aPriori

aPriori Professional
Installation Guide
For On-Premise Only
Version 2019 R2

CONTENTS

A.   Performing a Full Database Migration   75

B.   Migration by Support   88

C.   Troubleshooting aPriori as a Creo Toolkit Application   92

D.   SQL Server Export Tools   93

aPriori

About This Guide

This document is for On-Premise installations. It explains how to install, update, and configure aPriori Professional and its related databases. Cloud installations are handled by aPriori personnel and are not covered herein.

Key topics include:

- Overview
- Related documents
- Typographic conventions
- Feedback and customer support

Overview

This *Installation Guide* contains detailed information about installing, updating, and configuring aPriori Professional.

Related documents

For more information about aPriori Professional see:

- *aPriori Professional User Guide* – aPriori Professional on-premise user guide.

- *aPriori Cost Model Guide* – Process groups user guide, which includes a chapter on direct and indirect overhead.

- *aPriori System Administration Guide* – System Admin toolset reference and users guide.

- *aPriori VPE Administration Guide* – Virtual production environment (VPE) toolset administration maintenance and deployment guide.

- *aPriori CMWB User Guide* – Cost Model Work Bench (CMWB) customization guide.

- *aPriori Professional Release Notes* – Summary of new features, feature enhancements, and performance and robustness improvements for aPriori Professional.

- *aPriori System Requirements* – List of minimum and recommended software requirements for running aPriori Professional, Enterprise Platform, and the CAD file formats supported by aPriori.

Typographic conventions

The following conventions are used in this guide to convey additional information.

Style	Application	Example
`Code`	Literal text. The text appears exactly as shown. Usage includes commands, directory names and paths, file names, and system information.	`E:\setup.exe`
`Italic code`	Values that you specify. For example, you need to supply a value for *`your file`* in the path name example to the right.	`C:\aPriori\`*`your_file`*
GUI	Objects in the aPriori interface	The **Document** field …
GUI Action	Interaction objects in the aPriori interface	Click **OK**.

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Arial Narrow Bold
Arial Bold

Note   Notes highlight information, provide supplementary information, offer efficient or easy ways to perform tasks, or explain how to prevent errors or data loss.

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Feedback and customer support

We appreciate your comments about this guide. Please contact us with your comments, questions, and requests for technical support.

Website:	http://www.apriori.com/support
Email:	support@apriori.com

1   Planning Your Installation

Releases and Installation Types

This document applies to ONLY On-Premise installations. If you have purchased aPriori Professional for Cloud, these procedures are handled by aPriori.

Note: aPriori Professional Release 2019 R2 introduces a new Installer wizard. If you Some of the procedures are different than the procedures for prior installations of aPriori Professional.

This document covers the following types of installation:

- Performing a first-time installation
- Updating an existing installation

Updates/upgrades involve either a:

- Maintenance (minor) release update to an existing installation. These typically do NOT include a database upgrade. (But sometimes they do.)
- Major release update to an existing installation. These typically DO include a database upgrade.

Updates typically involve some of the same procedures as a first-time installation. When updating, you must also:

- Run a compatibility script to ensure that updated clients are compatible with the database. All updates require this procedure.
- Perform a database upgrade procedure to ensure that changes in the database schema are reflected. Major release updates typically require this procedure.

Upgrade paths

Every release typically offers direct upgrade paths from at least the previous one or two releases. **You can upgrade directly to 2019 R2 from:**

- **2019 R1 (19.1.x.x, including 19.1.0.0, 19.1.1.0, 19.1.1.1, 19.1.1.2, 19.1.2.0) – Requires updateDB<*vers*>.cmd.**

To upgrade from a release that is earlier than 2019R1, you must perform multiple upgrades, one for each major release. For help with upgrading from a release that is earlier than **2019 R1,** please contact aPriori Customer Support or Professional Services.

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Acquiring the Installation Files

To perform any type of installation, you must acquire the installation files.

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aPriori Customer Support or Professional Services can tell you how to acquire the required installation files. Typically, you download the installation files from web links that aPriori provides. The links can point to either a specific version or to the latest version of the installation files.

The main file is for installing aPriori Professional:

    `aPriori-<version>.zip`

For releases that require database upgrades, you must also download a .zip file:

    `aPriori-databases-<version>.zip`

In these file names:

`<version>` is the release number, so that the full file name is similar to "aPriori-16.2.0.0.zip" or "aPriori-16.2.1.0.zip", or "aPriori-database-17.1.0.1", etc.

Note: In older releases use more verbose version formats, such as "aPriori-2014R1SP1.zip". This file-naming convention is being phased out.

`aPriori-<version>.zip` contains the following:

    `aPriori-setup.exe` – installer for aPriori

`aPriori-databases-<version>.zip` contains the database dump files for Oracle, MySQL, and SQL Server: `standarddata.sql` and, if required, `migrationdata.sql`.

if you have purchased MySQL, aPriori also provides this file:

    `mysql-installer-commercial-<version>.msi`

Note: The `mysql-installer-commercial-<version>.msi` file is for 64-bit Windows operating systems. If you require a Linux-supported file, please notify aPriori Customer Support at support@apriori.com.

To download and extract installation files

1   To download the aPriori client and database installation files, follow the instructions you receive from aPriori Customer Support. The instructions include a browser link to a site that contains downloads of the installation files.

2   aPriori Customer Support may also direct you to download other files, such as updated aPriori Base Machining or Regional Data Library files. Download those files as necessary.

3   Extract the contents of the .zip files and take note of their locations. You must be able to access them to complete the procedures in this document.

Once you have downloaded and extracted the necessary files, you can proceed to the sections of this Installation Guide that pertain to your situation.

Summary of Required Procedures

To understand the different types of aPriori releases and the options that you have for installing them, read the rest of this chapter. If you prefer to install without first reviewing all the options, refer to the table:

Release 2019 R2 (19.2.x.x) is a MAJOR release:

To	Chapter	Sections
Install aPriori for the first time	2. *First-Time Installations*	All
Upgrade from aPriori 2019 R1 (19.1.x.x) including SP1 (19.1.1.x) or SP2 (19.1.2.x) or their hot fixes, to 2019 R2 (19.2.x.x) or its hot fixes **AND retain your database system.**	3. *Update Installations*	All NOTE: You must perform the **updateDB.cmd** database *upgrade* procedures in this chapter.
Update from aPriori 2019 R1 including SP1 or SP2 or their hot fixes **AND change your database system** (for example, changing from MySQL to SQL Server).	3. *Update Installations*	Most of the procedures **but do NOT include the database upgrade procedures in this chapter.** Instead, perform a full migration, as covered in: Appendix A, *Performing a Full Database Migration*
For Future 19.2 maintenance releases: **Upgrade from aPriori 2019 R2 to a 2019 R2 Service Pack or Hot Fix**	3. *Update Installations*	IF APPLICABLE PER SUPPORT: You must perform the **patchDB<*vers*>.cmd** database *patch* upgrade procedure in this chapter.
Upgrade from a version earlier than 2019 R1.		Contact aPriori Customer Support. **Note:** Installation documentation prior to 16.1 consists of three different documents: • *Installation Guide* • *Service Pack Installation* • *Database Upgrade and Migration.*

Understanding release versions

You can identify major and maintenance (minor) releases by their version numbers. The first two numbers (year and release number) identify a major release. The third and fourth numbers in a version identify Service Pack and Hot Fix maintenance releases:

- Examples of major releases: 2018 R3 (18.3.0.0)), 2019 R1 (19.1.0.0),

- Examples of Service Pack maintenance releases: 2018 R1 SP1 (18.1.1.0), 2019 R1 SP2 (19.1.2.0)

- Examples of Hot Fix maintenance releases: 2017 R1 F1 (17.1.0.1), 2018 R3 F1 (18.3.0.1)

- Examples of Major and Service Pack releases when the discussion includes any of their Hot Fix releases: 2018 R3 SP1 F*n* (18.3.1.x), 2019 R1 F*n* (19.1.0.x)

Trailing zeros are sometimes omitted, such as "18.2.1" and "19.1",

Note that once a hot fix release is available, it typically becomes the official shipping version rather than the original major release. For example, once 2017 R1 F1 became available, 2017 R1 stopped shipping and was replaced by 2017 R1 F1.

First-time installations and major updates to existing installations can be performed with either major or maintenance releases, depending on where the product is in its lifecycle. That is, if you are currently running 2018 R2 and want to upgrade to the latest version of 2019 R1, install whatever maintenance release is current.

Note: Throughout this document, when the specific version that you must enter or type is critical, the exact version is shown. However, when general naming syntax is being discussed and an example is shown, the example does not necessarily reflect the specific current release. For example:

Change the name of the installation from the default of "apriori" to also include the version (for example, "apriori2017R1").

If the current release is 2018 R3 SP1, then substitute the correct version, as in "*apriori2018R3SP1*".

Interoperability

Maintenance upgrades typically allow for interoperability between clients running different versions within the same major release.

EVERY release requires that you at least UPDATE the aPriori database with a "compatibility script" to enable it to work with clients running the most recent version of aPriori software. (The script sometimes needs to be run in other situations.) SOME maintenance releases (typically Service Packs) may also require you to UPGRADE the aPriori database. EVERY major release requires a database UPGRADE.

For example, aPriori Professional clients running versions 2018 R1, 2018 R1 SP1, and 2018 R1 SP2 are all compatible with a database that is updated or upgraded to 2018 R1 SP2. However, 2018 R1 SP2 clients are not compatible with a database that is not updated beyond 2018 R1 SP1.

Note: Interoperability is NOT available between different major releases.

Understanding installation types

There are two types of aPriori Professional installations:

- First-time installation
- Update (or upgrade) installation

There are also two types of aPriori Professional updates:

- Maintenance release update
- Major release update

An aPriori first-time installation is the Installation of an aPriori Professional major release on a machine that contains no previous aPriori releases. First time installation steps are:

- Plan the deployment
- Install:
  a. Prerequisite software
  b. A database
  c. Your aPriori clients
- Test in non-production environment to ensure that your installation is complete
- Move to a production environment

A maintenance release is a minor update for a specific, previously installed major release. A major release installation is the installation of a new a Priori major release on a machine that contains the previous aPriori major release. The installation steps for updates are like the first-time installation steps. The major difference between first-time and update installations are:

- For update installations, you typically do not need to install prerequisite software. However, you may have to update to a newer version of the prerequisite software.
- For maintenance updates, you typically do not have to update the database.

The table shows the requirements for each installation and release type

Type		Requirements				
Installation	Release	Install / Update			Run	
		Prerequisite Software	aPriori Client	Database	Compatibility Script	Installation Test
First time	Major	x	x	x	x	x
Update	Maintenance	AR	NA	AR	x	x
	Major	AR	NA	x	x	x

AR – As required

NA – Not applicable

Note: Updates can only occur directly from the previous major release.

If the release that is installed on your machine is older than the previous release, you must first upgrade *and test* each intermediate release. You cannot skip intermediate releases. For example, you cannot install a 2019 R2 version of aPriori Professional as a major update to a 2018 R2 version of the software that is installed on your machine. In this case, you must install and test the 2019 R1 version before you install and then test, the 2019 R2 version of aPriori Professional.

You also cannot just go through the motions of upgrading an intermediate release and then immediately proceed to the next upgrade. aPriori Customer Support can help you move from an older release to the current one.

2   First-Time Installations

Planning a First-Time Installation

This chapter contains a high-level overview for a basic, on-premise deployment of aPriori Professional. For more detailed deployment information, see the aPriori *System Administration Guide*.

For information about supported platforms and CAD systems, see the aPriori *System Requirements* document.

Note: Procedures in this chapter that also apply to upgrade installations., such as *Installing the aPriori Professional Client,* are cross-referenced to the update chapter.

Deployment Options

aPriori Professional is typically deployed as client software where aPriori is run on workstations that connect to a central database. In this configuration, there is no application server–a server is required only to host the database. Both the aPriori Professional client and the aPriori database are required. Flexible deployment options exist for both the database and client deployments.

An application server may be required for bulk costing or Enterprise Platform modules such as Cost Insight Report, Cost Insight Admin: Scenario Synchronization or LDAP Synchronization, or Cost Insight Design.

Client Deployment Options

Document Cache – To improve aPriori performance, save a local version of your VPE data in a cache folder.

Saving VPE data locally eliminates the need to extract large amounts of data from the database each time a part is costed. Extracting large amounts of data from the database can diminish performance, especially when the clients and the database server are in different LANs.

You can specify the location of the document cache folder during client installation, choose one of these three options:

- **User Profile – The** cache location is the home directory of the user, typically `C:\Users\<username>\appdata\local\apriori`. This option is the default.

- **aPriori Installation Directory –** Select this location to place the cache in the same folder as all the aPriori application files. Before you select this option, make sure that the user has write permission to that location.

  Note: By default, in Windows 7 and later, users do not have write permission to the '`Program Files`' folder.

- **Custom –** Specify a custom location for the document cache directory. If you install aPriori locally on each computer, but want users to share the cache location, use this option. The cache location should be a network share that is located within the same LAN as the users.

  If you choose tis option, only a single cache location requires updating when VPEs are updated. However, during costing, each user could experience slightly lower performance because the data pull is across a network.

Note: The user must have read/write access to the document cache directory. Therefore, if you select a network location or the Program Files directory on the local computer, the Windows folder permissions must be set to allow read/write permission.

By default, you also have the option to disable the Document Cache Cleaner. Disable this option only if you set up a shared document cache and automate the updating of the document cache.

To automate the updating of the document cache, run the updateDocCache.cmd script in the `aPriori\bin\` directory. Before running the script, edit it and add the aPriori user ID and a password. You can set up the script to be run by a Windows Scheduled Task on a periodic basis.

Database Deployment Options

Clients can access the aPriori database across a WAN. The aPriori database management system can be MySQL, Oracle, or SQL Server. To install and configure the server, if your database management system is:

- MySQL – If you purchase a MySQL license through aPriori, aPriori supplies the software. Also, you do not need to have prior MySQL experience or expertise because aPriori Support fully handles your MySQL installation and configuration.

- Oracle – You must provide the Oracle software and license and a DBA.

- SQL Server – You must provide the Microsoft software and license and a DBA.

Managing Deployments

By default, aPriori supports the ability to separate data and easily switch between the different data sources. For example, you can have a production deployment that has multiple component databases (where part data is stored) and a shared VPE database. This allows a company to segregate users and the parts they cost, while maintaining a single repository for VPEs that can be accessed by all users. This functionality provides a solution to companies that have groups, which do not want to share information or must segregate products and components due to regulations such as iTar.

You can also use the aPriori Access Control functionality to define what users have various levels of access to different components.

Regardless of how you decide to configure your production environment, aPriori strongly urges you to maintain both a production installation and a test installation on separate servers. Use the test installation to validate upgrades and database migrations, and new configurations such as changes to VPEs, Access Control Objects (ACOs), User Defined Attributes (UDAs), site variables, etc. Once you are 100% confident of your changes, you can roll them over to the production installation.

Recommended Standard Deployment
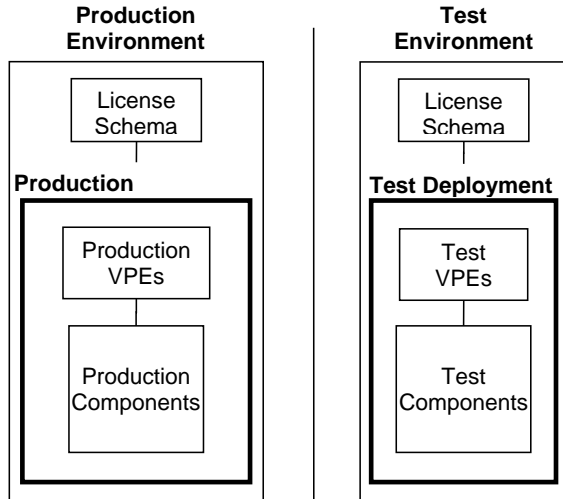
Production Installation – The environment where user day-to-day work is completed and saved.

Test Installation – The environment where Access Control, UDAs, etc. are edited and tested. A typical workflow is to export VPEs from the Production Deployment, import into the Test Deployment, edit and test in the Test Deployment, and then Import into Production Deployment.

To learn how to install additional deployments, for example for VPE development or security, see the aPriori *System Administration Guide.*

Note: In earlier versions of aPriori, the recommended structure was for all Production and Test deployments using the same version of aPriori to share a license file, with only staging servers using a different license file. THIS CONFIGURATION IS OBSOLETE AND IS NO LONGER SUPPORTED.

For any deployment that you plan to change Access Control, UDAs, etc. in, use a different instance of the license than the instance that you use for production data. The same license file can be re-used for both installations.

If you are upgrading an existing aPriori installation that uses an obsolete, unsupported deployment configuration, you must contact aPriori Support for assistance with migrating to a newer, supported deployment scheme.

Advanced deployments

The previous section provides a high-level overview of a basic aPriori deployment. For more information about deployments and more advanced configurations, see the "Managing Deployments" section of the aPriori *System Administration Guide.*

Installing Prerequisite Software

Prior to installing aPriori, you must install and configure the prerequisite third-party components. For installing third-party products, the aPriori Professional *Installation Guide* provides detailed information only for aPriori-specific configurations. Refer to the third-party product manufacturer's documentation for complete installation and setup information.

Prerequisite Database Software

aPriori requires a database. MySQL Server is available through aPriori. Other supported databases include Oracle and Microsoft SQL Server. Check the most recent edition of the aPriori *System Requirements* document for the most up-to-date list of database versions that are supported by your version of aPriori.

Database components:	Available from
MySQL Server 5.6 or 5.7 MySQL Workbench	One copy is provided by aPriori if purchased
Oracle 11g or 12c	Not provided by aPriori. Contact your Oracle representative.
Microsoft SQL Server 2014; or 2016 or 2017 Standard Edition	Not provided by aPriori. Contact your Microsoft representative.

For more information, see "*Installing and Configuring a Database*".

Clients

To generate or modify CAD models, your installation may require a CAD application. For example, if you are using aPriori in your design process and running aPriori Professional as a CREO® toolkit application, you must purchase and install CREO®. If you are using aPriori Professional as a standalone application, you must be purchase and install any supported CAD product you plan to use with aPriori.

Installing a CAD Application

The Direct Integration mode of aPriori requires Creo® to be installed. For installation instructions refer to your CAD Application Installation Guide.

To use aPriori with Creo® in Direct Integration mode, you must provide the Creo® startup directory during aPriori installation.

Installing and Configuring a Database

aPriori supports three database management systems (DBMS):

- MySQL
- Oracle
- Microsoft SQL Server

For the current supported versions, see the *System Requirements* document.

Note: The aPriori solution is typically sold as software plus services. Installation services are often included, in which case you do not need to perform the database installation on your own. This is particularly true of MySQL installations. Please refer to your Statement of Work to understand if this service is included. If so, the following sections are for your reference only.

For information on installing and configuring:

- MySQL – See *MySQL Installation and Configuration*.
- Oracle – See *Oracle Installation and Configuration*.
- Microsoft SQL Server – See *SQL Server Installation and Configuration*.

MySQL Installation and Configuration

This section contains information for installing and configuring MySQL on a supported Windows operating system. For Linux installation and configuration instructions, see *Installing MySQL on Linux*.

To create and maintain a MySQL aPriori database you must install these:

- MySQL Server 5.6 or 5.7
- MySQL Workbench 6.3

Installing MySQL Server on Windows

aPriori requires that MySQL Server be installed on the server only. The MySQL Server installer and license are provided by aPriori and can be found with the aPriori installation media.

To begin MySQL server installation on Windows (MySQL Win Part 1)

1 Acquire and run `mysql-installer-commercial-<version>.msi`, the installer package for 64-bit servers.

   Note: At the time of publication of this guide, the correct versions for 5.6 and 5.7 were 5.6.36.0.and 5.7.18.0 respectively. You may be installing a later version of the installer package.

2 Accept the license terms and click **Next.**

3 Select your Oracle Support option and click **Next**.

4 Select **Custom** and click **Next**

> **Commented [LC13]:** Same info in many places – consolidate, single source, link. Change for 2020 R1

5 On the next screen expand **MySQL Servers** and **Applications**, then move the following modules to the **Products/Features to Be Installed** column.

- **MySQL Server *<version>* - X64**

- **MySQL Workbench *<version>* -X64**

You do not need any of the "MySQL Connectors" or "Documentation". Click **Next**.

6 If any conflicts are reported, review and correct them, and then click **Next**.

7 Click **Execute**. When the execution is complete, to proceed to the configuration steps, click **Next**

MySQL Server Configuration screen (MySQL Win Part 2)

1 On the **Type and Networking** screen:

- For Sever Configuration Type select **Server Machine** from the dropdown

- The default port number is **3306**. Change the number as required. Make sure that the **Open Firewall port for network access** check box is selected.

- Select the **Show Advanced Options** check box and then click **Next.**

- Determine whether to enable the Enterprise Firewall and select or clear the check box accordingly.

- Click **Next**.

2 By default, there is no password on the **Accounts and Roles** screen. To complete the installation, you must set a password for the built in MySQL "root" administrator. Be sure to remember the password because you must supply it later in the installation. For now, do not create any other users. Click **Next**.

3 On the **Windows Service** screen, the default settings here should be fine. However, if you prefer, you can change the name of the service and/or the account under which that service runs. Click **Next.**

4 *(MySQL 5.7 only):* If you are presented with a **Plugins and Extensions** screen, you can leave **Enable X Protocol/MySQL as a Document Store** disabled (unchecked). Click **Next.**

5 On the **Advanced Options** screen you should only change the default logging options if directed to do so by aPriori Customer Support. Typically, you should accept the default logging options, then click **Next.**

6 On the **Apply Server Configuration** screen, click **Execute** to apply the configuration settings. Use the **Configuration Steps** and **Log** tabs to monitor progress and troubleshoot issues. Once the configuration is done click **Finish**.

MySQL Workbench (MySQL Win Part 3)

1 When the install is complete, MySQL Workbench should start. If it does not, you can start it from the Windows **Start** menu.

2 If you changed the path of the data location earlier, you need to edit the connection. Right click on the Local instance of MySQL and select edit connection. Click the **System Profile** tab and then replace the path for `\my.ini` file with the path you chose for the data files. Click **Close**.

3 Connect to the local instance by clicking on the **Local instance MySQL** icon. If prompted, enter the password that you created for the "root" user.

4 Click **Options File** from the list on the left. If prompted, enter your password again.

5 On the **General** tab, scroll down and make sure that the default storage engine is `INNODB` and that the character set server is `utf8`.

6 Next, go to the **Networking** tab and change **max_allowed_packet** to `256M`. (Take note of this value, particularly if aPriori Customer Support has directed you to use a different value. If you are running MYSQL Version 5.6.19 or later, you need it in the next step.)

7 [FOR MYSQL VERSIONS LATER THAN 5.6.19] Open the **InnoDB** tab and scroll to **innodb_log_file_size**. Ensure that this line is checked and set the value to at least six times the value of **max_allowed_packet** that you set in the previous step. For example, for the default **max_allowed_packet** value of `256M`, enter a value of at least 1536M for **innodb_log_file_size.**

8 On the **InnoDB** tab, scroll to **innodb_buffer_pool_size** and ensure that it is set to a value at `1G` or greater.

9 In the lower right corner, click **Apply**. Then, in the popup window, again click **Apply**.

10 To create a new schema, select the **+schema** icon.
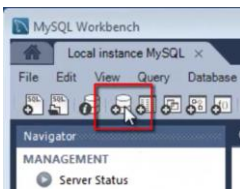
11 Name the schema. For single production databases, "apriori" is a typical schema name. Click **Apply**.

12 Click **Apply** again and then click **Finish**.

13 You can create more schemas as necessary, such as "apriori_test" and "apriori_training" for test and training purposes, respectively.

Import standarddata.sql (MySQL Win Part4)

Next, import the `standarddata.sql` file into your newly created schemas. You can download and expand the `standarddata.sql` file from the `aPriori-databases-<version>.zip` file. For more information, see Chapter 1.

1   In the list on the left, click **Data Import/Restore**. Alternatively, in the menu bar, select **Server > Data Import**.

2   Select the **Import from Self-Contained File** radio button and browse to the `standarddata<version>.sql` file. For example:

    `C:\Users\<username>\Downloads\aPriori-databases-<version>\MySQL\`
    `standarddata.sql`

    Click **Open**

3   Specify which schema to import into from the **Default Target Schema** drop-down menu. Click the **Start Import** button in the bottom right corner. Once it is finished, select the **Import from Disk** tab and repeat the same process for the other schemas that were created.

Create a user and assign privileges (MySQL Win Part 5)

1   Next create a user and assign privileges: Select **Users and Privileges** from the list on the left or from the **Server** menu.

2   Click the **Add Account** button located on the bottom left.

3   Enter a **Login Name** and **Password**. They can be anything you would like. Confirm the password, then click **Apply**.

4   Click on the **Schema Privileges** tab, then click the **Add Entry** button.

5   Select the **Schemas matching pattern or name** radio button. If all the schemas start with the same name you can type the beginning and use a wild card. For example: `apriori%` Click **OK**.

6   You need to select all the permissions under **Object Rights (SELECT, INSERT, UPDATE, DELETE, EXECUTE, SHOW VIEW)**, plus **TRIGGER** under **DDL RIGHTS**. Select each one and then click **Apply**.

You can exit MySQL Workbench.

FOR ENTERPRISE PLATFORM ONLY - Edit the startup file (MySQL Win Part 6)

If you are planning to install Enterprise Platform modules such as Cost Insight Report or Cost Insight Admin, you must set a system variable in the MySQL startup file to ensure that timestamp columns get correctly updated during future upgrades. This system variable (named `explicit_defaults_for_timestamp`) must be set to "1" (or "TRUE"). For information about why this setting is necessary, see the MySQL documentation at https://dev.mysql.com/doc/refman/5.6/en/server-system-variables.html#sysvar_explicit_defaults_for_timestamp.

1   Open Notepad (or your preferred text editor as an Administrator.

2 Navigate to the MySQL initialization file and open it. (This file is typically `ProgramData\MySQL\MySQL Server <version>\my.ini` If you cannot see the ProgramData folder, you need to turn on hidden files in Windows Explorer.

3 Scroll to the bottom of the file and add these lines:

```
# System variable added for aPriori
explicit_defaults_for_timestamp=1
```

4 Save the file.

Restart the MySQL service (MySQL Win Part 7)

Finally, stop and restart the MySQL service (MySQL*<version>*) from **Control Panel \ Administrative tools \ Services**.

Anti-virus Software Exceptions for MySQL (MySQL Win Part 8)

We recommend excluding the MySQL data directories from virus scans. In addition to the data directory, MySQL uses `C:\WINDOWS\Temp` when importing and exporting databases. This should also be excluded from virus scanning. By default, the MySQL data directory is located at: `C:\ProgramData\MySQL\MySQL Server <version>\data`

Installing MySQL on Linux

Important: aPriori requires a case-insensitive database. By default, MySQL on Linux is case-sensitive. Keep this in mind if you plan to use an existing Linux MySQL database server. To make the server case-insensitive, add the following line to the `my.cnf` file, then restart the MySQL process before importing the data.

```
lower-case-table-names=1
```

The following sections only apply when using MySQL on a Linux operating system. These instructions were written and tested with CentOS version 5.5. The specific Linux syntax may vary slightly between versions. These instructions assume the user has a general understanding of the specific version of Linux being used.

There are GUI interfaces for MySQL available on Linux which can also be used. Command line instructions are provided since your Linux server may not have a GUI installed.

You need:

- Root (administrative) privileges on the Linux server.
- The MySQL server and client RPM packages for the specific version of Linux on which you are installing (provided by aPriori).
- The aPriori database files which contain the aPriori schema (provided by aPriori).

Note: In this section, where a command is to be typed, it is preceded by either "shell>" or "mysql>". These are command prompts and are not to be typed as part of the command.

MySQL Client Components (MySQL Linux Part 1)

Run the RPM package that was provided to you by aPriori Support. You may have to use the –nodeps and –force options as used in the following command.

Note that the names of the RPM files differ slightly from what is shown below depending on the version of Linux you are using.

```
shell> rpm -i –nodeps –force MySQL-client-advanced-5.6.16-
1.el6.x86_64.rpm
```

MySQL Server Components (MySQL Linux Part 2)

Run the RPM package that was provided to you by aPriori Support. You may have to use the –nodeps and –force options as used in the following command.

```
shell> rpm -i –nodeps –force MySQL-server-advanced-5.6.16-
1.el6.x86_64.rpm
```

The installation should complete on its own and start MySQL. You can verify that it is running by typing the following command to see the version information about MySQL.

```
shell> mysqladmin version
```

Securing MySQL on Linux (MySQL Linux Part 3)

MySQL has a default administrative user called root. After installing MySQL, the root user ID has no password. Follow these steps to set the root password.

1   Launch mysql

```
shell> mysql –u root –p
```

2   View accounts

```
mysql> SELECT User, Host, Password FROM mysql.user;
```


3   Use the following steps to allow root access from remote machines. This is an optional security setting which allows you to administer the database server from the MySQL Administrator GUI on a Windows computer.

```
mysql> create user root;
```
```
mysql> grant ALL on *.* to root;
```

4   Set the root password. Replace *<yourpassword>* below with the password you want to use.

```
mysql> UPDATE mysql.user SET Password = PASSWORD('<yourpassword>')
    WHERE User = 'root';
```
```
mysql> FLUSH PRIVILEGES;
```

5 Optional: Remove the anonymous accounts. Note, the " `''` " just before the " @ " are two single quotes, not 1 double quote.

```
mysql> DROP USER ''@'localhost';
```

```
mysql> DROP USER ''@'localhost.localdomain';
```

Note: The exact host name comes from the table in Step 2.

6 View accounts again.

```
mysql> SELECT user, host, password FROM mysql.user;
```

7 Exit MySQL

```
mysql> exit
```

MySQL Options File in Linux (MySQL Linux Part 4)

Edit the file /etc/my.cnf:

1 Go to the `/etc` directory and type:

```
shell> vi my.cnf
```

2 Press **Alt-I** to insert

3 Move down to the section under `[mysqld]` and type these two lines

```
max_allowed_packet=268436480
lower-case-table-names=1
```

4 [FOR MYSQL VERSIONS LATER THAN 5.6.19] Also add the following line:

```
innodb_log_file_size=1610612736
```

This value should be set to at least six times the value of **max_allowed_packet** that you set in the previous step.

5 At the end of the file, append these lines:

```
# System variable added for aPriori
explicit_defaults_for_timestamp=1
```

This setting ensures that timestamp columns get correctly updated during future upgrades. For information about why this setting is necessary, see the MySQL documentation at https://dev.mysql.com/doc/refman/5.6/en/server-system-variables.html#sysvar_explicit_defaults_for_timestamp.

6 Press **ESC**, type '**:wq**' followed by **Enter**

7 Stop MySQL

```
shell> mysqladmin -u root –p shutdown
```

8 Start MySQL

```
shell> mysqld –user=mysql –log &
```

Creating the aPriori database and users in Linux (MySQL Linux Part 5)

1 Start the MySQL client again.

```
shell> mysql –u root –p
```

2 Create the databases and users

```
mysql> CREATE DATABASE apriori;
```

(optional) `mysql> CREATE DATABASE apriori_test;`

`(optional) mysql> CREATE DATABASE apriori_training;`

```
mysql> CREATE USER apriori IDENTIFIED BY 'apriori';
```

```
mysql> CREATE USER admin IDENTIFIED BY 'admin';
```

3 The following statements grant the proper privileges to the users. They assign a set of privileges to the users 'apriori' and 'admin' on the databases 'apriori', 'apriori_test', and 'apriori_training'. The user 'admin' has all the privileges as 'apriori' plus DROP and CREATE. The permissions on all 3 of the databases are the same.

```
mysql> GRANT SELECT, INSERT, UPDATE, DELETE, REFERENCES, INDEX,
    ALTER, CREATE TEMPORARY TABLES, LOCK TABLES, CREATE VIEW, SHOW
    VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE
    ON apriori.*
    to apriori;
```

```
mysql> GRANT SELECT, INSERT, UPDATE, DELETE, REFERENCES, INDEX,
    ALTER, CREATE TEMPORARY TABLES, LOCK TABLES, CREATE VIEW, SHOW
    VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE, DROP, CREATE
    ON apriori.*
    to admin;
```

```
(optional) mysql> GRANT SELECT, INSERT, UPDATE, DELETE, REFERENCES,
    INDEX, ALTER, CREATE TEMPORARY TABLES, LOCK TABLES, CREATE VIEW,
    SHOW VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE
    ON apriori_test.*
    to apriori;
```

```
 (optional) mysql> GRANT SELECT, INSERT, UPDATE, DELETE, REFERENCES,
    INDEX, ALTER, CREATE TEMPORARY TABLES, LOCK TABLES, CREATE VIEW,
    SHOW VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE, DROP, CREATE
    ON apriori_test.*
    to admin;
```

```
(optional) mysql> GRANT SELECT, INSERT, UPDATE, DELETE, REFERENCES,
    INDEX, ALTER, CREATE TEMPORARY TABLES, LOCK TABLES, CREATE VIEW,
    SHOW VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE
    ON apriori_training.*
    to apriori;
```

```
(optional) mysql> GRANT SELECT, INSERT, UPDATE, DELETE, REFERENCES,
    INDEX, ALTER, CREATE TEMPORARY TABLES, LOCK TABLES, CREATE VIEW,
    SHOW VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE, DROP, CREATE
    ON apriori_training.*
    to admin;
```

```
mysql> exit
```

4 Import the database:

- Save the `standarddata<version>.sql` files on the Linux server. This file is contained within the database zip file that was provided with the software downloads.

- Go to the folder containing the database files and type the following commands, replacing `<version>` with the actual version number and platform of the file to be imported.

```
shell> mysql –u root –p apriori < standarddata<version>.sql

(optional) shell> mysql –u root –p apriori_test <
    standarddata<version>.sql

(optional) shell> mysql –u root –p apriori_training <
    standarddata<version>.sql
```

Oracle Installation and Configuration

aPriori requires a MySQL, Oracle, or SQL Server database. This section describes the requirements for Oracle database configuration. If you are using MySQL or SQL Server instead, please go to either:

Oracle configuration should be performed by a certified Oracle Database Administrator.

NOTE: The aPriori client does not support client-side load balancing via the Oracle Real Application Clusters (RAC). If RAC is being implemented on your Oracle database, you must specify one particular USER/SCHEMA instance.

Installing Oracle

Before beginning Oracle installation and configuration, you should note the following information that is required by the aPriori client:

- Names of users, SIDs, service names, and port number are not assumed by the aPriori client. This means you are free to provide any values for the Oracle database, SID, username, password, etc. Make note of the following information because it is required during the installation of the client software:

  - Oracle host name

  - Oracle SID or Service Name

  - Oracle username

  - Oracle password

- aPriori assumes that this user is the owner of the database objects. Therefore, in order to use a username to connect which is different from the user who owns the database objects (tables and sequences), you must create synonyms which point to the actual objects.

To install and configure Oracle

You may decide to use an existing Oracle server for aPriori. If you need to install Oracle, the following steps outline the installation and configuration used by aPriori Quality Assurance for the servers used for certification.

Run the Oracle Setup file and during the installation use defaults except:

- In Step 2, choose: **Create and configure a database**. Specify any database name you wish.

- In Step 4: Specify **Use Standard Edition**, and **Change Character Set to Unicode AL32UTF8**

Note: aPriori uses Standard Edition for testing and certification, however, since this represents a subset of functionality of the Enterprise Edition, that should also work.

Once the installation is complete:

1 Set the PROCESSES initialization parameter to at least 150 + (5 * number of expected concurrent aPriori users)

2 Create a tablespace with any name you choose. Allocate at least 32Gb of available space for up to 100 total aPriori users and an addition 32Gb for each additional 100 users. Or choose unlimited tablespace.

3 Create a user with the Default Tablespace you created. This is the user that the aPriori client uses to connect to the server and owns the production database objects (unless you create synonyms to other user's objects). Create any name and password you wish. This user is referred to as the master database since it contains the user and license information.

4 Grant the following System Privileges to the user created in the previous step:

- CREATE SESSION
- UNLIMITED QUOTA

5 (Optional) Create another user with the Default Tablespace you created. This user owns the database objects for the test deployment. It is recommended that the username have the word 'test' in it to indicate its purpose. The intent of the test deployment is as a safe place to test configuration changes.

6 Grant the following System Privileges to the user created in the previous step:

- CREATE SESSION
- UNLIMITED QUOTA

7 (Optional) Create another user with the Default Tablespace you created. This user owns the database objects for the training deployment. It is recommended that the username have the word 'training' in it to indicate its purpose. The intent of the training deployment is as a safe place to train new users on the software.

8 Grant the following System Privileges to the user created in the previous step:

- CREATE SESSION
- UNLIMITED QUOTA

9 Configure your server to listen on a public interface

To import the Oracle data files

1   Unzip the file named `aPriori_databases_<version>.zip` that was provided with the installation media. This file contains Oracle datapump dump files that can be imported into Oracle 12c or 11g.

2   Import the file into the user(s) you created in the previous section using the Oracle Data Pump Import command **impdp**. The specific parameters required can be found in the `readme.txt` file also included in the installation media.

Here are examples of the command. Replace the items in angle brackets ("$<$ $>$") with the actual values and do not include the brackets. **Note:** This example uses the EZ_CONNECT method as opposed to TNSNAMES.ora.

For Service Name:

```
impdp <DBAusername/DBApassword@//hostname:port/serviceName>
    dumpfile=STANDARDDATA<version>.sql
    directory=<your_server_datapump_dir>
    SCHEMAS=APRIORI_DB REMAP_SCHEMA= APRIORI_DB:<your_schema_user>
    REMAP_TABLESPACE= APRIORI_DB:<your_tablespace>
```

For SID:

If you use SID rather than Service Name, change the first line as shown:

```
impdp <DBAusername/DBApassword@//hostname:port:SID>
    .
    .
    .
```

Additional Oracle information

▪   If you limit the number of connections to the aPriori database, set the number to 10 times the number of expected concurrent connections, as each client may have up to 10 connections at one time.

▪   Load balancing – aPriori does not support client-side load balancing currently. When installing the aPriori client, you must enter only one host name (or IP address). In client-side load balancing, the client application is given multiple IP addresses for the host and selects one of them at random when connecting.

SQL Server Installation and Configuration

aPriori requires a SQL Server, MySQL, or Oracle database. This section describes the requirements for SQL Server database configuration. If you are using Oracle or MySQL instead, please go to either:

▪   *MySQL Installation and Configuration* on page 18

▪   *Oracle Installation and Configuration* on page 26

SQL Server configuration should be performed by a certified SQL Server Database Administrator.

Installing SQL Server

Before beginning SQL Server installation and configuration, you should note the following information that is required by the aPriori client:

Names of users, database instance names, port numbers, etc., are not assumed by the aPriori client. This means that you are free to specify values that make sense for your location. However, make note of the following information as you define it in the following steps, because it is required during the installation of the client software:

- SQL Server host name

- SQL Server port number (typically 1433)

- SQL Server database instance name

- SQL Server authentication style (either "SQL Server" or "Windows")

- SQL Server username for the aPriori database

- SQL Server password

If you use an existing installation of SQL Server for aPriori, you or a certified SQL Server administrator must identify the correct values to specify to the aPriori installation utility.

If you need to install SQL Server for aPriori, the installation defaults provided during a SQL Server installation are generally compatible with aPriori EXCEPT for the details specified below.

To install and configure SQL Server

Proceed to install SQL Server using the default procedures and values except:

- Specify the 'Mixed mode' authentication option. This setting allows you to use both SQL Server and Integrated (Windows) authentication:
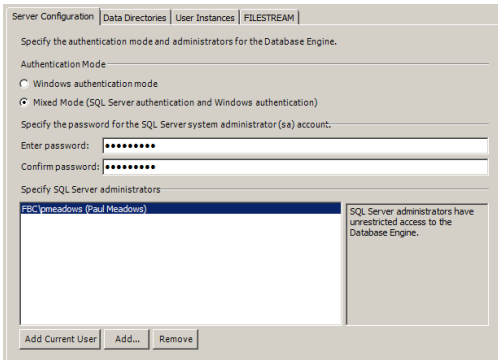
- Once you have installed SQL Server, to set the TCP port and to define a user account, run the SQL Server Configuration Manager:

3 Bring up the Windows **Start** menu and in the **Search programs and files** field, start typing:

```
SQL Server 2014 Configuration Manager
```

10 When the **SQL Server 2014 Configuration Manager** link appears, click it.

11 In the resulting window, click the **Protocols** line under **SQL Server Network Configuration**, then right-click the **TCP/IP** line in the right column and **Enable** it.
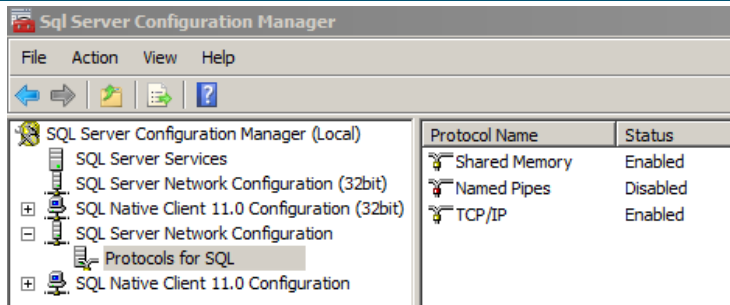
12 Right-click **TCP/IP** again and click **Properties.**

13 Click the **IP Addresses** tab.

14 Scroll down to the **IPAll** section and enter a value for **TCP Port**. The typical port is `1433`.

15 Restart SQL Server.

16 Create an "apriori" login and specify a secure password. You can do so either with SQL Server Management Studio (SSMS), or from the command line using the following syntax:

```
sqlcmd -S "localhost,1433" -d master -Q "CREATE LOGIN apriori WITH
    PASSWORD='< apriori_db_password >'
```

Notes:

- This command assumes that your Windows user account was included as a SQL Server administrator during the install. If the account is not an SQL Server admin, add: **-U sa -P <password>**

- SQL Server distinguishes between Logins and Users. Logins are associated with the Server; User are associated with individual Databases. Logins get mapped to Users. When aPriori requires a database username in order to establish a connection to the database it needs the Login name.

To create a SQL Server database instance

You should create an SQL Server database instance for the aPriori Client before you install aPriori Professional. This section shows how to create a database instance. If you plan to use more than one version of aPriori, each should use a separate database instance. If the client is intended to connect to an existing database instance, skip this step.

17 Create a database, ensuring the **Is Read Committed Snapshot On** option is enabled.

Note: You might experience hangs or deadlocks if this option is not enabled.

You can enable this option from the command line as shown below. You can also use SQL Server Management Studio (SSMS) if you prefer.

```
sqlcmd -S "localhost,1433" -d master -Q "CREATE DATABASE
    [apriori_db]; ALTER DATABASE [apriori_db] SET
    READ_COMMITTED_SNAPSHOT ON; ALTER DATABASE [apriori_db] SET
    AUTO_CLOSE OFF; ALTER AUTHORIZATION ON DATABASE::[apriori_db] TO
    apriori"
```

Notes:

- This example creates a database named **apriori_db.** You can specify whatever name you like, but you must ensure that it is used consistently wherever the database is referenced.

- This configures the 'apriori' user (created earlier) as the database's owner. If you plan to do everything using your Windows user account, you can omit the 'ALTER AUTHORIZATION' clause.

- The SQL shown also disables the auto-close feature. This is typically disabled by default but could be enabled in some versions of SQL Server. (The auto-close feature closes the database and releases some resources when there are no users connected. In a production environment, closing the database has little value and typically degrades performance for the next connection.)

18 Ensure that the **Collation** setting under **Options** is set to `SQL_Latin1_General_CP1_CI_AS`
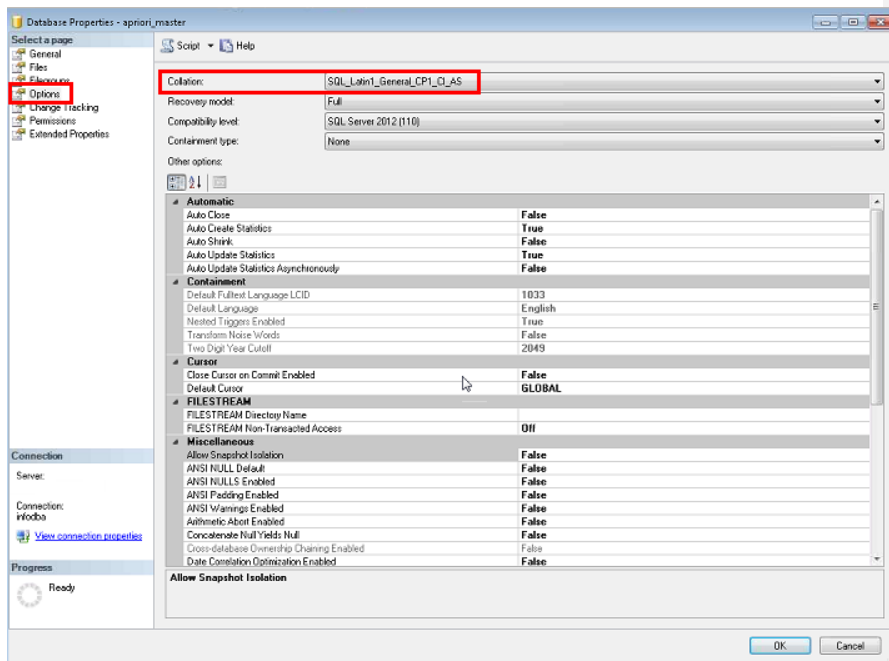
Notes:

– Collations that have either "_CS_" or _BIN in their name prevents aPriori from working correctly. aPriori has table names

---

such as "fbc_ComponentState") that have uppercase letters in their name, but which get called from within aPriori as all lowercase (e.g., "fbc_componentstate"). A database with a CI (case insensitive) collation ignores the difference, while a database with CS (case sensitive) or BIN (binary comparison) fails to open the table in request.

– Non-USA installations may be able to substitute other suitable collation settings as documented on this Microsoft page: https://msdn.microsoft.com/en-us/library/ms143508(v=sql.105).aspx

19 Import the aPriori `standarddata<version>.sql` file into the newly created database, using the following command line (replacing `<version>` with the actual platform and version suffix to the file name):

```
sqlcmd -S "localhost,1433" -U apriori -P <apriori_db_password> -d
   apriori_db
   -i standarddata<version>.sql
```

Notes:

- This assumes that you are using the **apriori** user created earlier. The `-U` and `-P` parameters can be omitted if you instead use your Windows account.

- Several warning messages of the form appear:

  ```
  "Warning! The maximum key length is 900 bytes."
  ```

  These can be ignored. The client includes runtime checks to avoid exceeding SQL Server's maximum key length.

- However, there is a limit of 404 characters on the combined length of the component and scenario names. Any attempt to save or migrate a component that exceeds this limit fails with an error messages similar to:

  ```
  "The scenario name is too long. The combined length of the
  component and scenario names must not exceed 404
  characters..."
  ```

  If you encounter such a message when using aPriori, you must rename the problematic scenario.

aPriori Client Installation Adjustments

When you install the aPriori Client (see *Installing the aPriori* Professional Client) after installing SQL Server, make the following adjustments:

At the **Database Schema Configuration** panel, select **SQL Server** and fill in the fields reflecting the values used in the database configuration above.

Note the option to choose either '**SQL Server**' or **Windows Authentication** ("Integrated/Native Authentication"). In the latter case, the **username** and **password** fields are redundant and are therefore disabled.

Notes:

- In the SQL Server environment, the **Database Schema Name** field changes to **Database Instance Name**. Schemas are distinct from database instances

in SQL Server. aPriori uses the database user's default schema, typically 'dbo'. Distinct database instances are used in cases where distinct schemas would be used with MySQL or Oracle.

- If you select **SQL Server Authentication**, the **username** field requires the login name created earlier (for example, enter **apriori** if the earlier command line example was used exactly as shown).

20 Complete the install as directed in the installation chapter.

A Note About Deleting SQL Server Databases

You may find that attempts to delete SQL Server databases fail or time-out due to connections having been left open. This is easily solved:

- When deleting a database from SQL Server Management Studio, check the Close existing connections' option:
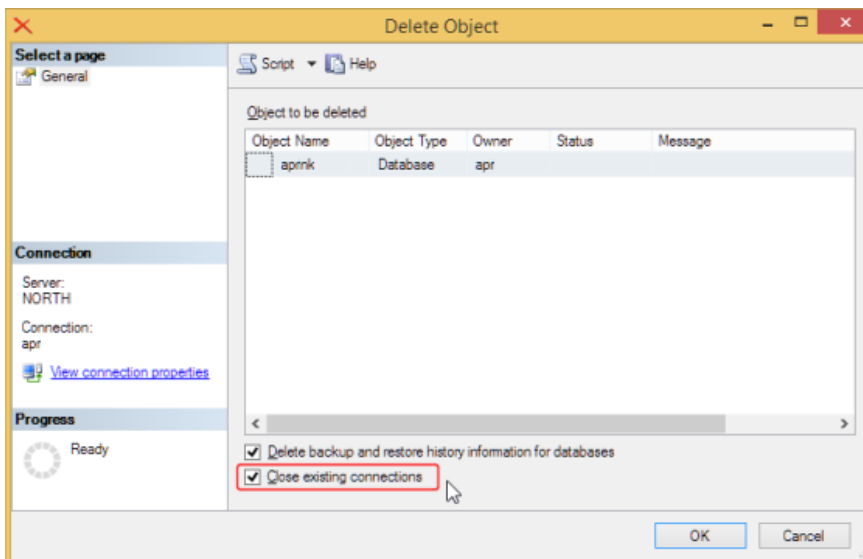
- When deleting a database from the command line, set the database into 'single user' mode to kill off any other connections:

```
sqlcmd -S "localhost,1433" -d master -Q "ALTER DATABASE [apriori_db]
    SET SINGLE_USER WITH ROLLBACK IMMEDIATE; DROP DATABASE
    [apriori_db]"
```

Installing the aPriori Professional Client

Before You Begin

Before you begin installing aPriori Professional:

- Install all the prerequisite software. For more information, see Installing Prerequisite Software.

- Create the aPriori database. Make sure that each client machine has access to the aPriori database.

- Have ready the information that you need to enter during the installation:

  - Installation directory. By default, aPriori is installed to C:\aPriori.

  - Components that need to be installed

  - Document cache location

  - Host name, port number, schema name, username, and password for the aPriori database. In addition, if aPriori is using an Oracle database, you need to know either the SID or the Service Name. If the database is SQL Server, determine whether you use SQL Server or Windows authentication.

  - For Direct Integration mode only, the CAD application startup directory where your local Creo config.pro file is located.

  - Any aPriori properties or Bulk Costing properties that you want to set.

  - Installation type. The type of installation–whether the installation is a fresh install, or an upgrade or "hot fix" to an existing installation–determines whether you need to tell the Wizard how to back up existing files.

Install by Using the aPriori Professional Setup Wizard

The on-premise installation of aPriori Professional 2019 R2 introduces a new installation Setup Wizard. The new Setup Wizard:
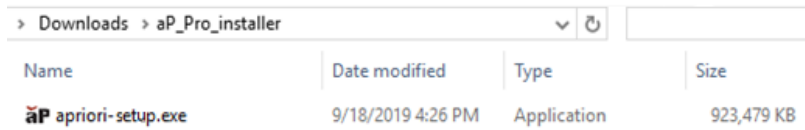
- Automates much more of the installation process than is automated by the wizard for prior releases.

- Displays existing or default values for many configuration settings and allows you to review and modify values during the installation process.

- Allows you to access context-sensitive information for each step in the installation process. To access the information, click **Help**.

Notes about keyboard behavior

- Using **TAB** to navigate to a button or a checkbox and then pressing **Enter** does not always execute the target, even if it is highlighted. The Space Bar sometimes work in this situation.

- To expand/collapse nested items from the keyboard, use the numeric keypad "+" and "-" keys.

Open the aPriori Professional Setup Wizard

1   Navigate to the directory that you extracted the Wizard from the .zip file to.

2   Double-click the installer executable file, `apriori-setup.exe`.

3   Depending on your operating system and any installed virus protection, you may receive one or more executable permission requests or warnings. To permit the Setup Wizard to run on your system, click through requests and warnings.

Note: At each stage of the installation setup, the window that appears and the information that it contains both depend on the configuration choices that you make during the setup process.

Welcome screen
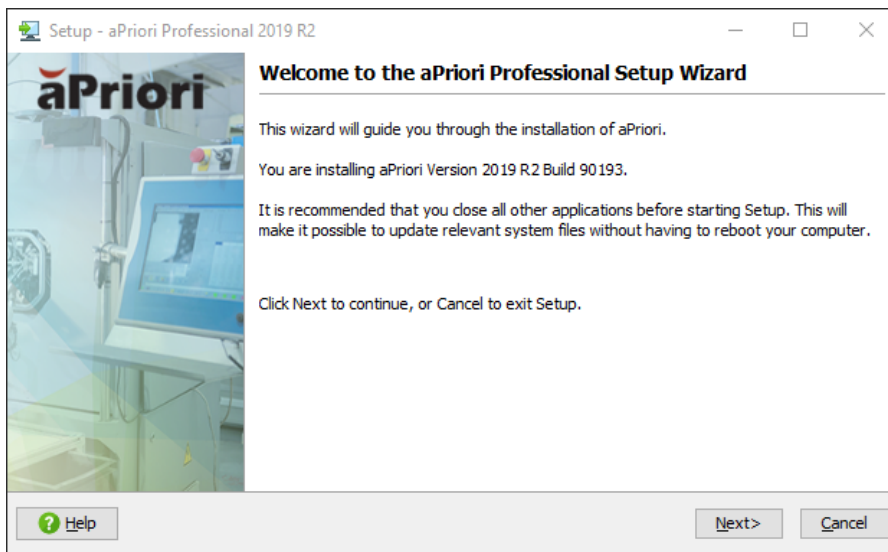
The Setup Wizard guides you through the installation of aPriori Version 2019 R2 Build XXXXX.

During the installation, the Setup Wizard creates and populates these initialization (`.ini`) and configuration (`.properties`) files in the top level of the installation directory:

- `aPriori-install-options.ini` – Records all the values you set during the installation (except properties) and can help you perform subsequent installations or re-installs.

- `apriori.properties` – Records any properties that you specify during the installation.

To allow the Setup Wizard to create and update the initialization and properties files without rebooting your computer, close other applications before proceeding with the installation.

To begin the installation process, press **Next**. To instead exit Setup, click **Cancel**.
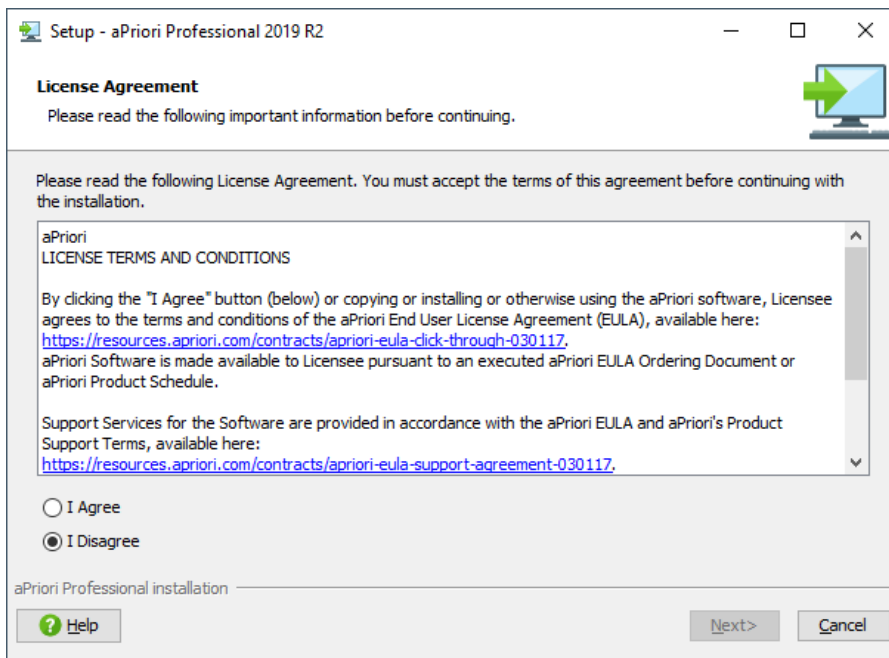
License Agreement

The License Agreement window allows you to review the terms for installing and using aPriori Professional.

After reading the agreement, to further research any issues, concerns, or questions that remain, select **I Disagree** and then click **Cancel**.

If you agree with the terms, to proceed with the installation, select **I Agree** and then click **Next**.

Select Destination Directory
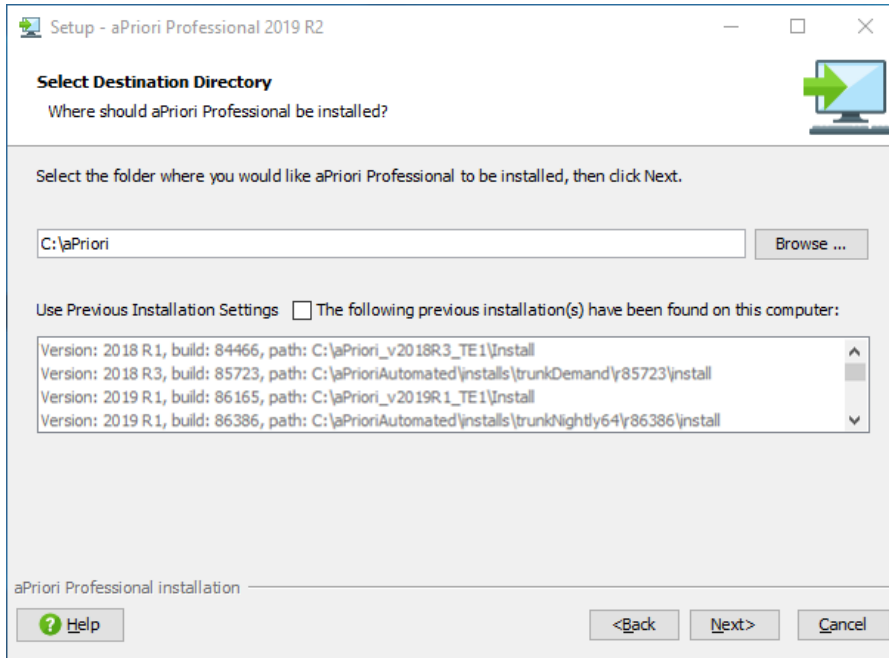
The Setup Wizard allows you to select the destination directory for the aPriori Professional installation. The Wizard also lists the version and location of any prior installations, which it identifies by examining your environment. The directory for each prior installation includes the initialization (`.ini`) settings file for that installation.

For the new installation, you can:

- Use a preloaded initialization file.
- Create a new initialization file based on values that you specify during the installation.
- Use the initialization file from a prior installation.

1   Enter, or **Browse** to, the directory where you want the new installation to reside.

2   To use:

   a.   A preloaded initialization file or to create a new initialization file based on values that you specify during the installation, click **Next**

   b.   An initialization file from a prior installation, select the **Use Previous Installation Settings** check box, select the prior installation from the list, and click **Next.**

> **Commented [SS19]:** capitalize "Wizard" for consistency?

> **Commented [SS20]:** Is this supposed to be in a different ol than the item above? 1 -> 68

> **Commented [LC21R20]:** No.

The Setup Wizard searches the destination directory that you specify. If the destination directory does not yet exist, the Setup Wizard asks if you want to create it. To:

- Give the Setup Wizard permission to create the directory, click **Yes.** If you cancel the installation before it is complete, the Setup Wizard does not create a new directory.

- Deny permission and then enter or browse for a different destination directory, click **No**.

Setup	✕
ⓘ Directory C:\aPrioriy does not exist. Create?	
	Yes No
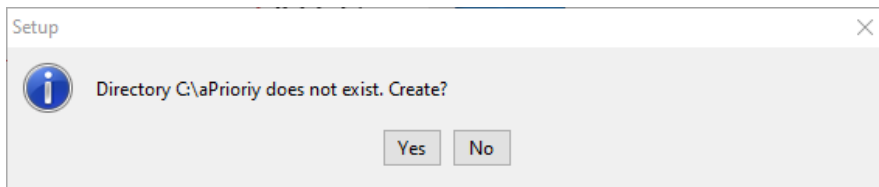
Alternatively, if the destination directory already exists, the Setup Wizard then determines if the directory is empty. If the directory is:

- Empty, the installation proceeds.
- Not empty, the Setup Wizard asks how you want to proceed.

Setup	✕
ⓘ This directory is not empty. Do you want to clean up the contents of this directory before installation? Or should the installer backup the contents of this directory before continuing?	
Change directory Clean and continue Backup and Continue	
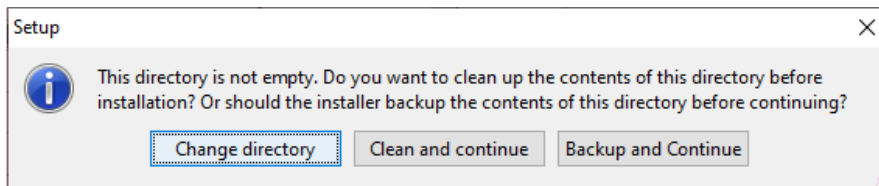
Commented [SS22]: I know there's nothing we can do now, but the lack of consistency in button text capitalization kills me

Commented [LC23R22]: Added to jira issue,

The options are:

- **Change directory** – The Setup Wizard allows you to enter or browse for a new installation directory. Again, if you enter a name for a new directory, but cancel the installation before it is complete, the installer does not create the new directory.
- **Clean and continue –** The Setup Wizard deletes the directory folder and all the content of the directory without making a backup. If you choose this option, before the installation begins, the Setup Wizard warns you once that it is about to delete the directory folder and all the content therein. Once the installation begins, you cannot cancel the deletion of the files.
- **Backup and continue** – The Setup Wizard makes a backup copy of the existing directory. The naming convention for the root folder is appended to contain the version number of the directory that is backed up: `aPriori_Old_bckup_2019 R1 SP2_89131`.
- If you cancel the installation before it is complete, the Setup Wizard does not create a backup copy.

Select Components
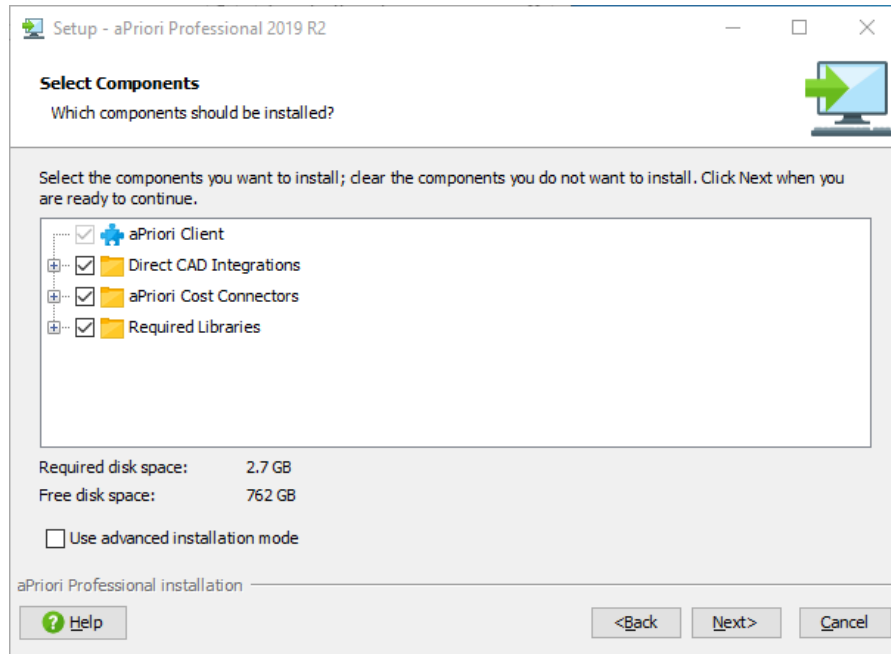
In the **Select Components** window, the Setup Wizard allows you to select which components are installed and to use an advanced installation mode. You can expand each component category node to select or deselect individual components for installation.

Although you cannot opt out of the aPriori Client installation, you can choose whether to install components from these three categories:

- **Direct CAD Integrations** – Select this option if you plan to use aPriori as a Creo® toolkit application.

  The direct CAD integrations component is **Creo & Pro/ENGINEER**

- **aPriori Cost Connectors** – Select the cost connector CAD format that matches the types of files that you intend to cost. If you do not intend to use aPriori as a toolkit application, always select the option for STEP/IGES in addition to the proprietary CAD system you use.

  The aPriori cost connector components are:

  - **Creo & Pro/ENGINEER**
  - **CATIA V5**
  - **Unigraphics NX**
  - **SolidWorks**

Commented [SS24]: ENGINEER capitalized

Commented [SS25]: ENGINEER capitalized

Commented [SS26]: CATIA

- o **Parasolids**
- o **Autodesk Inventor**
- o **STEP/IGES**
- o **Solid Edge**
- o **JT**
- ▪ **Required Libraries** – aPriori Professional functions properly only if all the components in the required libraries folder are installed. If you want to decrease installation time, you can check to see if any of the components are already installed and then clear the check boxes for those components. However, it typically takes more time to determine if you have a component already installed than it does to have the aPriori Professional installer reinstall the component.

  The required library components are:

  - o **Microsoft VC++ 2010 Runtime**
  - o **Microsoft VC++ 2012 Runtime**
  - o **Microsoft VC++ 2013 Runtime**
  - o **Microsoft VC++ 2015 Runtime**
  - o **Dassault VC10 Prerequisites**
  - o **Dassault VC11 Prerequisites**

If you are unsure about what to install, select all the components. Installing all the components requires additional installation time and disk space, but it ensures that everything that is required for aPriori to function properly is installed.

The Setup Wizard calculates and displays how much disk space is required for the installation of all the components. It also displays how much free space there is on the disk that contains the installation directory.

To specify aPriori and Bulk Costing properties later in the installation, select the **Use advanced installation mode** check box.

After you make your choices for the component and advanced mode installation options, to continue the installation, click **Next.**

> **Commented [SS27]:** than ^it does

> **Commented [LC28]:** VC = Visual C. Define operationally for 2020 R1

Document Cache Configuration

Document Cache – To improve aPriori performance, save a local version of your VPE data in a cache folder.

Saving VPE data locally eliminates the need to extract large amounts of data from the database each time a part is costed. Extracting large amounts of data from the database can diminish performance, especially when the clients and the database server are in different LANs.

You can specify the location of the document cache folder during client installation; choose one of these three options:

- **User Profile –** The cache location is the home directory of the user, typically `C:\Users\<username>\appdata\local\apriori`. This option is the default.

- **aPriori Installation Directory –** Select this location to place the cache in the same folder as all the aPriori application files. Before you select this option, make sure that the user has write permission to that location.

  Note: By default, in Windows 7 and later, users do not have write permission to the '`Program Files`' folder.

- **Custom –** Enter or browse for a custom location for the document cache directory. If you install aPriori locally on each computer, but want users to share a common cache location, use this option. The cache location should be a network share that is located within the same LAN as the users.

  If you choose this option, only a single cache location requires updating when VPEs are updated. However, during costing, each user could experience slightly lower performance because the data pull is across a network.
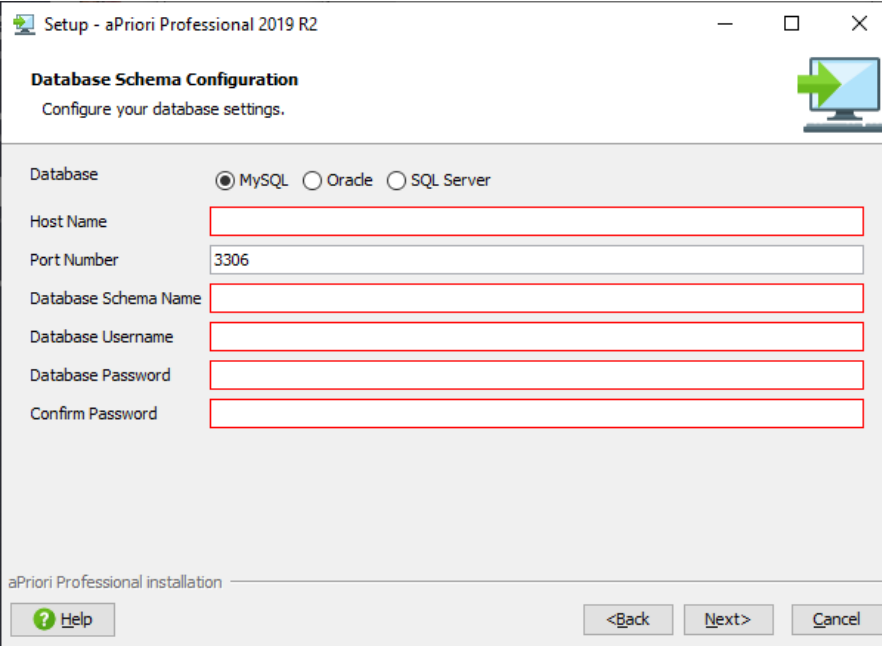
Note: The user must have read/write access to the document cache directory. Therefore, if you select a network location or the Program Files directory on the local computer, the Windows folder permissions must be set to allow read/write permission.

By default, the installer enables the document cache cleaner. Disable this option only if you set up a shared document cache and automate the updating of the document cache. To disable the option, clear the **Enable Document Cache Cleaner** check box.

To automate the updating of the document cache, run the updateDocCache.cmd script in the `aPriori\bin\` directory. Before running the script, edit it and add the aPriori user ID and a password. You can set up the script to be run by a Windows Scheduled Task on a periodic basis.

Database Schema Configuration

The figure shows the configuration fields for a MySQL database. The configurations for Oracle and SQL Server databases include some different fields.

The fields that are included on this dialog depend on the database management system you specify. Select one of the **Database** options, **MySQL**, **Oracle**, or **SQL Server**, and then enter values in the related fields.

    MySQL– Refer to *MySQL Installation and Configuration*.

- **Host Name –** Name of the server where MySQL is installed and hosts the database.

- **Port Number –** The default value is 3306. Change the value to something different only if you changed it during the MySQL installation.

- **Database Schema Name –** Name specified during the creation of the database schema. The typical value is `apriori`. Variations on the typical value also include software and company information such as version, geographic location, or division.

- **Database Username –** Username specified during the creation of the database schema.

- **Database Password –** Password specified during the creation of the database schema.

Oracle – Refer to *Oracle Installation and Configuration* or see your database administrator.

- URL Style Name **–** Select either **SID** or **Service Name**.

- **Host Name –** Name of the server where Oracle is installed and hosts the database.

- **Port Number** – this is typically 1521

- **Database SID/Service Name** –SID or service name of your database

- **Database Username** – enter the username of the aPriori database as configured by your database administrator

- **Database Password** – enter the password of the aPriori database as configured by your database administrator

SQL Server – Refer to *SQL Server Installation and Configuration* or see your database administrator.

- **Host Name –** This is the name of the server where SQL Server was installed and hosts the database.

- **Port Number** – this is typically 1433

- **Database Instance Name** – enter name of your database as configured in the SQL Server chapter

- **Authentication Style –** Select **SQL Server** or **Windows**, as configured in the SQL Server chapter

- **Database Username** – enter the username for the aPriori database as configured by your database administrator

- **Database Password** – enter the password for the aPriori database as configured by your database administrator

- Click **Next** when done.

Schema Verification

When you click **Next**, the Installer tries to connect to the schema that you specified. If the connection fails, this error is generated:

```
Could not create JDBC connection:
```

The second half of the message contains specific details about the failure. Some common errors and solutions are:

Error	Solution
The TCP/IP connection to the host xxx, port yyy has failed **The Network Adapter could not establish the connection**	Verify that the specified Database type is correct. Also ensure that is available and accessible through your firewall
Communications link failure	Verify that the specified Host Name and Port Number are correct. Check that your Internet connection is up.
Unknown database "xxxx":	Verify that the specified Database Schema Name is correct.
Access denied for user "nnn@mmm" (using password: YES)	Verify that the specified Database Username is correct. Also verify that the specified values in the Password fields are correct and equal.

Oracle ONLY – SID vs. Service Name

The Wizard accepts either Oracle SID or Service Name on this window.

SQL Server ONLY – Authentication Style

Enterprise Platform supports two kinds of authentication:

- SQL Server Authentication
- Windows authentication

When Windows is selected, the credentials fields are disabled because they are only required for SQL Server authentication style.

Memory Configuration

Setup - aPriori Professional 2019 R2   —   □   ✕

Memory Configuration
Configure memory setting for the aPriori Professional client.

Java Heap Space (-Xmx), GB   4GB   10GB   16GB   22GB   28GB 30GB

Selected: 4.00 GB Heap Size

Free Memory: 17.97 GB / Total Memory: 31.71 GB

aPriori Professional installation

⊙ Help   <Back   Next>   Cancel
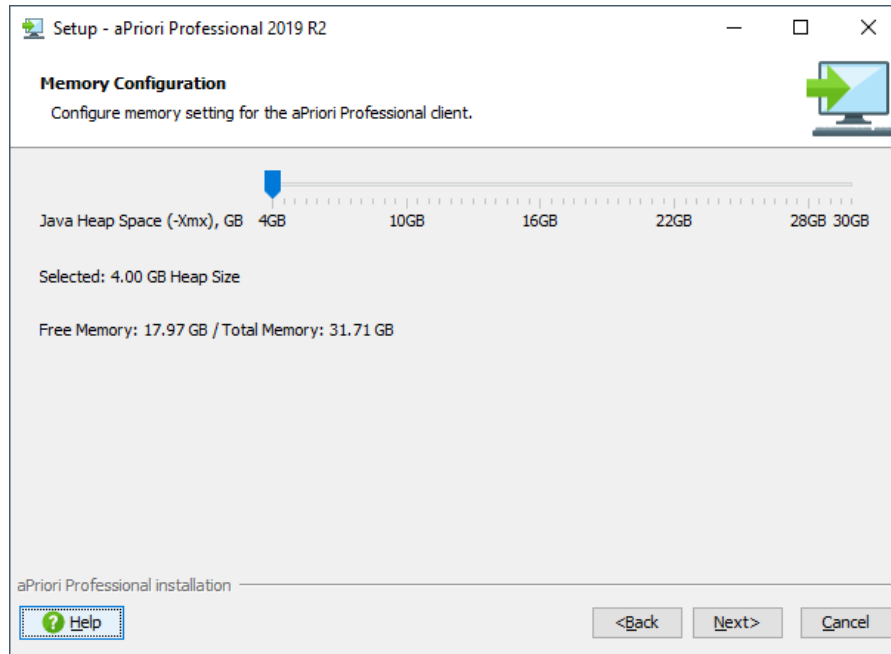
The Memory Configuration settings allow you to specify the maximum amount of machine memory in the run stand-alone file to dedicate to the Java heap space.

The minimum setting is 4 GB. A typical setting is between 4 GB and 8 GB. A default setting of more than 4 GB indicates that, for this installation, you are using a setting from a either a preloaded initialization (.ini) file or a previous installation.

The installer calculates and sets the maximum amount that you can specify as

$$Xmx_{max} = Xmx_{total} - 2\ GB$$

Where:

- Xmx_{max} is the maximum dedicated heap space, in GB.
- Xmx_{Total} is the total available heap space, in GB.

To change the maximum amount of machine memory to devote to the Java heap space, adjust the position of the slider. To adjust the value incrementally by ±0.01 GB, drag the knob to the right or left. To adjust the value by a factor of ±50 GB, first click the Memory Configuration window and then use the arrows on your keyboard to move the knob.

Caution: Assigning too much memory to heap can disable your machineHeap. On the other hand, if Java requires more memory than you specify, a memory error is generated.

Commented [SS33]: should this be here?
Commented [LC34R33]: Yes.
Commented [SS35]: GB for consistency
Commented [36]:

For a complete discussion of aPriori Professional heap size requirements, see Chapter 9, Adjusting Heap Memory in the 2019 R2 (or later) aPriori Professional *System Administration Guide.*

Commented [37]:

Creo and Pro/ENGINEER Configuration
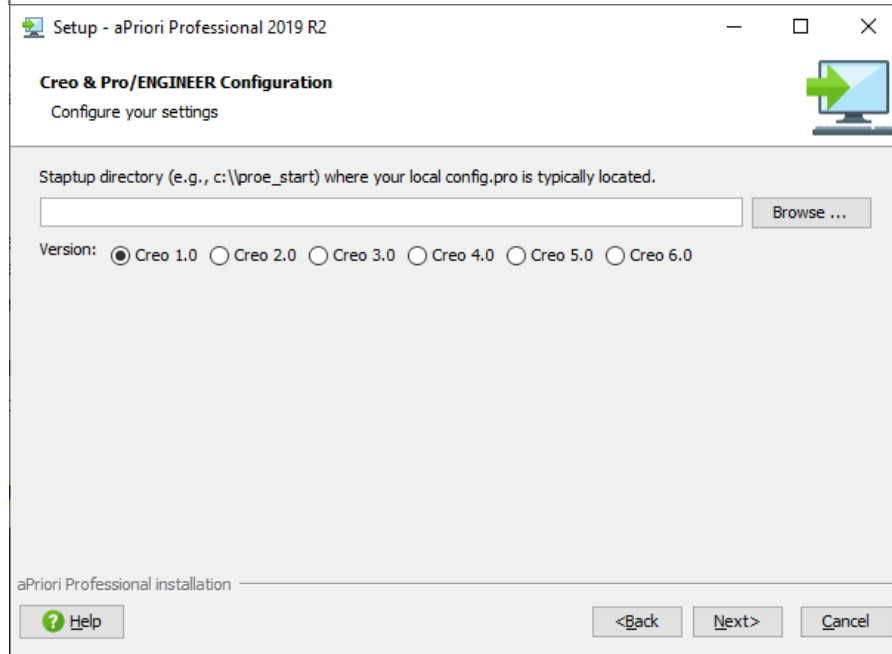
Enter, or **Browse** for, the PTC Creo startup directory on your machine. Then, select the version that matches the installed Creo software.

To determine the location of the directory, in Creo:

1. Select **File > Help > System Information**.

2. Scroll to the **Installation Directories and Command Information > Directories** section.

3. The startup directory is listed as the **Creo Parametric Startup Directory**.

To determine the version number, in Creo:

1. Select **File > Help > System Information**.

2. Scroll to the **License Information** section. The version number is listed as the **Version**.

aPriori Properties Configuration
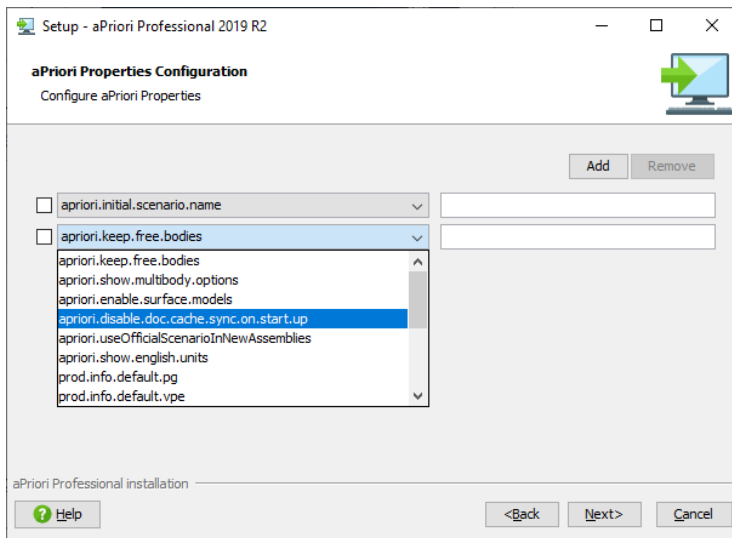
The setup wizard displays the aPriori Properties Configuration settings window only in the advanced installation mode. To enable the advanced mode, navigate back to the Select Components window and select the **Use advanced installation mode** check box.

Selecting the advanced installation mode also allows you to specify Bulk Costing and Analysis Plugin properties later in the installation.

Any properties that appear when this configuration window first opens are properties that the setup wizard obtained from a preloaded initialization (.ini) file or a previous installation. Although you can replace the value of a preset property in the configuration field, the preset value takes precedence over the value that you replace it with if the preset value is already saved to the database.

Properties that you specify are added to the aPriori.properties file in the installation directory.

Specified properties that are not already defined in the database are saved to the database once aPriori Professional is started,

Note: Properties that are saved in the database always take precedence. Therefore, if you are upgrading or re-installing an installation where `apriori.initial.scenario.name` (for example) is already set equal to "start" and has been saved to the database, specifying a new value on this screen (or in the apriori.properties file) have no effect.

To remove a property, select the adjacent check box and click **Remove**.

To add a property and specify its value:

1. Click the **Add** button.

2. Highlight and click the property that you want to add from the menu of customer-definable properties that appears.

3. Specify a value for the property in the field on the right.

For each property that you want to specify, repeat the process. In all, there are 17 properties that you can specify. If you add all 16 properties, the **Add** button is disabled.

- apriori.initital.scenario.name

- apriori.keep.free.bodies

- apriori.show.multibody.options

- apriori.enable.surface.models

- apriori.disable.doc.cache.sync.on.start.up

- apriori.useOfficialScenarioInNewAssemblies

- apriori.show.english.units

- prod.info.default.pg

- apriori.info.default.vpe

- apriori.info.default.material

- apriori.info.default.material.catalog.name

- apriori.info.default.annual.volume

- apriori.info.default.production.life

- apriori.info.default.batch.size

- apriori.info.default.use.vpe.for.all.processes

- cost.table.decimal.places

- viewer.driver

For more information about aPriori Properties, see Chapter 10, "Properties Files", in the aPriori Professional *System Administration Guide.*

Bulk Costing Plug-In Properties Configuration
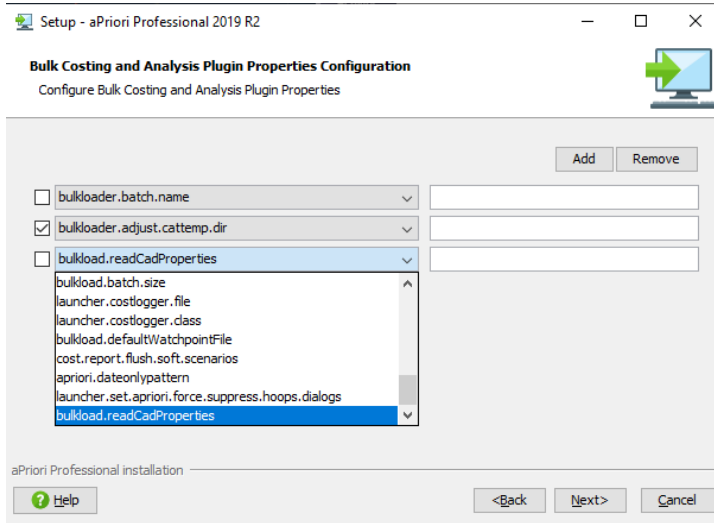
The setup wizard displays the Bulk Costing and Analysis Plugin Properties Configuration settings only in the advanced installation mode. To enable the advanced mode, navigate back to the Select Components window and select the **Use advanced installation mode** check box.

Selecting the advanced installation mode also allows you to specify aPriori properties earlier in the installation.

Any properties that appear when this configuration window first opens are properties that the setup wizard obtained from a preloaded initialization (.ini) file or a previous installation. Although you can replace the value of a preset property in the configuration field, the preset value takes precedence over the value that you replace it with if the preset value is already saved to the database.

Properties that you specify are inserted into the Bulk Costing properties file, which is typically located at:

```
C:\aPriori2\ext\analysis-purchasing-module\plugin.properties
```

To remove a property, select the adjacent check box and click **Remove**.

To add a property and specify its value:

4. Click the **Add** button.

5. Highlight and click the property that you want to add from the menu of customer-definable properties that appears.

6. Specify a value for the property in the field on the right.

For each property that you want to specify, repeat the process. In all, there are 30 properties that you can specify. If you add all 25 properties, the **Add** button is disabled.

The properties that you can specify are:

- bulkloader.adjust.cattemp.dir

- bulkloader.batch.name

- bulkload.clear.existing.inputs

- bulkload.ignore.validation.errors

- launcher.debug.mode

- launcher.debug.port

- launcher.debug.suspend

- launcher.max.memory

- launcher.log4j.configuration

- launcher.logs.dir

- launcher.configure.p_schema

- launcher.cost.timeout.seconds

- launcher.filter.perfomance.logs

- launcher.jvmArgs

- bulkload.concurrent.loader.count

- bulkload.rmi.port

- launcher.set.apriori.cad.disable.plastic.molding.thickness

- launcher.set.apriori.cad.id.persistency.AcisEngine.CATIA

- launcher.set.apriori.enable.surface.models

- launcher.set.apriori.keep.free.bodies.

- launcher.set.apriori.cost.free.bodies.as.assembly

- launcher.set.apriori.enable.doc.cache.cleaner

- bulkload.batch.size

- launcher.costlogger.file

- launcher.costlogger.class

- bulkload.defaultWatchpointFile

- cost.report.flush.soft.scenarios

- apriori.dateonlypattern

- launcher.set.apriori.force.suppress.hoops.dialogs

- bulkload.readCadProperties

Commented [SS44]: I counted 30

Commented [LC45]:

For more information about Bulk Costing properties, see Chapter 10, "Properties Files", in the aPriori Professional *System Administration Guide.*

About to Install
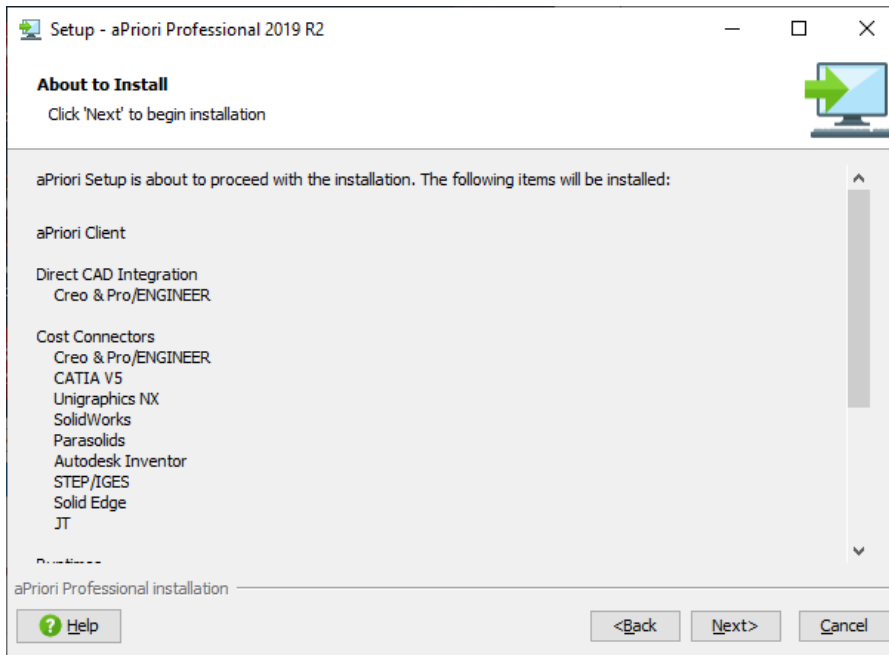
The setup wizard alerts you that the installation is about to begin and lists the components that it is going to install.

To add or remove installation components, navigate back to the Select Components window and select or clear the checkbox for the relevant components.

To start the installation, click **Next**.

After you click next, if you are installing to a:

- New directory – You can cancel the installation while it is in progress

- Preexisting directory that you chose to backup – You can cancel the installation while it is in progress, but the installer does not backup the file.

- Preexisting directory that you chose to clean – Before the installation begins, the Setup Wizard warns you that it is about to delete the directory folder and all the content therein. If you choose to proceed, once the installation is in progress, you cannot cancel the installation or the deletion of the files.

Installation in Progress

Setup - aPriori Professional 2019 R2   —   □   ✕

Installing
Please wait while Setup installs aPriori Professional on your computer.

Extracting files ...
apProECreo2_64.dll

aPriori Professional installation

[? Help]   [Cancel]
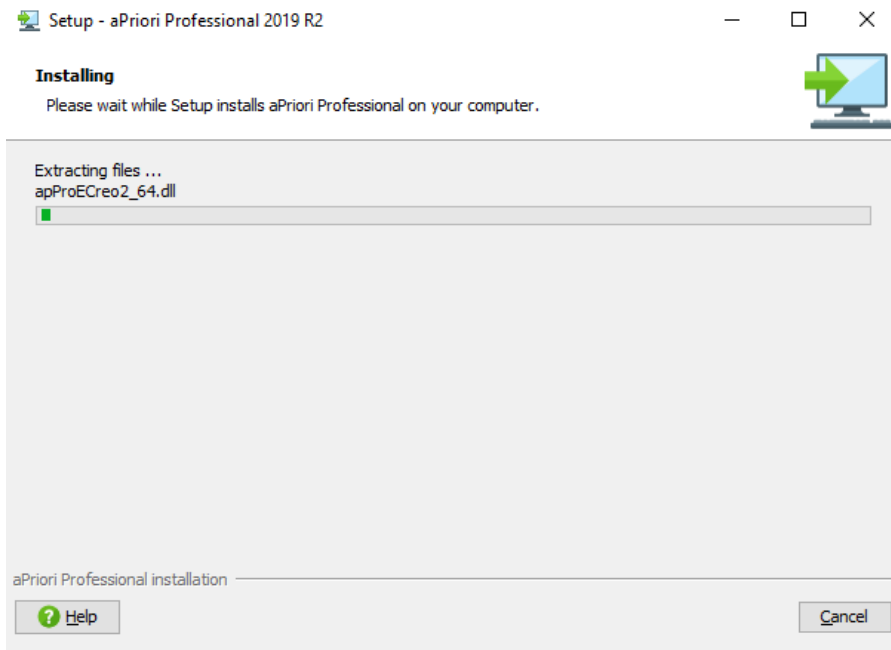
During the installation, the progress bar shows the approximate pace and state of the installation.

To stop the installation while it is in progress, click **Cancel**.

Warning: If you are installing to a preexisting directory that you chose to **Clean and continue,** you cannot cancel the deletion of the directory files or the installation of aPriori Professional while it is in progress.

Commented [46]:

Installation Done
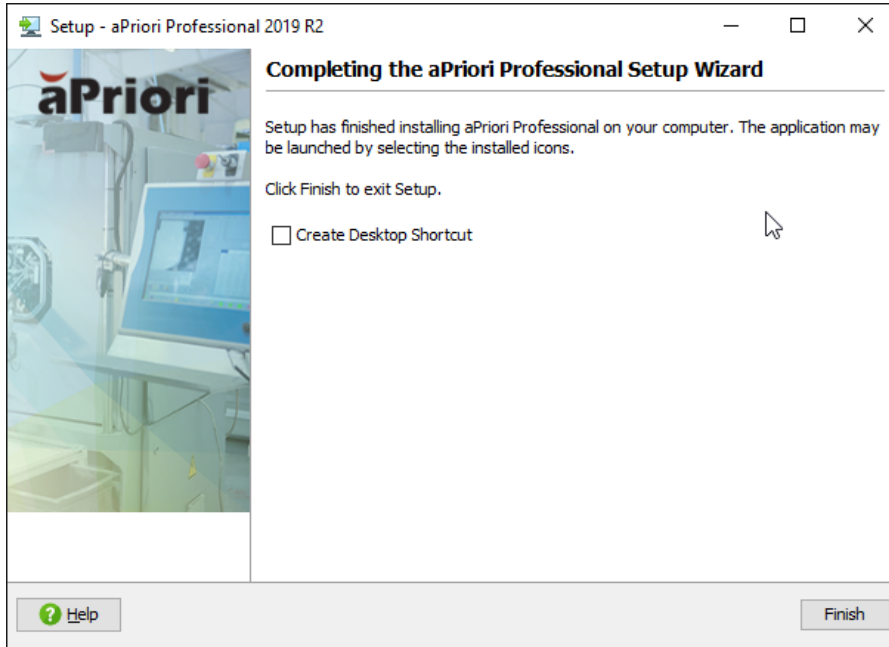
The Setup Wizard alerts you when the installation is complete.

To add a shortcut for aPriori Professional to your computer desktop, select the **Create Desktop Shortcut** checkbox.

To finalize the installation process and exit the Setup Wizard, click **Finish.**

Faster subsequent installations

During the installation, the initialization file is placed in the installation folder. The file is named `aPriori-install-options.ini` and it contains all the inputs from the installation.

To make future installations faster and easier, place the initialization file in the folder that contains the `apriori-setup.exe` file. Then, during the next installation, all the inputs are pre-populated for each Setup Wizard window and the user just has to click **Next** to proceed through the installation.

The initialization file can also be used to install from a command line. For more information, see *Silent Client Install*.

Uninstalling

To uninstall aPriori Professional, you can use `<apriori_install>\uninstall.exe`:

Uninstaller Welcome screen
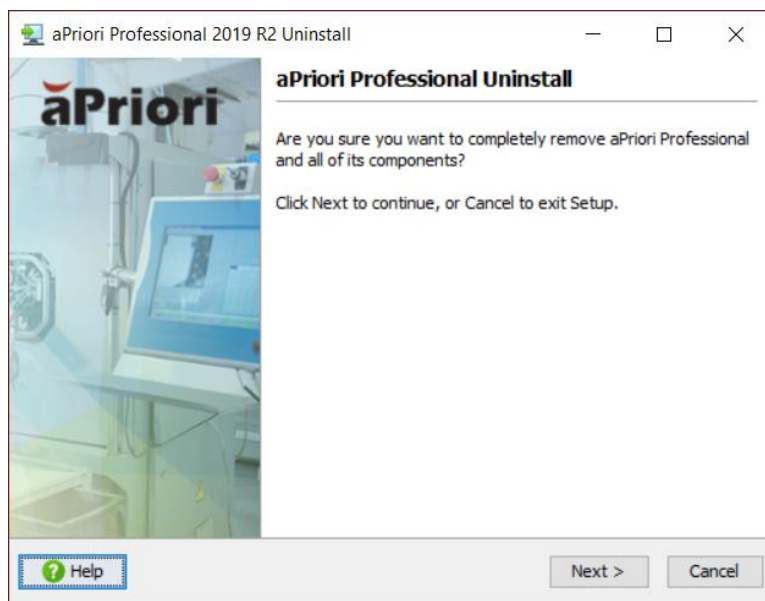
Click **Next** to start the uninstallation.

Alternatively, you can choose to use Windows **Add/Remove Programs** from the Control Panel. After doing so, ensure that all the files are removed. If any are not, delete them manually.

Uninstall in Progress
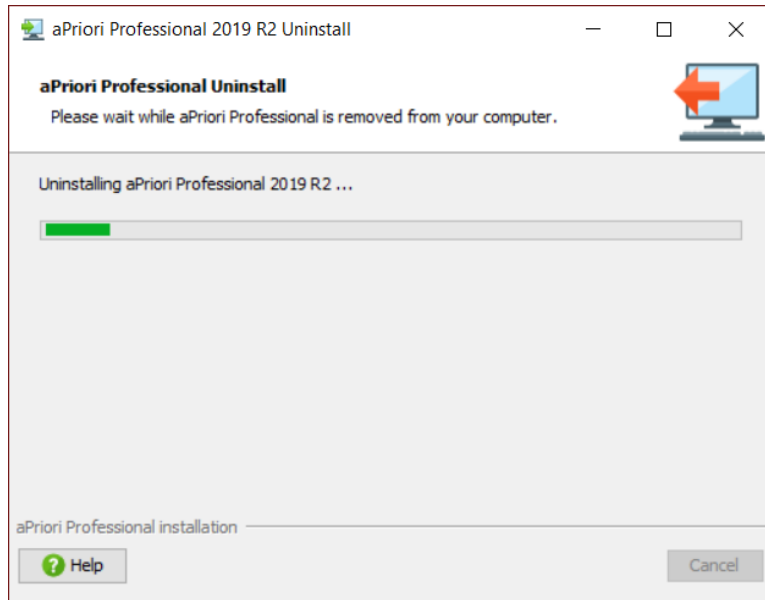
The progress bar shows you where the status of the uninstallation process.

Uninstall Done
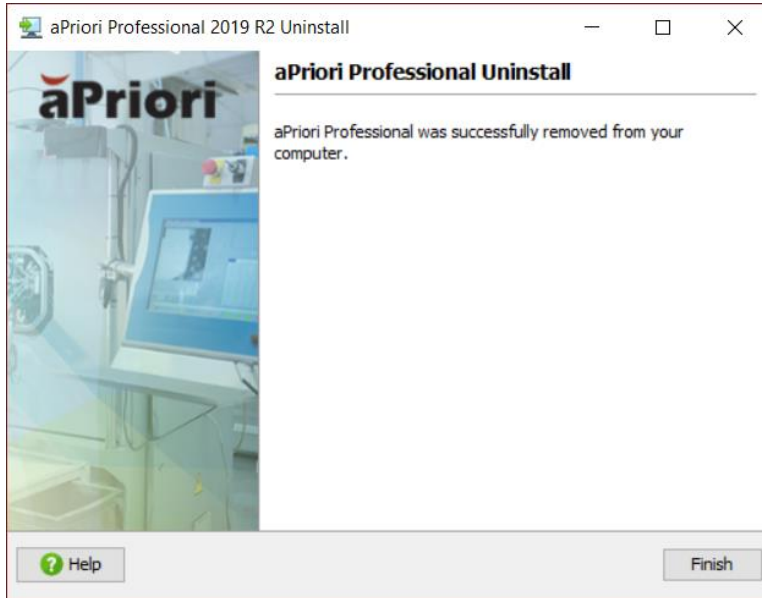
This screen appears when the uninstaller is done. Click Finish to delete any remaining files and close the installer.

More on File Permissions

Sometimes the permissions set at the aPriori installation folder level do not get applied to the files in the folder. aPriori does not run (in CAD-I or direct integration mode) if the logged in user does not have read and execute permission to the files in the folder. You can test this by opening the hibernate.properties file in the aPriori installed directory. If you cannot open the file, follow these steps to force the files within the directory to have the same permissions as the top-level directory:

1   Open the properties for the folder and click the **Security** tab.

2   Add or select a group which contains the users who need to run the application.

3   The default permissions are sufficient: Read & Execute, List folder Contents, and Read.

4   Click **Advanced**.

5   Check the box next to "**Replace permission entries on all child...**" and make sure the box is checked next to "**Inherit from parent the permission entries...**"

6   Click **OK**

7   Click **Yes**

8 Check that you can open the `hibernate.properties` files from the client.

Silent Client Install

aPriori can be installed without user interaction. This is done by installing once using the normal interactive installer. This creates a configuration file which can then be used as the input to the silent install.

To install aPriori without user interaction:

1 Install aPriori the first time using the interactive installer as described at *Installing the aPriori Professional Client*. When it is finished, a file named `aPriori-install-options.ini` is present in the aPriori installation folder. This file contains the configuration options required by the silent installer.

2 Copy `apriori-setup.exe`, and `aPriori-install-options.ini` to a file share that can be accessed from the client machines on which aPriori is being installed.

- `apriori-setup.exe` is the same file that you used to install aPriori on the first machine.

- `aPriori-install-options.ini` is the file created at the top level of the aPriori installation directory on the server machine during aPriori installation.

3 Open a command window and `cd` to the file share where you have copied the files. Run the installer from the command line (or a batch script) with the following syntax:

```
apriori-setup.exe -q
```

The "-q" specifies that the installer should run in "quiet" mode and take its values from the .ini rather than by prompting the user interactively.

NOTE: The syntax for this command is different from the syntax for the same command for the installation of version 2019 R1 SP2 and earlier versions of aPriori Professional.

Here are some other parameters that you can specify for debugging purposes and to generate a log file:

```
-Dinstall4j.detailStdout=true
```

```
-Dinstall4j.debug=true
```

```
-Dinstall4j.keepLog=true
```

When installation is complete, start aPriori on each machine. For details, refer to *Configuring and Starting aPriori.*

Configuring and Starting aPriori

This chapter includes the following topics:

- Load the License File
- Add aPriori User Accounts
- Starting the CAD-Independent Client
- Starting the Direct Integration Client
- Configuring the Test and Training Databases

Load the License File

You should have received a license file along with the installation media. License files typically follow the naming convention: aPrioriLicense_YYYMMDD_customer name.apz

- Some web browsers change the file extension of the license file from .apz to .zip. If this happens you can leave the extension as .zip.
- When you load the license, you must also create the first user.
- The command is case sensitive
- Put quotes around any parameters that have a space in them

To load the license:

1   Open a command prompt at the \bin directory in your aPriori installation folder.

2   Type the command loadlicense.cmd and press enter. This command shows you the help for the command.

3   Type the following command and press enter:

```
loadlicense.cmd -DlicenseFile=<license_file_full_path> -
    DlicenseUsername=<first_user_acct> -
    DlicenseFullname=<first_user_name>
    -DlicensePassword=<first_user_passwd>
```

For example, to load a license file named "aPrioriLicense_20130501_acme.apz" located at
C:\aPriori, and your full name is "John Doe" with a username of johndoe with a password of 987XYZ!, the correct command is:

```
loadlicense.cmd -
    DlicenseFile=C:\aPriori\aPrioriLicense_20130501_acme.apz
    -DlicenseUsername=johndoe -DlicenseFullname="John Doe"
    -DlicensePassword=987XYZ!
```

Note: As usual with the Windows command line, don't forget to enclose in double quotes any paths or arguments that include spaces.

Add aPriori User Accounts

User accounts must be added before users can start using the system. Refer to the aPriori *Administration Guide* for details about adding additional aPriori user accounts.

Starting the CAD-Independent Client

To start the CAD-independent Client, you can either:

- Double-click the **aPriori Standalone** icon on your computer desktop: (). (The **aPriori Standalone** icon appears only if you added it to your desktop during the installation.)

- Execute the command file:

```
C:\aPriori_Installation_Directory\bin\runStandaloneApriori.cmd
```

Starting the Direct Integration Client

Typically, you start the Direct Integration Client directly through the CAD system. When you open the CAD system, aPriori starts as the Cost Ticker in Direct Integration mode. If prompted, enter your aPriori username and password.

To expand to aPriori Desktop

In aPriori Cost Ticker, click **Switch to full view** button at the left of the menu bar:
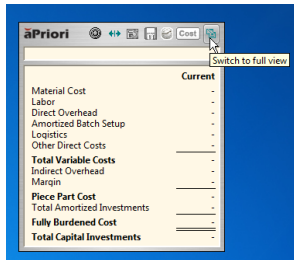
To manually disconnect from the CAD system:

Within aPriori, click the "connected" status icon: .

To manually connect to the CAD system:

Within aPriori, click "disconnected" status icon: .

Configuring the Test and Training Databases

The following steps need to be performed only once:

1 From the aPriori client click **Tools > System Admin Toolset**.

2 Click the **System Administrator** button:

3 Click **Deployment – Default** in the navigation pane:
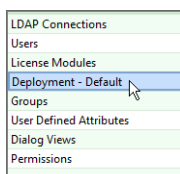
4 In the **Deployment Name** field, change "Default" to "Production".

5 Click **File > Create Deployment**.

6 In the **Deployment Name** field enter "Test".

7 In the VPE Schema **Name** field enter "Test VPE".

8 Uncheck the VPE Schema **Inherits from Master** checkbox.

9 In the VPE Schema **Database Identifier** field change the existing value to "apriori_test".

10 In the Component Schema **Name** field enter "Test Scenarios".

11 Uncheck the Component Schema **Inherits from Master** checkbox.

12 In the Component Schema **Database Identifier** field change the existing value to "apriori_test".

13 Repeat the above process to create a deployment for training, replacing all instances of "test" with "training".

14 When done, click the **Publish Changes** button in the toolbar:
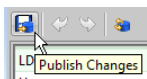
Installing the CAD Plugin

The "Cost in aPriori" plug-in for CATIA®, SolidWorks®, and NX® allows users to cost a component in aPriori by clicking a toolbar button within the CAD application. This option is licensed separately, and therefore you only receive the installation files if you purchased this option.

Note: aPriori does not ship the plug-in for NX. A Professional Services engagement is required in order to create the NX plug-in installer. Please contact your aPriori Services representative.

Pre-requisites

- CATIA, SolidWorks, or NX must already be installed on the computer.
- You must have Administrative rights on the computer.
- If you are using NX:
    - You must attain the installer files from your aPriori Services representative.
    - You must verify that your device drivers are compatible.

NOTE If your devices drivers are not compatible, functionality is diminished, as generated error messages indicated. As a temporary workaround, to complete a process that generates an error that is related to incompatible device drivers, you can temporarily disable the incompatible device.

Installation

1   Launch the MSI installer that matches the CAD system and version. For example, if you are running SolidWorks 2012 on a 64-bit computer, you would launch `CostInAPriori_for_SW2012_Installer_x64.msi`.
    Note that the files designated "CATIA_V5R21" are also for CATIA V5 R20.

2   Click **Next** at the welcome screen.

3   For SolidWorks and NX, select the location where you want to install the plug-in.

    For CATIA, the plug-in is installed directly in the CATIA installation folder.

    Browse for and select the location of the aPriori installation folder and click **Next**. You must specify the correct location of the aPriori installation folder, or the plug-in will not function.

4   Click **Install**.

5   Once the installation is complete, click **Finish.**

After installing, there is a new toolbar button with the aPriori logo. In CATIA, you may need to enable the button from the **View -> Toolbars** menu option.

Editing the Configuration

If the location of your aPriori installation changes, you need to update the plug-in to point to the new location. You can do this by selecting **Cost in aPriori > Options** from the toolbar of your CAD application. In CATIA this is in the **Tools** menu.

You can also edit the aPriori installation location by editing the properties file. The location of this file depends on your operating system. For example, for Windows 7, the location is:

```
<user_home>\AppData\Local\aPriori
```

where `<user_home>` is typically `C:\users\<username>`

This file is named `costinapriori<CAD_system_name>.properties`. For example, if you are using SolidWorks, it is named `costinapriorisolidworks.properties`.

Important: Performance is slow if the `<user_home>` directory is a network drive. Edit the properties file above to specify a temp location on the local hard drive.

Silent Installation

Since the installer is an MSI package, you can use **msiexec** to run the installation silently. **msiexec** must be run as an administrator.

Note: If you have more than one installation of CATIA installed, do not use the silent installer because it is not able to determine which installation to use. Instead, use the interactive installer because it prompts you to select the correct installation.

To install silently

Enter the following at the command line:

```
msiexec.exe /i "<msi_file_full_path>"
    APRIORILOCATION=<aPriori_install> /quiet
```

For example:

```
msiexec.exe /i
    "C:\installfiles\CostInAPriori_for_SW2012_Installer_x64.msi"
    APRIORILOCATION=C:\aPriori /quiet
```

To uninstall silently

Enter the following at the command line:

```
msiexec.exe /x "<msi_file_full_path>" /quiet
```

For example:

```
msiexec.exe /x
    "C:\installfiles\CostInAPriori_for_SW2012_Installer_x64.msi"
    /quiet
```

Installation Checklist

Use the following checklist to make sure you have not missed any of the steps in the installation.

Database

- Installed MySQL, Oracle, or SQL Server, specifying all the recommended values and settings [[xxx]]
- Created apriori schema
- Created apriori_test schema
- Created the apriori_training
- Assigned permissions to apriori schema
- Assigned permissions to apriori_test schema
- Assigned permissions to apriori_training schema
- Imported production database with license into apriori schema
- Imported 'standarddata' into the apriori_test schema
- Imported 'standarddata' into the apriori_training schema

Client

- Determine the location of the document cache
- Determine if you want to use the silent installer
- Install the client using the interactive installer
- Test client by opening and costing a couple parts

3   Update Installations

Updates to existing aPriori installations usually take the form of either "maintenance" releases (Service Pack or Hot Fix) or "major" releases". (See *Releases and Installation Types* for more details.)

All update installations require you first back up your existing client software. Then, like for a first-time release, install the new aPriori client software.

Update installations do NOT require you to *install* database software unless you are transitioning from one database management system (DBMS) to another. For example, if you are changing from MySQL to SQL Server.

Major release update installations usually require a database upgrade as part of the update installation procedure.

Minor release update installations do *not* usually require a database upgrade or patch as part of the update installation procedure. An exception is when you upgrade from 2019 R1 and 2019 R1 SP1 (and their hot fixes) to 2019 R1 SP2. These upgrades *do* require you to run a db patch script.

Update installations typically require you to install the latest updates to aPriori Baseline Machining and Regional Data Libraries.

ALL updates *must* perform a "compatibility" procedure to ensure that all updated clients can operate with the database after the update.

A summary of the steps that you should and should not perform for different types of releases is provided in *Summary of Required Procedures*, in Chapter 1, Planning Your Installation.

Back Up and Update the aPriori Professional Client

The installation Wizard introduced in 2019 R2 provides you with the ability to automatically create a backup and then proceed with the update process.

When done, you may need to run a database upgrade. Do not perform this step unless directed to do so for this release in 1, Planning Your Installation, or unless directed to do so by aPriori Customer Support.

Overview of Database Upgrades

Perform the database upgrade portion of the following procedures only if you are upgrading an existing installation to a major release, and only if explicitly directed to do so by the earlier sections in this *Installation Guide* or by aPriori Customer Support. If you are NOT performing a database upgrade, you can skip that section and perform *Update Deployment Links* , *Run the Compatibility Script*, and the steps that follow them.

aPriori is constantly improving the upgrade and migration procedure. Please read all the instructions in this chapter even if you have performed upgrades in the past.

Types of upgrades

There are three ways to perform a database upgrade:

- Upgrade in place – Install the latest aPriori software connected to your existing, pre-update database, and then run the upgrade procedure against all aPriori DB schemas. You perform this process twice: once in a test environment on a copy of your production environment, and then once on your production environment itself.

- Full migration – Export the old database, install the new aPriori software, then re-import the exported database files into the new installation.

- aPriori upgrade – Send your database to aPriori Customer Support for migration.

Which method should I choose?

"Upgrade in place" is relatively quick and simple and is the preferred. This streamlined method was introduced in aPriori 2015 R2. If you are an experienced aPriori customer and you have upgraded since 2015 R2, you may find the new upgrade procedure much simpler. If you are staying with your current database management system (DBMS) during your upgrade, this is the path you should take.

Full migration is a manual and involved process which consists of many steps. It can take significantly longer than an "Upgrade in place". You should only choose this approach if you are moving an existing database to a new DBMS as part of this upgrade (such as moving from MySQL to SQL Server). aPriori may identify other circumstances which necessitates this approach. Full migration is described in Appendix A, *Performing a Full Database Migration*. Even if you perform this procedure yourself, you should consult with aPriori Customer Support to ensure that things go smoothly.

The final option is to contract with aPriori to perform the actual migration. This process is described in Appendix B, *Migration by Support*. Only choose this path if you cannot perform an "Upgrade in place" and do not have the resources or the expertise to undertake a full migration.

Upgrading in a Test Environment

Important: Major releases of aPriori often include significant changes which could result in variations with configured VPEs. It is a best practice to test all configured VPEs with the new release in a test or staging environment to understand the impact of changes before you deploy the new release in a production environment.

MySQL considerations

If you are currently using MySQL version 5.1, you also need to upgrade your version of MySQL to version 5.6 because 5.1 is no longer supported.

Using MySQL Workbench, go to **Options File** and then the **InnoDB** tab, and ensure that **innodb_buffer_pool_size** is enabled and set to at least "1G".

Definition of Terms

- Source version: This is the version of aPriori which you are currently running in production and from which you wish to upgrade.

- Target version: This is the version of aPriori to which you would like to upgrade.

- Baseline VPE: The starting point, off-the-shelf VPEs provided by aPriori which start with the word 'aPriori' followed by a geographic region (e.g. aPriori Eastern Europe, aPriori USA, etc.)

- Regional Data Libraries: Extension to the starting point VPEs that contain targeted costing data for specific geographic areas.

- Costing window: The aPriori window in which users normally work and where they would cost parts.

- Migration computer: This is the computer that you use to perform a migration.

General prerequisites

To perform any type of upgrade or data migration, you must have:

- A general understanding of aPriori. You must also have a working knowledge of the database management system you are using with aPriori (either MySQL, Oracle, or SQL Server).

- Super user access to aPriori. If a super user does not exist, you must designate one before starting the upgrade.

- Administrative access to the database server.

- Installation files for the new version of aPriori. For more information, see Acquiring the Installation Files in 1.

- System access to your DBMS tools. That is, the system where you are performing the upgrade or migration must have access to the tools for your database. For example, for Oracle, you must set the ORACLE_HOME environment variable and add it to your Windows PATH. Ensure that you (or a script) can run SQL*Plus (for example, %ORACLE_HOME%\bin\sqlplus.exe). Likewise, for Microsoft SQL Server, you must ensure that SQL Server Management Studio is installed on the machine where you are running the

updatedb.cmd script so that it can access sqlcmd.exe. Running the script on the SQL Server host ensures that this is the case.

> **Note:** If your upgrade requires upgrading through multiple releases (for example, from 2018 R3 to 2019 R1 and then to 2019 R2) you must start a fresh command console window each time you run updatedb.cmd. Otherwise, the old window may have environment variables set for the previous upgrade which cause the next upgrade to fail.

- Hardware: For an upgrade, the staging and testing computer must be comparable to the production server, with enough disk space to accommodate the size of the current database. Supported operating systems: See the latest edition of the *System Requirements* document.

It is a best practice to observe these precautions as a part of any major upgrade:

- Back up everything before you start.

- Create a testing environment where you can upgrade and extensively evaluate the upgrade before putting it into production.

- Only perform the upgrade on your production environment after you are 100% confident that the upgrade does not introduce any unexpected changes for your users.

- When you do upgrade your production environment, do so during an extended period of low system usage (such as a weekend) so that you do not interfere with the production work of your users.

Update – Test Environment

When you update, you perform the procedure twice:

- Once on a copy of your production data in a test environment so that you can evaluate the changes introduced by the update.

- Once on your actual production environment.

Note that when you are working on a copy in the test environment, if your installation includes multiple deployments you must take extra care to ensure that the deployment copies do not contain pointers back to the production environment. We provide notes at critical points in the next section to ensure that you address such pointers.

Prepare for the test update

The details for the following steps vary with your specific DBMS type (MySQL, Oracle, or SQL Server) and with your in-house database administration procedures. For database operations, the following steps only specify the desired result. Your database administrator(s) must determine the specific procedures they wish to employ to achieve those results.

1   Configure a testing system that is comparable to your production system and which has access to your database management system.

2   Create database dump files for each of the production database schemas that you need to upgrade. These files serve a dual purpose: as a backup, and as a way to copy your production data to the testing environment.

3   Define new schemas (one for each existing schema) to be used for testing. These schemas should have names that are similar to the production schemas, but which also include a suffix or some other naming convention that identifies them as belonging to the new release (for example "16.2").

4   Import the dump files created above into each of the new testing schemas.

> **IMPORTANT:** If you have more than one deployment and are working with a copy of your production environment, it is critical that you do not run the compatibility script until *after* performing the steps in the next section ("*Update Deployment Links*"). Upgraded deployments that are copies of your production environment can still contain pointers back to your production environment and running the compatibility script in this state can cause your production clients to stop working with your production deployments. Only proceed once you are sure that your test deployments point only to your test environment.

Update Deployment Links

You need to perform an additional client installation (with the old version) that points to the copy of your main deployment. (Later, the new client is used. However, the steps below **must** be performed using the old client version.)

1   Log into the aPriori client as a system administrator with the previous version of the client.

2   Click **Tools > System Admin Toolset** from the client menu bar.

3   Click the **System Administrator** button on the System Admin Toolset window.

4   For each deployment, click **Deployment** *<name>* from the left navigation pane in the System Administrator window and perform the following steps.

5   In the **Deployment** pane, you must edit the fields to ensure that all values reflect any changes made to the test environment, and that nothing points back to the production environment from which it was copied. Do not make changes to the **Inherits from Master** option for any deployment (usually the Default deployment has this checked). If you make any changes, do so only to deployments that still have **Inherits from Master** unchecked.
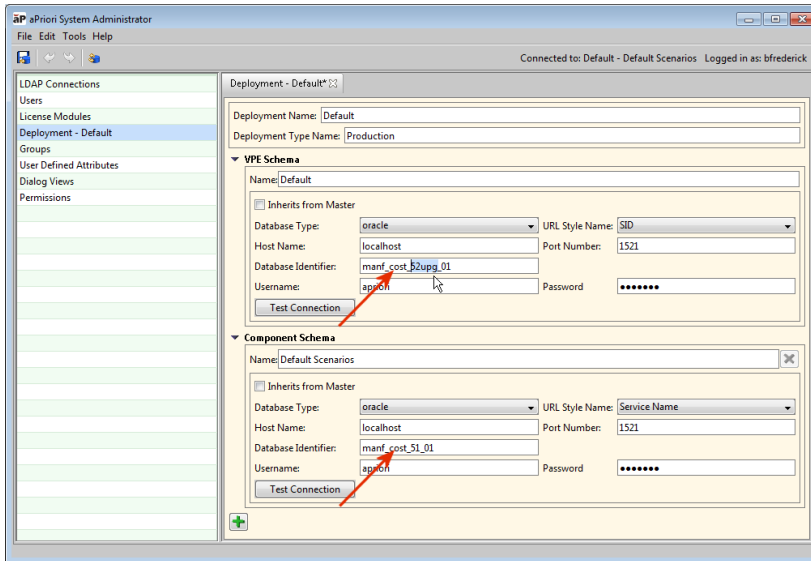
6   To ensure that your changes are all valid, use the **Test Connection** button.

7   When done with all deployments, in the System administrator tool bar, click the

    Publish Changes, ![icon], button.

Continue with the update process

1   Install the new version of aPriori on the testing computer system, specifying the updated schemas when prompted.

2   Once you have installed the new version of aPriori, you cannot log in: aPriori displays an "incompatible version" error message.
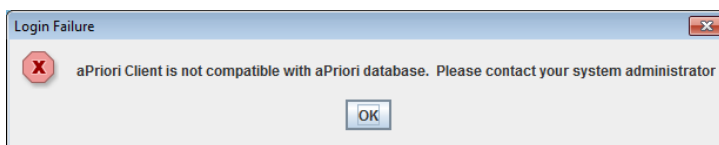
If your update requires that you upgrade your database, you must perform that procedure. In all cases, you must ensure that any deployment links point to the test system and not to the production system, and then run the aPriori "compatibility" script as explained in the next sections before you can log in again.

Perform the database upgrade procedure

If your update requires a database upgrade, you must run aPriori's database upgrade or patch script against every aPriori schema in your existing database. (For testing

purposes, the testing schemas are initially COPIES of your production schemas that you created in the "Prepare for the upgrade" section.)

If you are upgrading to 2019 R2 (19.2.x.x) from any 2019 R1 release (19.1.x.x) you must run the upgrade script.

IMPORTANT: See *General prerequisites* for important considerations when running the upgrade script.

The upgrade script is in the following location of the new aPriori installation:

```
<apriori_install>\bin\updateDB.cmd
```

The scripts take the following arguments:

- `/dbflavor` – Either `mysql`, `oracle`, or `sqlserver`. If `oracle` is specified, one of the following sub-arguments is required:
  ```
  {/sid <sid>|/servicename <servicename>}
  ```

- `/h` – The host name of the server where the database is located.

- `/P` – The port used by the database (typical values are `3306` for MySQL, `1521` for Oracle, `1433` for SQL Server).

- `/schemaname` – The aPriori schema to be upgraded.

- `/user` – A database user account with privileges to modify the aPriori schema.

- `/password` – The password for the privileged database user account for modifying the aPriori schema.

Run the upgrade script

1 From the command line, navigate to the bin directory of the test aPriori installation and run the database upgrade script against your old schema(s):

```
updateDB.cmd /dbflavor [mysql|
      {oracle {/sid <sid>|/servicename <servicename>}}|sqlserver]
      /h <hostname> /P <port> /schemaname <schemaname>
      /user <user> /password <password>
```

For example, for an Oracle database upgrade, the command lines might be similar to

```
cd apriori_<vers>\bin
updateDB.cmd /dbflavor oracle /servicename orcl.acme.com /h
      testhost01 /P 1521 /schemaname apdb1
      /user apadmin02 /password k73M06nn!
```

The above is only an example. Make sure to substitute valid arguments for your particular situation. The script displays `"updateDB complete"` when done.

2 If you have multiple schemas, repeat the previous step for each schema that needs to be updated.

Run the Compatibility Script

All updates must run the compatibility script, regardless of whether you need to run the database upgrade script in "Perform the database upgrade procedure". This script ensures that all updated clients are interoperable with the updated database. The script takes only *<aP_username>* and *<aP_password>* arguments.

> **Note:** Unlike the database upgrade procedure which needs to be run for every schema, this compatibility script must be run only ONE time. This updates the database to make it compatible with the new version of software. Therefore, it does not need to be done for each client installation.

1 Open a command console and cd to the aPriori installation directory.

```
cd <apriori_install>\bin
```

2 Execute the script:

```
updateCompatibleVersions.cmd <aP_username> <aP_password>
```

For example:

```
updateCompatibleVersions.cmd bsmith002 dm675KA
```

Note: These are NOT the same credentials you may have used to upgrade the database in the previous section. Many users do not need to use their aPriori user ID and password regularly, and therefore may not know them. This means that your aPriori user ID is the same as your Window's user ID. The password was created at the same time your aPriori user account was created. If you do not know it, use the aPriori System Administrator to reset your password.

Install the VPE baseline update

Most updates require you to perform an import of an aPriori Baseline Update. This changes some costing data in the aPriori starting point VPEs and makes other important changes.

Concerns about changing costing data might make you consider skipping this step. Please note that the costing data in your configured VPEs are not changed, unless these are explicitly updated to match the newest cost data.

IMPORTANT! If a baseline update is provided as part of an upgrade, this import cannot be skipped. If there are any concerns about this, then contact aPriori Customer Support before beginning your upgrade

Note: It is recommended that you apply the baseline update while users are not actively using aPriori, but it is not a requirement. Be sure to notify users that this is taking place to avoid confusion since a cost estimate using a baseline VPE may change.

1 If you are a super user, acquire the baseline update installation file and proceed to the next step in this process. For more information, see *Acquiring the Installation Files*.

If you are not a super user, you cannot access the UI until the baseline update is installed, but you can import the baseline update using the cmdLine tool:

      a. Open a cmd console and cd to aPriori installation directory:

         cd <ap_install>\bin

      b. Execute this script:

         loadBaselineUpdate <full_path_to_baseline_update_file> <ap_username> <ap_password>

         where ap_username is both an Admin & a VPE Admin

2   Install the baseline update:

      a. Login to the aPriori client that you just installed. If you do not have a desktop shortcut, you can launch the aPriori client from the runStandaloneApriori.cmd script. The runStandaloneApriori.cmd script is in the \bin directory of the aPriori installation folder.

      b. Click on the **Tools** menu, then select **VPE Toolset**.

      c. From the VPE toolset, click the **File** menu, → **Import** → **aPriori Baseline Update…**

      d. Navigate to the file you downloaded. Note that if you used Internet Explorer to download the file, the file extension was likely changed from .apx to .zip. Therefore, when browsing for the file, you may need to change the **"Files of type:"** filter from .apx to All Files.

    Note: Baseline updates must be imported into **each deployment**.

3   After the baseline update has finished importing, test the installation to make sure everything is working properly. If so, remove the old version of the aPriori client software that was renamed in a previous step (C:\aPriori_old) and install the new version on the rest of the client computers.

Acquire and install Regional Data Libraries

If you have Regional Data Libraries in addition to the standard starting point baseline VPEs that ship with aPriori, contact aPriori Customer Support to download the latest files. Install these Regional Data Libraries for each deployment. Installation instructions are found in the Release Notes for the RDL release.

Extensively test the update

Test the updated installation to ensure that everything works the way that you expect. Once you are satisfied with the stability of the software, you can proceed to update your production environment.

Update – Production Environment

Once you are confident in the update based on your testing, you can upgrade your production environment: repeat the steps you performed above in the test environment to your production environment during a quiet period. The procedure below assumes this approach.

Prepare for the production upgrade

As mentioned earlier, schedule this for a period of low system usage, and ensure that all your data is backed up.

1 Back up all your production schemas. Note that for the production upgrade, the dump files are strictly to ensure data integrity. You do not re-import these schemas as part of the upgrade process.

2 Install the new version of aPriori on the production computer system(s).

Perform the update, adjusting as necessary

Repeat the procedures that you followed for testing, from *Perform the database upgrade procedure* (if applicable) through *Acquire and install Regional Data Libraries*, adjusting as necessary to reflect that you are working with your production environment rather than the testing environment.

This completes the update procedure. You can skip over the rest of the chapters in this guide.

A.   Performing a Full Database Migration

This chapter provides the detailed steps required to perform a full database migration.

Usually this is not necessary. Most aPriori database upgrades are handled by the simpler "Upgrade in Place" procedure documented in *Perform the database upgrade procedure* in 3.

However, in certain circumstances (such as changing from one DBMS to another at the same time you upgrade aPriori), you need to perform the full migration procedure described here.

Note that you also have the option of having aPriori perform the upgrade and migration. If you would like to pursue this option, contact aPriori Customer Support and then follow the procedures in Appendix B, *Migration by Support*. If you plan to send your database to aPriori Support to so they can perform the migration, or if you are performing your own "upgrade in place", you can disregard the rest of this appendix.

If you need to use this procedure, you should still work with aPriori Support if this is your first time performing a data migration.

Caution: Read this entire appendix before attempting or scheduling your upgrade. The upgrade procedure has many steps and it is important that it is fully tested with your data before upgrading the production system.

Prerequisites for migration

In addition to the items listed in *General prerequisites*, you must also have the following for the migration procedure:

- The source version of aPriori:

```
https://transfer.apriori.com/download/p/aPriori_<version>_migration_
    exp.html
```

- A database schema file compatible with the new version of aPriori:

```
https://transfer.apriori.com/download/p/aPriori_databases_<version>.
    zip
```

There are two database files: migrationdata for the master database and standarddata for additional deployment databases (if necessary).

- Hardware: The database migration process is data intensive. The exact system requirements necessary for the migration computer depend on the size of the database that is being migrated. It is important to test the migration with the machine that you use for the production upgrade, so you know it is capable. The computer must be on the same LAN as the database server. Any latency between the database and the client performing the migration slows the process down immensely.

Memory: 6 GB (possibly more for very large databases)

Disk Space: 2x the size of the database. Recommended: Solid State Drives (SSD) for faster performance.

Note: If the source release uses an encrypted connection, then for the updateCompatibleVersions script to work, the SSL certificate must be imported into the target client.

Overview of Steps

1 Setup the source version.

2 Export the data out of the source version.

3 Setup the target version and database.

4 Import the data into the target version.

5 Test the VPEs.

6 Plan and schedule the production upgrade.

7 Reload the database export.

8 Execute the differential update.

9 Upgrade the client software.

Data Export

Note: You should either copy your database to a test environment or perform this test during times of low aPriori usage because the procedure in this chapter may impact the performance for other users.

Set up the Source Version

1 **On the database server**, create another database schema to serve as a copy of the production data.

Oracle: If you use Oracle, please ask your DBA to create a copy of your production database in a test environment.

MySQL: If you use MySQL, follow these steps:

- Start MySQL Workbench 6.0

- Click the **New Schema (⊞)** icon from the toolbar.
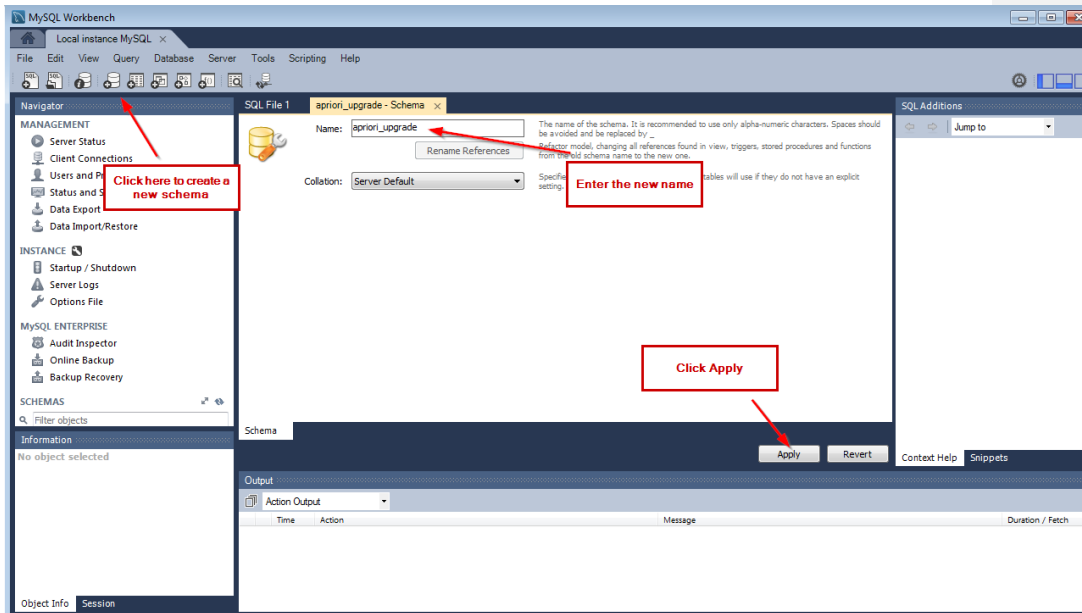
- Enter a unique name for the database, such as *apriori_upgrade* in the "**Schema name**" field and click **Apply.** Then click **Apply** again, and finally click **Finish**. The *apriori_upgrade* schema is in the list of schemas on the left.

- Select "**Users and Privileges**" from the list in the top left panel

- Click on the user that is named "apriori", then select the **Schema Privileges** tab from the upper right side

- Select the **Add Entry** button located on the right, mid page
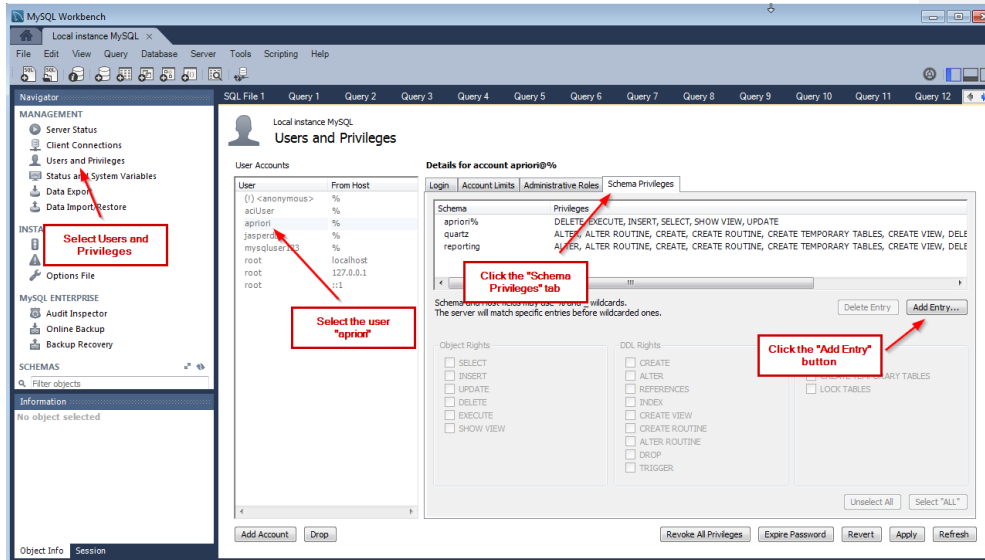
- Click on "**Selected Schema**" radio button then highlight your new schema and click **OK**
- Select user beneath User Accounts
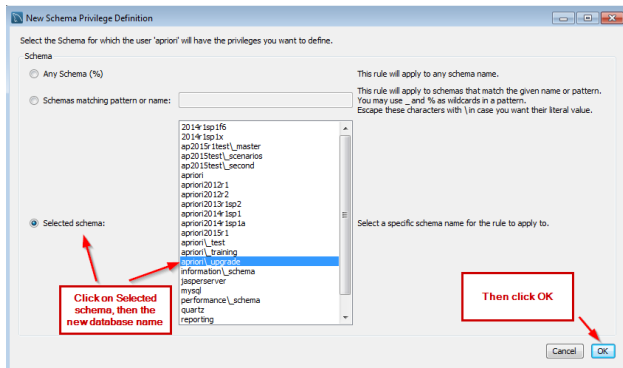
- Select all the options under Object Rights and click **Apply**

- Close MySQL Workbench
- Repeat the previous steps for each additional deployment schema/database you are migrating.

2 Copy the data from your production schema to the upgrade schema.

- On your MySQL server, open a command window.

- The following steps use the mysqldump.exe and mysql.exe commands. If the MySQL bin directory is not in your PATH environment variable, Windows does not know where 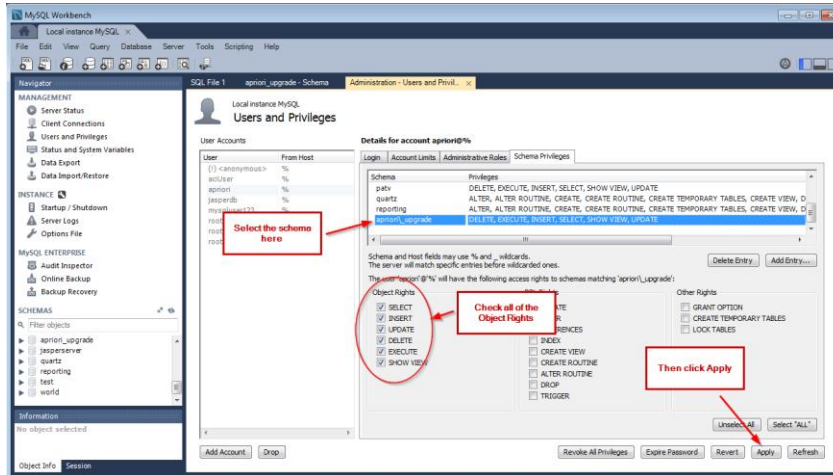these commands are located. Therefore, you may have to supply the full path to the command. It is in the MySQL installation directory, which is often \Program Files\MySQL\MySQL Server 5.6\bin. Note that you may not have write permission to this folder, so if your command prompt is at that directory, you may need to specify a different location for the location of the file. You can also find mysqldump.exe and mysql.exe in the aPriori\bin directory if the aPriori client is installed.

- Enter this command to export the data from the production schema (this assumes the production schema name is "apriori"):

```
mysqldump.exe –user=root –password=password apriori >
    apriori_upgrade.sql
```

Enter this command to import the data into your new upgrade schema:

```
mysql.exe –user=root –password=password apriori_upgrade <
    apriori_upgrade.sql
```

- There is no status indicator showing the export progress. However, when the export is complete the command prompt window reappears and displays a new line for user input. If there are no errors shown, then proceed with the migration.

- Repeat the above steps for each additional deployment schema/database you are migrating.

- Keep the command window open for the next step.

3 **On the migration computer**, install the source version of aPriori. The installation media is listed in the prerequisites section at the beginning of this guide. It is important to use this version of software because it contains fixes directly related to migration., Install as you would normally, except change the name of the installation from the default of 'apriori' to include the version (e.g. 'apriori2016R1') and point to the database schema "apriori_upgrade".

4 Upgrade the source database to be compatible with the latest version of the source release you just installed. Doing so allows the new source version of the software to open.

- Open a command prompt in the \bin directory of the aPriori installation folder where you just installed.

- Enter this command to upgrade the source database to the latest version of aPriori:

```
updateCompatibleVersions.cmd <user> <password>
```

where user and password pertain to an aPriori user account with system administrator privileges. If the build shows "successful" with no errors, then proceed with the next steps.

5 Edit the file called runStandaloneApriori.cmd located in the \bin folder where you just installed aPriori.

- Change the amount of memory allocated to aPriori on line 18. The amount of memory in megabytes immediately follows "-Xmx". The size of the database and physical memory on the machine determines the amount of memory that you need to allocate to aPriori. Change the default value to 4096m and higher if you have more than 6GB of memory installed. Make sure to leave 2GB for the operating system and other applications. Allocating too much memory to aPriori could result in paging which severely degrades performance.

- (Optional) Change the cache location. aPriori uses your user home directory to cache data during the upgrade procedure. This location is typically:

```
C:\users\<username>\AppData\Local\aPriori.
```

If you do not have at least the same amount of space available on the C: drive as the size of the database, you must change the cache location to a disk that has enough space. Do so by adding the following line to the start of runStandaloneApriori.cmd. Replace "D:\temp\cache" with your choice of cache location:

```
set localappdata=D:\temp\cache
```

Export data out of the Source Version

1 **On the migration computer**, create a new folder in which to save the migration export data. Do so on a drive which has at least the same amount of space as the database. For example, D:\migration_export_data\

2 Go back to the main aPriori window. From the **Tools** menu, select **Migration > Export Migration Data**.
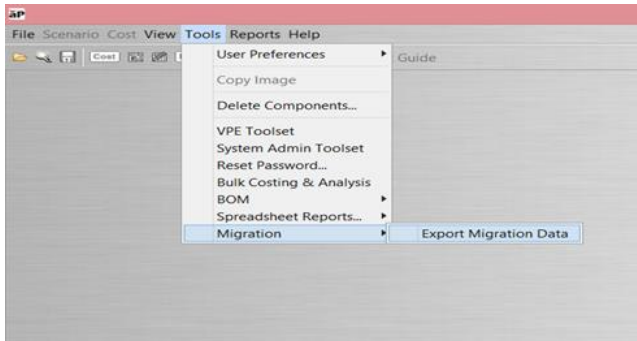
3 aPriori displays a list of all your schemas. Select all the schemas you want to export for migration. Typically, you only migrate the production schemas and do not migrate test or training schemas.
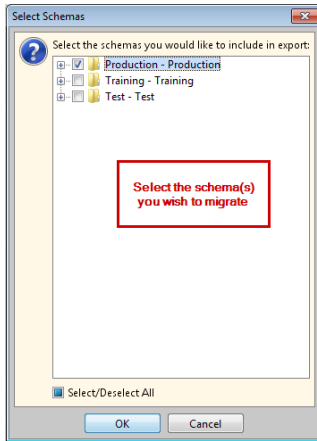
4   Save the export file to the folder that you created earlier. The amount of time it takes to export the data depends on the size of the database, the speed of the connection to the database, and the hardware of the computer. It could take as little as 30 minutes and as long as several hours. Once it is finished, aPriori information for all schemas selected are saved to disk in a version neutral format.

5   The export is now complete. Close the aPriori client.

Data Import

Setup the target version

1   **On the database server**, create another database schema to use for importing the migration data for testing purposes. If you use Oracle, please ask your DBA to do this. If you use MySQL, follow the same steps as you did previously to create (a) new database schema(s) and add permissions for the user "apriori". This time give the new schema a different name such as including the current version, for example: "apriori_2016R1*".*

2   **On the database server**, import the migrationdata dump file into your new master database schema, and import the standarddata dump file into any other database schemas. Use the section below that reflects your database management system.

Note: If you only have one database schema, that is your master database schema. If you have multiple database schemas, one of them is the master. The master schema is the one which contains users and license information. It is also the database that was entered at the time you installed the aPriori client software and is referenced in the hibernate.properties file (found in the aPriori installation's home directory).

ORACLE: Ask your DBA to import the following files using Oracle's **impdp** utility:

migrationdata<*version*>_oracle.dmp into the new master schema

`standarddata<version>_oracle.dmp` into any other schemas.

The details of the database dump files including the user and tablespace from which they were exported are included in the readme.txt file inside the zip file containing the database dump files. The databases can be remapped to a different user and tablespace.

MySQL: Follow these steps:

From a command prompt use the following command to import the database file to your master database:

```
mysql –user=root –password=<rootPassword> aPriori_<version>
        < migrationdata<version>_mysql.sql
```

The command prompt disappears while the data is importing. It takes a few minutes for the import. After the data is imported successfully, the prompt returns with no message. You know it imported successfully if no error messages are displayed.

If the MySQL \bin directory is not in the PATH environment variable, Windows does not know where to find the mysql.exe file. Therefore, you may have to enter the full path:

```
\Program Files\MySQL\MySQL Server 5.6\bin
```

If `migrationdata<version>_mysql.sql` is not in the same folder as your command prompt, either move it to that folder, navigate to that folder in the command window, or provide the full path to the file.

Repeat the above steps to import `standarddata<version>_mysql.sql` for each additional deployment schema/database you are migrating. Keep the command window open for the next steps.

3   **On the migration computer**, install the target version of aPriori in the same manner you would install any other version. These are the exceptions from default when installing.

- Change the name of the installation from the default of apriori to also include the version (for example, `apriori2016R1`).

- Make sure you point it to the new database you just created and to which you imported the file.

4   Allocate additional memory. Most databases require additional memory beyond the default of 1280Mb. To do this, edit the file *<apriori_install>*\ext\migration-import-plugin\plugin.properties. Find the line towards the bottom of the file: *launcher.max.memory=2048m*. Change 2048 to 4096, then save and close the file.

Import the data into the target version

1   **On the migration computer**, launch the target version of aPriori by running the runStandaloneApriori.cmd script found in the*<apriori_install>*\bin directory.

2   Log in with username = **migration** and password = **migration**.

3   From the **Tools** menu, select **System Admin Toolset**.

4   Click **Migration Import Tool**. Refer to the following screenshot as you proceed through the rest of this procedure.
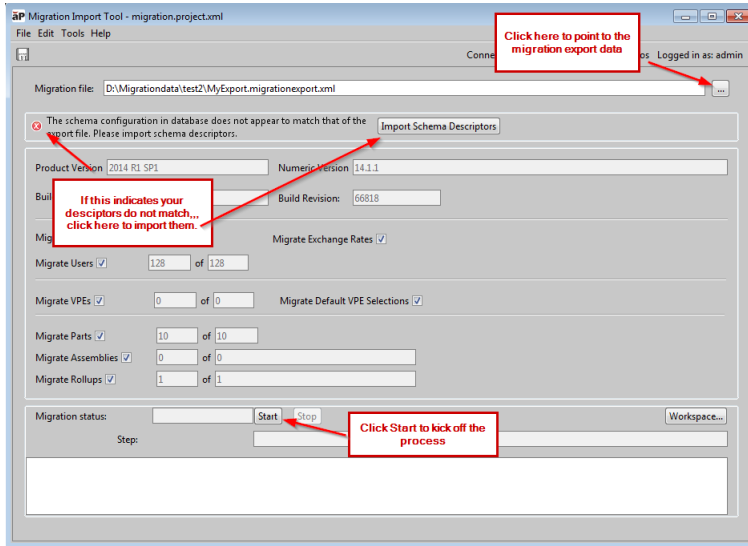
5   Click the ellipsis (**…**) button to the right of the **Migration file:** field. Browse to the folder where you saved the migration export from the old database and select MyExport.migrationexport.xml, then click **Open**.

6   If a message appears that the schema descriptors do not match, click **Import Schema Descriptors**.

- When asked whether you wish to proceed, click **Yes**

- When the import completes, click **OK**

- The System Administrator window opens. If you are only migrating one database schema, no further action is needed here. If you are migrating multiple schemas you must ensure that the **Inherits from Master** box is checked *only* for the master schema.

- Save changes.

7   Return to the Migration Import Tool window and click **Start**, then **OK** to confirm the start of the migration import. If you made a mistake and are attempting to import into a database that is not empty a warning is generated. If you get this warning, double check the database connection information in hibernate.properties and in the System Administrator window.

8   The status of the migration is displayed at the bottom of the window as the data is imported into the new aPriori database. The amount of time it takes to import depends on the size of the database. This typically takes about 50% longer than it took to export the data.

9 When the migration is complete, a pop-up window appears, the migration window closes, and you are logged out.

Testing

Test the VPEs

It is important to test configured VPEs and reports to make sure they are compatible with the new version of aPriori. At the time your VPEs were configured, a VPE test and calibration plan may have been created. If so, run that test plan in the new version of aPriori.

If you do not have a test plan already, one approach is to open and cost a set of parts in both versions and compare the results of each. An easy way to do that for many parts is to create a roll up in each version and add the same parts to each rollup. Note that there are differences in the cost of the same component in each version.

aPriori publishes release notes as well as a detailed list of changes to the cost models that cause differences in the costs between versions. Please refer to those documents for specific changes. Here are typical reasons for cost changes.

1 Improvements to geometry extraction.

- If you are costing the same CAD file in 2 different versions of aPriori, the way in which aPriori analyzes the geometry may differ. Improvements are often made which allows aPriori to more accurately and granularly interpret the geometry. If you are re-costing parts in the database that are not connected to a CAD file, these types of changes are not relevant.

2 Changes to baseline VPE cost model logic

- Baseline VPEs: The aPriori baseline VPEs are based on logic from the baseline cost models. The baseline cost models often change with a new release of software to include new functionality. This is very likely to change cost estimates when using the baseline VPEs.

- Configured VPEs: Configured VPEs also typically inherit costing logic from the baseline cost models. However, the baseline cost models are versioned. New functionality is only put into new versions. VPEs inheriting from baseline cost models continue to inherit from the same version. Therefore, there is likely no change to the cost model from which the VPE is inheriting. Bug fixes are an exception to this.

- The above is true for both overlay (inherited) VPEs as well as standalone VPEs. However, with overlay VPEs, you can easily update the version from which it is inheriting from the VPE Manager.

3 Changes to baseline VPE labor and overhead rates.

- For standalone VPEs, these changes have no effect. For inherited VPEs and baseline VPEs these changes result in an expected cost difference.

4 Improvements to cost engine.

- These types of changes are less likely to cause a difference than the ones above. However, it does happen on occasion. For example, in 2015 R2, improvements were made to the sheet metal nesting algorithm which could result in more parts per sheet, which increased the material utilization and decreased material cost compared to older versions.

Moving to production

Plan and Schedule Production Changes

Once you have successfully tested the new version of aPriori, you can plan your move to production. Schedule the production move for a date and time when you can suspend use of aPriori completely for a period of time. This process typically takes a day, and it is recommended to leave two days in case extra time is needed for unforeseen issues.

Notify all aPriori users about the time-schedule for the move and indicate that the application is unavailable during migration.

The following steps explain how to find the scenarios in the production database that have been updated since the first migration took place. Run this at least two days prior to the production move, and again at the time of the production move. This process minimizes the time for the production move and gives a sense for how long the move takes.

1 Prepare for the production move by importing the upgraded database you migrated previously into a production schema.

   IMPORTANT! At this point you still require both the old and the upgraded databases. Therefore, do not import the new database into the same schema as the old!

2 At this point in time all users should stop using aPriori. Any changes made with the old version after this point are lost.

3 The following steps explain how to export the scenarios that have been created or updated since the old database was exported.

   - Open the old version

   - Select **File > Export > Select Scenario(s)**

   - On the left side of the search box under Time Selection, select **From**

   - Enter the date you last exported the database. (leave the **To** field empty)

   - To find all scenarios created or updated since the chosen date, click the **Find** button.

   - Click on the first scenario to select it, then press **CTRL A** to select all, then click **OK**.

4 Save the apriori.scenarios.ap file. The following steps explain how to import the scenarios into the new database.

   - Open the new version of aPriori.

   - Select **File > Import**

- Browse to the location you saved the apriori.scenarios.ap file that you exported from the old version. Select the file and click **Open**.

- This imports those scenarios to the new database and completes the move to the new database.

5   If any VPE changes were made since the initial database export, export those VPEs out of the old version and import them into the new version.

6   If any other changes had been made to the old version such as users or site variables since the initial export, make those same changes in the new version.

7   Once all data in the new database is up to date, disable the old database to ensure no users continue to use it. This can be done by changing the database password or by dropping the database.

Upgrade the Client Software

1   Install the aPriori client software as described in *Installing the aPriori Professional* Client. If you changed the name of the schema, be sure to use that schema name when installing the client software.

2   When installing the new version of aPriori, do not install on top of the previous installation. Remove the previous version before installing the new one.

3   Verify the client is working correctly by launching aPriori and opening and costing several parts.

B. Migration by Support

If you are going to have aPriori perform your database migration, follow the guidelines in this chapter.

Overview of steps

1 Two to four weeks before the date you plan to implement the new release in your production environment, contact aPriori Customer Support (support@apriori.com) to inform them that you would like them to complete the migration. This allows time for testing and potential debugging.

2 Export a copy of your production database and send it to aPriori. Starting now, until the production migration, please limit making any system-wide changes such as to variables or users.

 When you move to production you can easily update the migrated database with any cost estimates (scenarios) that have changed since the copy was made, but there is no easy way to update other types of data. If you must make these types of changes, please document what has been done so they can be done again in the updated database.

3 aPriori:

 - migrate the data and test against the new version.

 - assess configured VPE changes and scope amount of work required (if any).

 - provide a time frame for any VPE reconfiguration to be done (if necessary).

 - send the migrated database back to you.

4 (Highly recommended) Install the new release in a staging environment and conduct independent testing of custom VPEs as well as of general compatibility with your systems, hardware, CAD environment, etc.

5 (Optional) Meet with aPriori Support to answer any questions about how to move from staging to production.

6 Move from the tested, staging environment to production:

 - Disable access to the older, production database.

 - Use the aPriori client software to export any data from the older production database that has changed since the database was exported.

 - Import the migrated database to the new production database schema

 - Use the aPriori client software to import into the new database the changed data that you exported above.

 - Install the new client software and connect to the migrated database

Exporting, importing, and testing

1 Export the database. Make a note of the date and time you export the database. Users may continue to use aPriori at this time.

> **Oracle notes:**
>
> - Have your database administrator export the database using the **expdp** command.
>
> - The maximum file size our support site can handle is 2GB. Therefore, limit the size of the files to 3GB using the FILESIZE parameter. After zipping the files, they should be less than 2GB. Do **not** use the Linux/Unix pipes to split or compress the export. aPriori Support uses Windows servers and therefore cannot use these files.
>
> - Create the log file when exporting and send it along with the database. This log file contains important information that aPriori Support needs to perform the migration.
>
> **MySQL notes:**
>
> - On your MySQL server, open a command window.
>
> - The following step uses the mysqldump.exe command. If the MySQL bin directory is not in your PATH environment variable, Windows does not know where this command is located. Therefore, you may have to supply the full path to the command. It is in the MySQL installation directory, which is often \Program Files\MySQL\MySQL Server 5.6\bin. Note that you may not have write permission to this folder, so if your command prompt is at that directory, you may need to specify a different location for the location of the file. You can also find mysqldump.exe in the aPriori\bin directory if the aPriori client is installed.
>
> - Enter this command (this assumes the schema name is "apriori", and the username, and password are both "admin" – also, replace *companyname* with the name of your organization):

```
mysqldump.exe –user=admin –password=admin
    apriori > apriori_<companyName>.sql
```

2 Zip the database file(s) generated in the previous step and upload to transfer.apriori.com/dropbox

3 If the zip file is greater than 2GB, use the feature in Winzip to split the file into multiple files less than 2GB, or use File Splitter (available for free at www.filesplitter.org) to split the file.

> **NOTE:** Please inform aPriori Support as to how you have split the zip file.

4 Send an email to support@apriori.com stating your database has been uploaded. If this is an Oracle database, also include the log file generated during the export process.

5 aPriori migrates the data and test against the new version.

6 aPriori assesses the VPEs for compatibility with the new version and estimate how much effort is required to make them compatible.

7 aPriori communicates the amount of time they need to complete the VPE work.

8 aPriori sends the database back to you in the upgraded format.

9 Import the upgraded database.

Oracle – Have your database administrator import the database using the **impdp** command. Any relevant details such as the schema name and tablespace name used during the migration process is communicated along with the database file itself.

MySQL – Open a command line on the database server and execute these commands (use the actual name of the file that you downloaded):

```
mysql.exe –user=admin –password=admin -e "CREATE DATABASE
    apriori_<version>"
mysql.exe –user=admin –password=admin apriori_<version> <
    <name_of_db_file>.sql
```

10 Download the latest aPriori software as described in *Acquiring the Installation Files*.

11 Install the aPriori software for testing as described in *Installing the aPriori Professional* Client.

Note: When installing for testing purposes be sure to install to a different directory than the existing installation folder. For example, if you have version 2015 R2 installed in:

C:\aPriori

then install this version to:

C:\aPriori_2016R1

12 Proceed to test the new software. Test all custom VPEs; opening parts from a CAD file; using any aPriori CAD plugins; using aPriori in any normal workflows; etc.

Moving from Testing to Production

These are the steps that need to be taken at time of the actual migration of the production system.

13 Prepare for the production migration by importing the upgraded database into the production schema.

14 Install the latest client software in at least one place, pointing to the production schema.

15 At this point in time all users should stop using aPriori. Any changes made in the older version of aPriori after this point are lost.

16 The following steps explain how to export the scenarios that have been created or updated since the database was exported.

- Open version the old version of aPriori.

- Select **File > Export > Select Scenario(s)**

- On the left side of the search box under Time Selection, select **From.**

- Enter the date you last exported the database. Leave the **To** field empty.

- To find all scenarios that are new or updated since the date you entered until now, click the **Find** button.

- Click the first scenario to select it, then press **CTRL A** to select all, then click **OK**.

17 Save the apriori.scenarios.ap file. The following steps explain how to import the scenarios into the upgraded database.

- Open Version the new version of aPriori.

- Select File > Import

- Browse to the location you saved the apriori.scenarios.ap file that you exported from the old version. Select the file and click **Open**.

- It imports those scenarios to the upgraded database, which completes the migration to the upgraded database.

18 Uninstall the old client software. You can use the uninstall.exe located in the aPriori installation folder or **Add/Remove Programs** from the Control Panel to uninstall. If you do use one of these methods, please make sure that all the files have been removed. If they have not, delete them manually. You may also just delete the files manually without running the uninstaller.

19 Install the new version of aPriori in your production environment and connect to the migrated database.

C. Troubleshooting aPriori as a Creo Toolkit Application

After the setup of aPriori as a Creo toolkit application, it is common for aPriori to fail to start the first time you attempt it. This can be for several different reasons, which can be easily addressed.

No Error Message

If you do not get any error message, the problem is likely due to an error in the configuration of the config.pro, protk.dat, or both.

The most common configuration is to have a config.pro in the Creo startup directory. If you do not know where your startup directory is, you can find it in Creo by clicking on **Help > System Information**. Scroll down to the Directories section and look for the "Creo Parametric Startup Directory:".

The toolkit file (ending in protk.dat) is in the aPriori installation folder and contains the path to the aPriori .dll and text directory. This file is automatically generated when aPriori is installed and should only need to be modified if the location of the aPriori installation changes.

aP Wrapper Failure

You may get one or more of the following messages in Creo®.

- `Startup of application "aP Wrapper" failed.`
- `Foreign program "aP Wrapper" failed to initialize: error PRO_TK_GENERAL_ERROR`
- `JVM creation failed!`

The most common reason for these messages is that the computer is missing the Microsoft® Visual C++ runtime files. Close Creo®, and install the files according by running:

`\aPriori\install-files\runtimes\installRuntimes.cmd`

Another common reason for the "aP Wrapper" failure message on 32-bit machines is related to memory. aPriori requires a 64-bit computer in order to run aPriori as a Creo toolkit application.
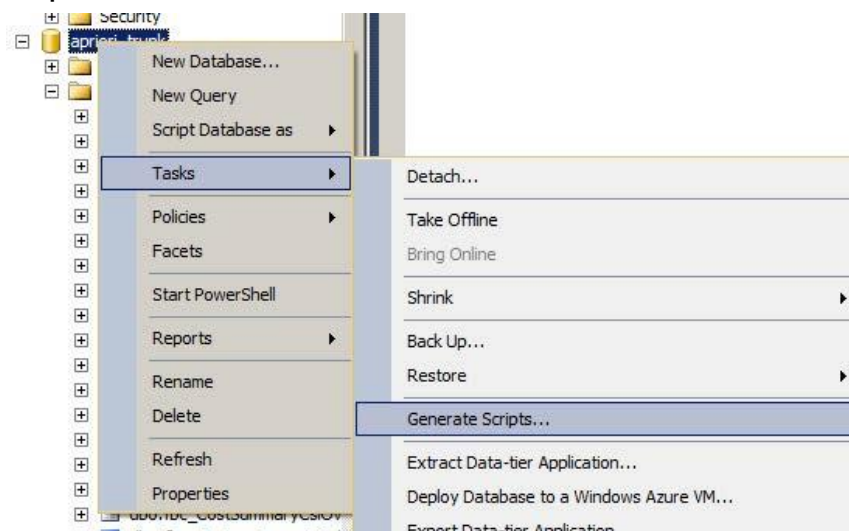
D. SQL Server Export Tools

You have at least two tools that you can use to export a SQL Server database:

- SQL Server Management Studio (SSMS)
- aPriori's internal sqlServerExport PowerShell script

Export using SQL Server Management Studio (SSMS)

To create a dump from SSMS, right-click a database and select **Tasks -> Generate Scripts...**

This opens a wizard. In the 'Choose Objects' section select 'Tables':

Open the Advanced options dialog and <u>disable</u> 'Script USE DATABASE' (this lets you import the dumped data into another, differently named, database instance). Set 'Types of data to script' to '<u>Schema and data</u>':
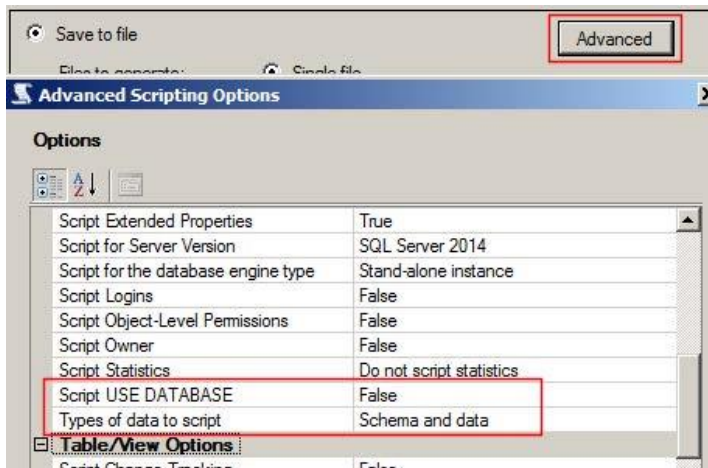
Exporting using aPriori's PowerShell script

aPriori provides a PowerShell script that dumps the contents of a database to a `.sql` file (this is somewhat similar to MySQL's **mysqldump** command):

```
sqlServerExport.ps1
```

Although this was originally developed for internal aPriori use, we are making this tool available to our customers.

The script includes some basic usage information which can be viewed as follows:

```
get-help sqlServerExport.ps1 -detailed
```

For example, to dump the contents of a database named 'apriori_15.2':

```
sqlServerExport.ps1 -server 'localhost,1433' -user apriori -pass
    apriori -db apriori_15.2 -out dbdump.sql
```

To use native authentication simply omit the '-user' and '-pass' parameters.

To load this dump into another database, first create a new database, then import the dump into that new database ('apriori_copy' in this example) using sqlcmd:

```
sqlcmd -S "localhost,1433" -d apriori_copy -i dbdump.sql
```

Note: The 'SQL Server PowerShell provider' must be installed on the machine where the script is run. This is included in SQL Server's **Management Tools - Basic** install feature and can be installed independently of the SQL Server:
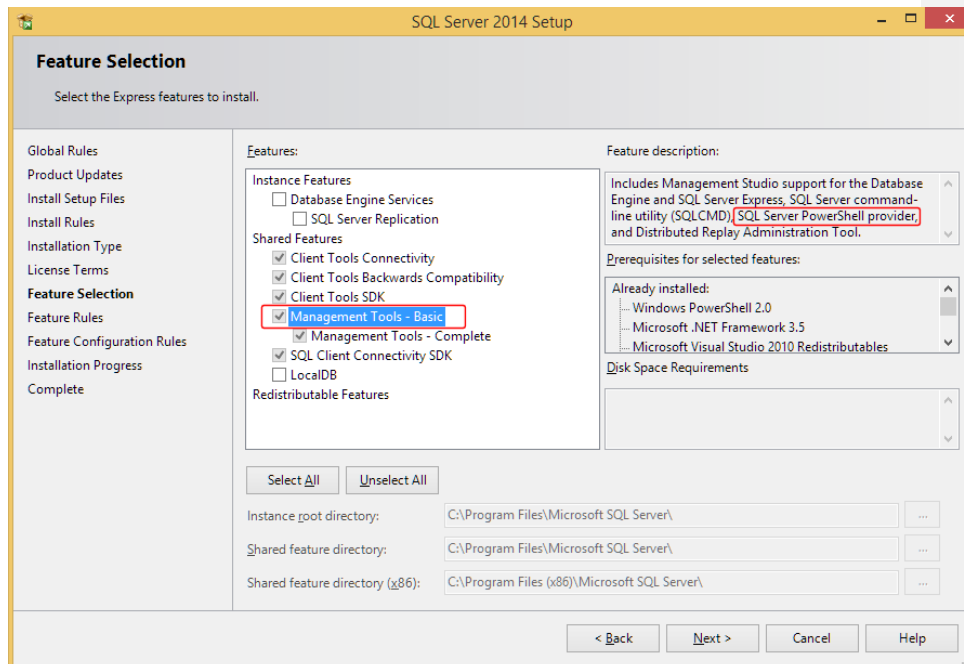
Note: Dumping a large database might be best performed on the server itself to avoid shipping the entire database over the network.

www.apriori.com

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