy Workflow feature is visible in the system (True/False). By default, the Workflow feature is hidden and cannot be used. Plan file processes in Process Management should be used to manage plan files through a set of defined steps.<br><br>If enabled, then the Workflow feature is visible and can be used. This should only be enabled in older systems with existing workflows, where clients have not yet had the opportunity to convert to using plan file processes. When older systems are upgraded to version 2016.2 or later, this setting is automatically set to True if the system has existing workflows. |

### EnablePasswordPolicy

| | |
|---|---|
| Default value | True |
| Description | Specifies whether password rules are enforced (True/False). By default, passwords must meet the rules defined in the PasswordRegularExpression setting. If disabled, then any password is valid.<br><br>**NOTE:** If enabled, password rules are only enforced when defining new passwords. If the system contains existing passwords that not meet the rules when this setting is enabled, these existing passwords will continue to be valid. |

### ETLMaxRows

| | |
|---|---|
| Default value | 500 |
| Description | Defines the maximum number of temp table rows that will be displayed to the user when running an import using the Allow Pauses option. This setting should only be changed on the recommendation of Kaufman Hall Software Support. The value cannot be higher than 5,000. |

### ExcelAddinStartupTimeout

| | |
|---|---|
| Default value | 00:01:00 (meaning one minute) |
| Description | Defines the timeout value when starting up the Excel Client and the Windows Client. If the client does not start within this length of time, the startup routine is canceled and an error message displays to the user. This should only be changed on the advice of Kaufman Hall Software Support. |

### ExcelWorksheetPasswordProtectionEnabled

| | |
|---|---|
| Default value | True |
| Description | Specifies whether or not worksheet protection is applied with a password (True/False). By default, when a sheet is designated as protected via the Control Sheet, the protection requires a password to remove it manually (Axiom-controlled features can be used to remove the protection without entering a password).<br><br>If disabled, then the sheet is still protected but the protection can be removed manually without a password. |

### ExtendedDBCommandTimeout

| | |
|---|---|
| Default value | 216000 |
| Description | Defines the timeout value, in seconds, before terminating an attempt to execute a SQL command. This should only be changed on the advice of Kaufman Hall Software Support. |

### FileProcessingSaveDataDefaultBatchSize

| | |
|---|---|
| Default value | 7000 |
| Description | Defines the number of records to process at a time when performing a save-to-database using file processing. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### FileWatcherEnabled

| | |
|---|---|
| Default value | False |
| Description | Specifies whether File Watcher features are available in the Scheduler dialog. This should only be set to True for backward-compatibility purposes, for clients who are actively using the feature and have not yet had a chance to implement a different solution. The feature is deprecated for new installations. |

### ImportSaveBatchSize

| | |
|---|---|
| Default value | 25000000 |
| Description | Defines the number of rows to save in each batch when importing data. This setting applies when inserting or updating rows in the destination table. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### IncludeNonKeysColumnsOnTemporaryTable Index

| | |
|---|---|
| Default value | True |
| Description | Specifies whether non-key columns are included in the non-clustered index on temporary tables. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### IntacctPageSize

| | |
|---|---|
| Default value | 500 |
| Description | Defines the number of records to be processed per batch when importing data from Intacct. The value can be set from 100 to 1000. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### InvalidPasswordErrorMessage

| | |
|---|---|
| Default value | <Blank> |
| Description | Defines the message to display when creating a new password if that password does not meet the rules. This should be left blank to use the default message which details the default password rules. If the rules have been customized with the assistance of Kaufman Hall Software Support, then you can define a custom message that details these rules. |

### IsPackageIntegrationServer

| | |
|---|---|
| Default value | False |
| Description | This setting relates to an internal Axiom Software tool and is not for client use. |

### LDAPAllowedSuffixes

| | |
|---|---|
| Default value | <Blank> |
| Description | Defines the allowed suffixes for LDAP Authentication, used if LDAP Authentication is enabled. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### LDAPAuthEnabled

| | |
|---|---|
| Default value | False |
| Description | Specifies whether LDAP Authentication is enabled for the system (True/False). If enabled, then the LDAPConnectionString must be specified. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### LDAPConnectionString

| | |
|---|---|
| Default value | <Blank> |
| Description | Defines the connection string to the LDAP server, used if LDAP Authentication is enabled. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### LegacyWorkflowAdminMode

| | |
|---|---|
| Default value | False |
| Description | Specifies whether admin are treated using pre-7.2 behavior for purposes of determining workflow stage owners when the assignment is through a role. This is for backward-compatibility only and should not be manually enabled.<br><br>By default, administrators are treated the same way as other users for this purpose. If enabled, then administrators will automatically be stage owners if they are members of the assigned role, regardless of whether they have a permission set with **Interacts with Process Management** enabled. |

### MapF9ToAxiom

| | |
|---|---|
| Default value | True |
| Description | Specifies whether F9 performs an Axiom refresh in addition to calculating the workbook. By default, F9 will refresh all sheets in the workbook, and Shift+F9 will refresh the current sheet.<br><br>If disabled, then the native F9 behavior of the Microsoft Excel version or the Windows Client applies. |

### MaxAQRows

| | |
|---|---|
| Default value | 10000 |
| Description | Defines the maximum number of rows to return for an Axiom query. This setting is intended to prevent users from accidentally bringing in an extremely large number of rows, potentially resulting in excessive processing times or system errors. If the number of rows in the query exceeds the MaxAQRows setting, the user is warned of this and asked if they want to continue.<br><br>**NOTES:**<br>• The only user options are to cancel the query or continue with the full number of rows. This setting defines the threshold for the warning, it does not limit the query to the specified number of rows.<br>• The warning only applies when users manually refresh Axiom queries. If the query is processed by Scheduler, then processing will fail if the query exceeds the threshold.<br><br>This setting can be overridden on a per query basis, on the Control Sheet. |

### MaxChooseValueRows

| | |
|---|---|
| Default value | 1000 |
| Description | Defines the maximum number of rows that can be displayed in the Choose Value dialog. This dialog is used by several features to present a list of values for user selection, such as the GetDataElement function and refresh variables. The limit only applies when the dialog is showing the "full grid view"—meaning, the dialog shows more columns than just the key column and description. |

### MaxConsecutiveCutnPasteWithoutWaiting

| | |
|---|---|
| Default value | 50 |
| Description | Defines how many consecutive cut and paste actions can occur before the system stops and pauses for a second. This setting has to do with system-controlled cut and paste actions such as when creating snapshot copies. Too many consecutive actions may cause certain environments to experience memory quota errors. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxExcelCellsToProcessInAQBatch

| | |
|---|---|
| Default value | 10000 |
| Description | Defines the maximum number of cells to process at a time when refreshing a vertical Axiom query. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxExcelCellsToProcessInSingleArray

| | |
|---|---|
| Default value | 100000 |
| Description | Defines the number of cells in a workbook that are processed at a time when saving to the database. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxFileAttachmentSizeKB

| | |
|---|---|
| Default value | 10000 |
| Description | Defines the maximum size for a single file attachment. This limit is enforced when users upload attachments for plan files.<br><br>When uploading multiple attachments at a time in the Web Client, the total size of all attachments must be less than 50MB. This can be configured separately if needed by using the maxRequestLength property in the web.config file for the Axiom Application Server. |

### MaxHierarchyRowSize

| | |
|---|---|
| Default value | 50000 |
| Description | Defines the maximum row size for a hierarchy. If a hierarchy is created for a table with greater than 50,000 rows, then the hierarchy name will display in the Filter Wizard and Quick Filter, but when expanded a message will display to the user explaining that the hierarchy has too many rows and therefore the individual elements cannot be displayed.<br><br>If needed you can change this setting to a larger row size, however, large numbers of rows in a hierarchy may cause out-of-memory errors on the client. |

### MaximumErrorsToReturnFromSaveOperations

| | |
|---|---|
| Default value | 10000 |
| Description | Defines the maximum number of errors to return when a save-to-database operation occurs. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaximumRowsAllowedThroughCopyTableData

| | |
|---|---|
| Default value | 250000 |
| Description | Defines the maximum number of rows that can be copied when using the Copy Table Data feature. Copying tables with larger numbers of rows may cause performance issues. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxLoginAttempts

| | |
|---|---|
| Default value | 0 (meaning unlimited) |
| Description | Defines the maximum number of login attempts before a user is locked out. By default, users have unlimited login attempts. You can change this to a set number of login attempts to comply with your organization's security policies. |

### MaxRecursionCount

| | |
|---|---|
| Default value | 10 |
| Description | Defines the maximum number of recursive calculations for GetData functions. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxSaveDataRowsInClientMemory

| | |
|---|---|
| Default value | 34000 |
| Description | Defines the maximum number of save data rows that are stored in memory on the client. If the maximum is reached, the data rows are sent to the server and cleared from the client, and then the save process continues. The intent of this setting is to prevent out of memory errors on the client when saving very large sets of data. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxSaveDataToOutputSheetRowsInClient Memory

| | |
|---|---|
| Default value | 250000 |
| Description | Defines the maximum number of save data rows that are stored in memory on the client, for purposes of placing them on an output sheet in the file. This setting only applies when using multipass file processing with the **Save to Output Sheet** option. If Axiom Software determines that the total number of rows for the process will exceed this limit, a message is presented to the user and the process is stopped. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### MaxSystemCurrentPeriod

| | |
|---|---|
| Default value | 12 |
| Description | Defines the maximum number that the system current period can be set to. Individual tables can be set to higher current periods if necessary. For example, most tables may use 12 periods, but you may have a table with payroll data that uses 26 periods. |

### MaxTableColumnNameLength

| | |
|---|---|
| Default value | 0 (meaning use system default) |
| Description | Defines the maximum length of table and column names. The system default is 50 characters. You can specify a different maximum size if needed. However, these names will be used in Axiom queries and Axiom functions to query data, so they should be descriptive and short. |

### MaxTableRowsToOpenInSpreadsheet

| | |
|---|---|
| Default value | 50000 |
| Description | Defines the maximum number of records to be returned within Open Table in Spreadsheet. This can be set to a larger number if desired, however, returning larger amounts may result in significant performance issues. |

### NumberOfPrincipalFiltersToValidateForBulkSave

| | |
|---|---|
| Default value | 5 |
| Description | Specifies the number of filters that are validated when saving user permissions in bulk via Open Security in Spreadsheet. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### OpenIDAuthenticationEnabled

| | |
|---|---|
| Default value | <Blank> |
| Description | Specifies whether OpenID Authentication is enabled for the system (True/False). This option is initially configured during the Axiom Application Server installation, and can be subsequently changed by repairing the installation. |

### PackageIntegrationServerURL

| | |
|---|---|
| Default value | 50000 |
| Description | This setting relates to an internal Axiom Software tool and is not for client use. |

### PackageManagerDefaultValuesThreshold

| | |
|---|---|
| Default value | 0 |
| Description | This setting relates to an internal Axiom Software tool and is not for client use. |

### PasswordRegularExpression

| | |
|---|---|
| Default value | <Custom string used to define default rules> |
| Description | Defines the password rules to be enforced if **EnablePasswordPolicy** is set to **True**. The built-in rules are as follows:<br>• Must be at least 8 characters long<br>• Must contain at least 1 upper-case letter and at least 1 lower-case letter<br>• Must contain at least 1 non-alphabetic character (a number or a symbol)<br>Axiom Software does not provide functionality for clients to change these rules. If you need to enforce password rules and use different rules, please contact Kaufman Hall Software Support for assistance. |

### PlatformUpdateURL

| | |
|---|---|
| Default value | <URL to software support portal> |
| Description | Defines the URL to check for platform updates. This value should not be manually changed except as directed by Kaufman Hall Software Support. |

### ProductUpdateURL

| | |
|---|---|
| Default value | <Blank> |
| Description | Defines the URL to check for product updates. This value should not be manually changed except as directed by Kaufman Hall Software Support. |

### ReleaseJobLocksOnMIAScheduler

| | |
|---|---|
| Default value | False |
| Description | Specifies whether Axiom Software can break a Scheduler Server's lock on a job if that server reports as MIA (True/False). This should only be changed on the advice of Kaufman Hall Software Support. |

### RemoteDataConnectionBatchSize

| | |
|---|---|
| Default value | 10000 |
| Description | Defines the number of rows to be sent in each batch between the Axiom Application Server and the Axiom Cloud Integration Service. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### RestrictSaveAsLocalForManagedDocs

| | |
|---|---|
| Default value | False |
| Description | Specifies whether **Save As (Local)** is available for managed documents (True/False). By default, Save As (Local) is available for eligible documents.<br><br>If you want to remove this option for Axiom managed documents, change this setting to True. When a managed document is active, the Save As (Local) option will no longer appear on the **Save** menu of the Axiom ribbon, or when right-clicking the file tab in the navigation pane.<br><br>Administrators can still save a file locally by using the **Export** option in Axiom Explorer. |

### SAMLAuthenticationEnabled

| | |
|---|---|
| Default value | False |
| Description | Specifies whether SAML Authentication is enabled for the system (True/False). If enabled, then the SAMLUserNameHeader must be specified. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed by repairing the installation. |

### SAMLUsernameHeader

| | |
|---|---|
| Default value | HTTP_EPPN |
| Description | Specifies the user name header for SAML when SAML Authentication is enabled. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### SAMLUsernameSuffixPreserved

| | |
|---|---|
| Default value | False |
| Description | Specifies whether user names defined in Axiom include an @suffix for the SAML identity provider (True/False). By default, it is assumed that Axiom user names do not include a suffix. Set this to True if Axiom user names include a suffix. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### SaveRetryCountOnDeadlock

| | |
|---|---|
| Default value | 3 |
| Description | Specifies how many times the system will attempt to save data to the database after encountering a deadlock error. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### Scheduler_AutomationEngine

| | |
|---|---|
| Default value | WebPreferred |
| Description | Specifies when the Web Engine should be used for Scheduler job processing:<br>• **WebAlways**: The Web Engine is always used for Scheduler job processing.<br>• **WebPreferred**: The Web Engine is the preferred spreadsheet processing engine, but Excel can optionally be chosen for specific tasks. The Web Engine will be selected for all spreadsheet tasks by default (except for those tasks which require Excel).<br>• **WebOptional**: Excel is the preferred spreadsheet engine, but the Web Engine can optionally be chosen for specific tasks. Excel will be selected for all spreadsheet tasks by default.<br>**NOTE:** Using Excel on the Scheduler server is no longer officially supported. This configuration setting refers to an obsolete feature. |

### Scheduler_ContainerIdleLinger

| | |
|---|---|
| Default value | 120 |
| Description | How long (in seconds) a Scheduler container waits in an idle state for more jobs before it shuts down. This value only applies to cloud service systems and is configured by Kaufman Hall Software Support. |

### Scheduler_ContainerLoggingLevel

| | |
|---|---|
| Default value | Warning |
| Description | The logging level for Scheduler containers. This value only applies to cloud service systems and is configured by Kaufman Hall Software Support. |

### Scheduler_ContainerPollRate

| | |
|---|---|
| Default value | 60 |
| Description | The rate (in seconds) at which Scheduler polls the job queue. This value only applies to cloud service systems and is configured by Kaufman Hall Software Support. |

### Scheduler_ContainerProcessorWorkerThreads

| | |
|---|---|
| Default value | 2 |
| Description | The number of worker threads per Scheduler container. This value only applies to cloud service systems and is configured by Kaufman Hall Software Support. |

### Scheduler_FromEmailAddress

| | |
|---|---|
| Default value | noreply@axiomepm.com |
| Description | Defines the "From" email address to use for any email notifications that do not have a separate specified "From" email address (for example, process management email notifications).<br><br>This email address must be specified in order to enable these email notifications. If no email address is specified, the SMTP Email Delivery task will experience an error when attempting to deliver the notifications.<br><br>**NOTE:** For installations that are using subsystems, the system variable `{Scheduler.FromEmailAddress}` may resolve to a subsystem administrator email address instead of the Scheduler "from" email address. |

### Scheduler_MaxContainerInstances

| | |
|---|---|
| Default value | 0 |
| Description | The number of Scheduler containers that can run concurrently. This value only applies to cloud service systems and is configured by Kaufman Hall Software Support. |

### Scheduler_ServiceClusterName

| | |
|---|---|
| Default value | <Blank> |
| Description | The name of the service cluster for Scheduler processing. This value only applies to cloud service systems and is configured by Kaufman Hall Software Support. |

### SchedulingBehaviorTimezone

| | |
|---|---|
| Default value | <Blank> |
| Description | The time zone used when determining the next execution of a scheduled job. By default, if this setting is left blank, the local time zone is used. This setting is primarily for use in Axiom cloud service systems and will be configured by Kaufman Hall Software Support. |

### ShowRememberMe

| | |
|---|---|
| Default value | True |
| Description | Specifies whether the Remember Me option is present on login screens (True/False). By default, this option is available. If disabled, then Remember Me will be hidden on login screens, meaning that users must enter their credentials each time they launch Axiom Software.<br><br>If you disable this option after users have already used Remember Me, their current settings will not be cleared. Each user's credentials will continue to be remembered until they clear the credentials by logging out. Credentials are stored separately for the Web Client versus the Desktop Client, so if a user has saved credentials for both environments then they must log out of both. For the Desktop Client, the only way to log out is to use the Word or PowerPoint add-in, because the Excel and Windows Clients do not have a log out feature.<br><br>This setting can be modified using the System Configuration page in the Web Client. |

### ShowWarningIfMissingAQTags

| | |
|---|---|
| Default value | True |
| Description | Specifies whether missing `[aq#]` tags for active Axiom queries trigger a warning on refresh (True/False).<br><br>The False setting is intended for backward-compatibility only. If warnings are being triggered in many existing files, you can disable this setting until you are able to correct the Axiom query configuration within the affected files. If the [aq#] tag was deliberately hidden using a formula as a means of dynamically disabling a query, the file should be updated to instead use the Active setting for the query. Please contact Kaufman Hall Software Support for assistance as needed. |

### ShowWarningOnGetDataProcessingFailure

| | |
|---|---|
| Default value | True |
| Description | Specifies whether the circular reference warning displays when Axiom Software detects a failure in processing GetData functions. If disabled, then no warning message displays. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### SignalRClientInvalidationLagTime

| | |
|---|---|
| Default value | 1000 |
| Description | Specifies the time zone used when determining the next execution of a scheduled job. By default, if this setting is left blank, the local time zone is used. This setting is primarily for use in Axiom cloud service systems and will be configured by Kaufman Hall Software Support. |

### SubsystemsEnabled

| | |
|---|---|
| Default value | False |
| Description | Specifies whether the security subsystem feature is enabled (True/False). By default, security subsystem features do not appear in the user interface, and subsystems cannot be created.<br><br>If enabled, then the security subsystem features become available in the user interface.<br><br>**NOTE:** If you set this option to True, create subsystems and make user assignments, and then set it back to False, the existing subsystem restrictions will still apply to assigned users. This option simply hides the feature in the user interface; it does not stop any existing subsystems from being enforced. If you do not want to use subsystems anymore, you should remove all user assignments and delete the subsystems before disabling the feature. |

### SuspendDrawingWhileScreenUpdatingOff

| | |
|---|---|
| Default value | False |
| Description | This configuration setting is used to assist in troubleshooting screen drawing issues. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### SystemCurrencySymbol

| | |
|---|---|
| Default value | <Blank> |
| Description | Defines the currency symbol used by columns that are configured as Currency numeric type. If left blank, the currency symbol for the current locale is used.<br><br>The Numeric Type is defined in the column properties. Currently, this symbol is only used by file group display columns. |

### SystemCurrentPeriod

| | |
|---|---|
| Default value | 1 |
| Description | Defines the current period for the system. To change the current period, you can use the user interface in the software (**Administration > Tables > Table Administration > System Current Period / Year**). |

### SystemCurrentYear

| | |
|---|---|
| Default value | 1 |
| Description | Defines the current year for the system. To change the current year, you can use the user interface in the software (**Administration > Tables > Table Administration > System Current Period / Year**). |

### SystemName

| | |
|---|---|
| Default value | Axiom EPM |
| Description | Defines the name of the system. You can change this name as desired.<br><br>This setting can be modified using the System Configuration page in the Web Client. |

### TableRepartitioningRowLimit

| | |
|---|---|
| Default value | 2000000 |
| Description | Specifies the row limit for repartitioning a table as part of saving the table properties. If the table data exceeds this row limit, then the table will not be repartitioned and instead you will be prompted to process the table repartitioning using Scheduler. |

### TiePlanFileSaveToWorkflowTaskSubmit

| | |
|---|---|
| Default value | True |
| Description | Specifies whether users can complete tasks for plan file processes when saving plan files (True/False). By default, when a user saves a file for which they have an active process task, the user is given the option to complete the task as part of the save. The "complete on save" option only applies when the user opens the file as read/write.<br><br>If disabled, then no process prompt displays on save. This setting also applies to the legacy workflow feature. |

### TranslateFrenchKeyboardDecimalSeparator

| | |
|---|---|
| Default value | False |
| Description | Specifies whether special decimal translation behavior applies to the Web Client and Windows Client (True/False). If enabled, then pressing the decimal key on a numeric keypad is interpreted as a comma when the following are true: the current locale's number format is comma, and the number format for the cell is one of Number, General, Percent, Scientific, or Currency. Note that the number format only applies to the Web Client; in the Windows Client, the behavior applies regardless of the number format. |

### UpdateStatisticsDuringSave

| | |
|---|---|
| Default value | False |
| Description | Specifies whether statistics are rebuilt as part of save-to-database processes (True/False). This applies to both the temporary table (if saving more than 10,000 rows) and the destination table. This should only be enabled on the advice of Kaufman Hall Software Support. |

### UseLegacyColumnAggregation

| | |
|---|---|
| Default value | False |
| Description | Specifies whether to use the legacy default aggregation behavior for Integer and Numeric columns in data queries. This should only be enabled on the advice of Kaufman Hall Software Support. |

### UseLegacySQLParser

| | |
|---|---|
| Default value | False |
| Description | Specifies whether to use the legacy SQL parser (True/False). This should only be enabled on the advice of Kaufman Hall Software Support. |

### UseRestrictedWebModeForNonAdmins

| | |
|---|---|
| Default value | True |
| Description | Specifies whether to use a special restricted mode in the Windows Client for non-admin users (True/False). If enabled, then certain file features are explicitly tied to read-write rights. For more information please contact Kaufman Hall Software Support.<br><br>This setting exists for backward-compatibility only and should not be manually enabled in systems where it is not already enabled. |

### UseStickSessionServerHash

| | |
|---|---|
| Default value | False |
| Description | Specifies how sticky sessions are handled for Cloud Service systems. This setting should only be changed on the advice of Kaufman Hall Software Support. |

### VBA_RunMacroDisabled

| | |
|---|---|
| Default value | True |
| Description | Specifies whether VBA custom solutions can be run while in the Axiom Excel Client (True/False). By default, the system does not check for VBA custom solutions, and AxiomVBA.xlam is not loaded when the system is run.<br><br>If set to False, then the system uses the designated event handlers to check for VBA custom solutions, and runs them if found. This setting should only be changed to False if your system is specifically designed to use VBA custom solutions. Enabling custom solutions may unnecessarily impact system performance for systems that do not use VBA. |

### WebClientSkin

| | |
|---|---|
| Default value | <Blank> |
| Description | Specifies the default skin to be applied to Axiom forms. If the **Skin** property for a form is blank, the default skin defined here is used.<br><br>By default, this setting is blank, which means the default **Axiom** skin is used. If desired, you can specify any skin that is available to be selected for an Axiom form, including any custom skin defined for your organization. For the list of available skin names, check the **Skin** property on an Axiom form.<br><br>If you have defined a specific skin name and then want to return to using the default Axiom skin, clear this setting so that it is blank again. |

### WebPageTabItemBackground

| | |
|---|---|
| Default value | #FFFFFF |
| Description | Specifies the background color of web tabs and form dialogs while the "loading" spinner displays. You can specify a different color using a hexadecimal code. |

### WindowsAuthAllowedDomains

| | |
|---|---|
| Default value | <Blank> |
| Description | Specifies the allowed domains for Windows Authentication, if enabled. Separate multiple domain names with a comma. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation.<br><br>This setting can be modified using the System Configuration page in the Web Client. |

### WindowsAuthEnabled

| | |
|---|---|
| Default value | True |
| Description | Specifies whether Windows Authentication is enabled for the system (True/False). By default this is enabled, which means that the allowed domains must be specified using WindowsAuthAllowedDomains. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation.<br><br>If disabled, then Windows Authentication is not used. |

### WindowsAuthUserSyncEnabled

| | |
|---|---|
| Default value | False |
| Description | Specifies whether Active Directory Synchronization is enabled for the system (True/False), allowing users to be imported from and synchronized with Active Directory. This option is only applicable if Windows User Authentication is enabled for the system. This option is initially configured during the Axiom Application Server installation, and can be subsequently changed using the system configuration settings or by repairing the installation. |

### WorkflowChunkingSize

| | |
|---|---|
| Default value | 5000 |
| Description | Defines the number of workflow tasks and instances to be returned from the server to the client at a time. This data is chunked to avoid using up too much memory per request. This setting should only be changed on the advice of Kaufman Hall Software Support. |

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