

Installing Apama

Version 10.1

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This document applies to Apama Version 10.1 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Table of Contents

About this Guide.....	5
Documentation roadmap.....	5
Online Information.....	7
Contacting customer support.....	7
Before You Start the Installation.....	9
About the Apama installation process.....	10
Prerequisites.....	11
Installing Apama.....	13
Running the Software AG Installer.....	14
After the installation.....	16
Post-installation considerations for Linux users.....	16
Installing the latest fixes.....	17
Installing Apama using Command Central.....	17
Removing the Installation.....	21
Running the Software AG Uninstaller.....	22

About this Guide

To get you quickly started with the installation, this *Installing Apama* guide summarizes all important installation information. It is intended for use with the following guides:

- *Using the Software AG Installer*. This guide explains how to prepare your machine to use the Software AG Installer, and how to use the Software AG Installer and Software AG Uninstaller to install and uninstall your products.
- *Installing Software AG Products*. This guide provides detailed pre-installation, installation, and uninstallation instructions for Apama.
- *Using the Software AG Update Manager*. This guide explains how to use the Software AG Update Manager to install and uninstall fixes on your Software AG products.
- *Upgrading Software AG Products*. This guide contains information on how to upgrade Apama.

The most up-to-date versions of these guides are always available at <http://documentation.softwareag.com/> (Empower login required).

Documentation roadmap

Apama provides documentation in the following formats:

- HTML (available from both the documentation website and the doc folder of the Apama installation)
- PDF (available from the documentation website)
- Eclipse help (accessible from Software AG Designer)

You can access the HTML documentation on your machine after Apama has been installed:

- **Windows**. Select **Start > All Programs > Software AG > Tools > Apama n.n > Apama Documentation n.n**. Note that **Software AG** is the default group name that can be changed during the installation.
- **UNIX**. Display the index.html file, which is in the doc/apama-onlinehelp directory of your Apama installation directory.

The following guides are available:

Title	Description
<i>Release Notes</i>	Describes new features and changes since the previous release.

Title	Description
<i>Installing Apama</i>	Instructions for installing Apama.
<i>Introduction to Apama</i>	Introduction to developing Apama applications, and discussions of Apama architecture and concepts.
<i>Using Apama with Software AG Designer</i>	Instructions for using Software AG Designer to create and test Apama projects, develop EPL programs, define Apama queries, develop JMon programs, and store, retrieve and play back data.
<i>Developing Apama Applications</i>	Describes the different technologies for developing applications: EPL monitors, Apama queries, and Java. You can use one or several of these technologies to implement a single Apama application. In addition, there are C++ and Java APIs for developing components that plug in to a correlator. You can use these components from EPL.
<i>Connecting Apama Applications to External Components</i>	Describes how to connect Apama applications to any event data source, database, messaging infrastructure, or application.
<i>Building and Using Apama Dashboards</i>	Describes how to build and use an Apama dashboard, which provides the ability to view and interact with data views. An Apama project typically uses one or more dashboards, which are created in the Dashboard Builder. The Dashboard Viewer provides the ability to use dashboards created in Dashboard Builder. Dashboards can also be deployed as simple web pages or Web Start applications. Deployed dashboards connect to one or more correlators by means of a dashboard data server or display server.
<i>Deploying and Managing Apama Applications</i>	Describes how to deploy components with Software AG Command Central and how to deploy and manage queries. Also provides information for improving Apama application performance by using multiple correlators, for managing and monitoring Apama components over REST (Representational State Transfer), and for using correlator utilities and configuration files.

In addition to the above guides, Apama also provides the following API reference information:

- API Reference for EPL in ApamaDoc format
- API Reference for Java in Javadoc format
- API Reference for C++ in Doxygen format
- API Reference for .NET in HTML format
- API Reference for PySys in Pydoc format

Online Information

Software AG Documentation Website

You can find documentation on the Software AG Documentation website at <http://documentation.softwareag.com>. The site requires Empower credentials. If you do not have Empower credentials, you must use the TECHcommunity website.

Software AG Empower Product Support Website

You can find product information on the Software AG Empower Product Support website at <https://empower.softwareag.com>.

To submit feature/enhancement requests, get information about product availability, and download products, go to [Products](#).

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the [Knowledge Center](#).

Software AG TECHcommunity

You can find documentation and other technical information on the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.
- Access articles, code samples, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

Contacting customer support

If you have an account, you may open Apama Support Incidents online via the eService section of Empower at <https://empower.softwareag.com/>. If you do not yet have an

account, send an email to empower@softwareag.com with your name, company, and company email address and request an account.

If you have any questions, you can find a local or toll-free number for your country in our Global Support Contact Directory at https://empower.softwareag.com/public_directory.asp and give us a call.

1 Before You Start the Installation

■ About the Apama installation process	10
■ Prerequisites	11

About the Apama installation process

Software AG Installer

Apama is installed using the Software AG Installer, which you download from the Software AG Empower website at <https://empower.softwareag.com/>. You can find it in the Software Download Center (SDC).

On Windows, you will normally use the graphical installation mode (that is, the Software AG Installer GUI). On UNIX, you will either use the graphical mode or console mode. However, the Software AG Installer also has options for scripted (that is, silent or headless) execution of the installer, and for creating installation images that contain all the downloaded artifacts required to run the installer locally without connecting to a server. For detailed information, see the *Using the Software AG Installer* guide at <http://documentation.softwareag.com/> (Empower login required).

License File

Software AG provides a license file for Apama. When you select **Apama > Server** during the installation, the installer will ask for it. Copy the license file to the machine on which you want to install Apama. You can copy it to any temporary location. The installer will ask for the location of your license file and will then copy it to the Apama work directory (*apama_work_dir* /licenses/ApamaServerLicense.xml).

It is also possible to proceed with the installation without specifying a license file. In this case, however, the correlator will run with reduced capabilities (see "Running Apama without a license file" in *Introduction to Apama*).

Note: If the correlator cannot find the license file at the above location, it will also search *Apama/etc/ApamaServerLicense.xml* in the installation directory.

Side-by-Side Installations

You can install the same Apama version more than once on the same machine. And you can also install several different versions of Apama on the same machine. This may be necessary to test a new version before it is taken over into a production environment. Each version, however, must be installed in a separate directory. For example, when Apama is already installed in the directory *SoftwareAG*, you can install a second instance of Apama in a directory named *SoftwareAG2*.

Community Edition Installer

Most users will use the Software AG Installer to download and install Apama, or any other required Software AG products. Some Apama customers, however, will also have access to a "Community Edition" installer which comes as a single .zip or .tar.gz file that can be installed without connecting to Empower. This file only includes Apama itself. Therefore, it cannot be used to install Apama Capital Markets Foundation, Capital

Markets Adapters, or any other Software AG products. Aside from this difference, both installation mechanisms operate in much the same way.

Prerequisites

Keep in mind that the information below is just a summary of the most important installation information for Apama. For detailed information on all requirements, see *Using the Software AG Installer* and *Installing Software AG Products*.

Supported platforms

Make sure that you are running one of the supported operating system versions. For detailed information, see the *Supported Platforms* document for the current Apama version, which is available from the following web page: <http://documentation.softwareag.com/apama/index.htm>.

Java prerequisites

On Windows, an Oracle JRE is provided with the Software AG Installer for use when running the .exe file. No further steps are required.

On Linux, an Oracle JRE must be already installed in order to run the Software AG Installer .jar file. You can download this from <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.

For information on the required version, see the *Supported Platforms* document for the current Apama version, which is available from the following web page: <http://documentation.softwareag.com/apama/index.htm>.

Disk space requirements

The disk space requirements vary, depending on which options you want to install. For a full installation of Apama including Software AG Designer (Windows only), approximately 1.5 GB of hard-disk space is required.

System clock

Apama requires the system clock to move forwards without large jumps, and never move backwards. This applies only to the underlying clock measuring UTC (Coordinated Universal Time) seconds since 1970; daylight saving time and time zone adjustments will not affect Apama's timers.

Discontinuities in the system clock can result in disconnections and/or unpredictable application behavior, especially with any application-level timeouts. Virtual machine infrastructure can be particularly vulnerable to such clock issues. Consult your virtual machine vendor's documentation or support for recommendations on how to correctly handle time for the host operating system you are using and ensuring that the virtual machine host's clock is correctly synchronized.

Outside of virtual machines, we would strongly recommend using the Network Time Protocol (NTP) on both Windows and Linux, and ensuring that system administrators

never make manual adjustments to the system clock. NTP's default configuration is to handle time adjustments by slightly slowing down or speeding up time, avoiding any sudden jumps. The Windows Time service can cause large time jumps and is not suitable.

Windows platform notes

If you are going to run the Software AG Installer on Windows, you must have Windows system administrator privileges.

You can only install Software AG products on a local hard drive on a Windows system. You cannot install the products on a network-mounted drive.

Important: If you are going to install on a Windows system, make sure the machine on which you are going to run the installer has the latest Windows updates. On Windows 8.1 and Windows Server 2012 R2, installation will fail if the Microsoft update KB2919355 from April 2014 is not present.

Linux platform notes

Apama does not support Security Enhanced Linux (SELinux). This option should be turned off on Linux for Apama to run.

To build the samples and develop applications using the C/C++ API, development tools that are not present in the default installation of the supported platforms must be installed. On all supported Linux platforms, the GCC-C++ package and all its dependencies must be installed. These are typically provided on the installation media as part of your distribution.

If you intend to use the compiled runtime, ensure that the `binutils` package is installed.

Note that the performance of latency-critical applications can be significantly impacted by the choice of the file system where the correlator writes its log files and/or persistence database. File systems such as ext3, ext4, NFS, ZFS and GFS2 can have surprisingly poor worst-case latency especially when the system is loaded, so for latency-critical applications we would recommend use of XFS where possible.

2 Installing Apama

■ Running the Software AG Installer	14
■ After the installation	16
■ Post-installation considerations for Linux users	16
■ Installing the latest fixes	17
■ Installing Apama using Command Central	17

Running the Software AG Installer

This topic provides just a brief description on how to install Apama directly on the target machine using the Software AG Installer GUI. For detailed information on the Software AG Installer, see *Using the Software AG Installer*.

When downloading the Software AG Installer from Empower, we recommend using the .exe file on Windows and the .jar file on UNIX.

On Windows, you have to run the Installer as an administrator. When you start the .exe file from any administrative account, this will happen automatically, even if the user account control (UAC) is enabled. However, when you start the Installer from the .jar file (rather than from the .exe file), you have to explicitly use **Run as administrator** to get a successful installation.

On UNIX, you have to run `java -jar software-ag-installer-jar-filename`. Running the Installer with root privileges is not supported, but you must have permission to write to the installation directory that you are going to specify in the Installer.

You can leave most installation options at their default values. See *Using the Software AG Installer* for more details, if desired.

Important: When specifying the installation directory, make sure that the directory name has only 7-bit ASCII (English) characters. On Windows, not all Software AG products support to install into a directory that has spaces in its name (such as C:\Program Files). Apama, however, is one of the products that does support spaces in the directory name.

To install Apama

1. Start the Software AG Installer GUI as described in *Using the Software AG Installer*.
2. When the first page of the Software AG Installer GUI (the so-called Welcome panel) is shown, click the **Next** button repeatedly (and specify all required information on the shown panels as described in *Using the Software AG Installer*) until the panel containing the product selection tree appears. This tree lists the products you have licensed and which can be installed on the operating system of the machine on which you are installing.

The product selection tree includes the following nodes for installing Apama:

- **Apama.** For the main Apama product, this node allows you to install the following Apama components:
 - i. **Server.** The server components of Apama, including the correlator and associated command line tools.
 - ii. **Dashboard Viewer.** The viewer tool that allows you to view and interact with dashboards that are receiving live data from an Apama dashboard server.

- iii. **Platform Manager Plug-in.** A plug-in that allows you to manage the server components of Apama using Software AG Command Central.
- **Designer > Apama.** For the main Apama product, this node allows you to install the **Apama Application Development** component, which provides graphical tooling for creating Apama applications using Software AG Designer (based on Eclipse).

Note: On UNIX, **Server** and **Platform Manager Plug-in** are the only installation options. All other options listed above are only available on Windows.

Additional entries may be shown in the above nodes. These pertain to components that are not covered in this documentation. See the documentation for these components for more information.

The **Infrastructure** node contains **Apama Shared Files**. This is automatically selected whenever you select any of the above-mentioned components. It will be needed when installing Apama fixes.

3. To quickly select all components of the main Apama product, click **Typical Installations**, select **Apama** and click **OK**. This includes **Server** and, if running on Windows, also **Dashboard Viewer** and **Apama Application Development**. If licensed, this also includes **Capital Markets Foundation** in the **Apama** node and **Capital Markets Application Development** in the **Designer > Apama** node. Other Apama components such as **Platform Manager Plug-in** are not included in the typical installation and can be manually selected using the product selection tree if required.

The full set of Apama documentation will always be installed, no matter which Apama options you select.

4. Click **Next** to continue.
5. If the Languages panel is shown, click **Next** again as this has no affect on an Apama installation.
6. Read the license agreement, select the check box to agree to the terms of the license agreement, and click **Next**.

Note: If you are installing other products together with Apama, several panels may appear that are not explained in this documentation. See the documentation for these products for more information.

7. A panel appears on which you can specify a different location for the Apama work directory. Apama uses the work directory to write log files, and to store the license file and any other user-writable files. Non-English characters can be used in the work directory location, but they must be within the set of characters from the operating system's default character encoding.

It is recommended that you specify an empty directory or a directory that does not yet exist as the Apama work directory. If you specify a directory that does not yet exist, it will be created by the Installer. The Installer populates the work directory with some standard files and directories. The Installer will also accept a non-empty directory that already exists (for example, a work directory from a

previous installation), but will not write anything to it in this case. This ensures that important user content will not be overwritten.

When you have selected **Apama > Server** in the product selection tree, you can also specify the path to your Apama license file (see also the information on the license file in "[About the Apama installation process](#)" on page 10).

8. Click **Next** to proceed to the next panel.
9. On the last panel, review the list of products you have selected for installation. If the list is correct, click **Next** to start the installation process.

After the installation

There are no mandatory post-installation steps for Apama. However, when you have installed Apama on Linux, see "[Post-installation considerations for Linux users](#)" on page 16 for further information.

If you installed the **Apama Development Environment**, it is recommended that you start it after the installation. To do so, choose the following from the Windows Start menu: **All Programs > Software AG > Tools > Software AG Designer *n.n.*** Note that **Software AG** is the default group name that you can change during the installation.

See also the content of the `software_ag_install_dir /Apama/doc` directory, which contains the full documentation for Apama.

In the event of problems during the installation, review the log file that is written to `software_ag_install_dir /install/logs`.

Post-installation considerations for Linux users

Non-root user account

If you are going to install on a UNIX system, create a non-root user account for performing the installation and install as that user. The installation user will own all files you install. When uninstalling, use the same user account that was used at installation time.

Linux core file size setting

Linux systems are often run with their core file size limit set to zero. A consequence of this is that in the unlikely event that the correlator or an adapter crashes, no core file is written, which hinders investigation of the cause of the crash. To avoid this situation, set the core file size to unlimited in the login configuration for each user who runs Apama components.

Installing the latest fixes

It is recommended that you check whether new fixes are available for the Apama version you have just installed.

You install Apama fixes using the Software AG Update Manager. See the *Using the Software AG Update Manager* guide at <http://documentation.softwareag.com/> (Empower login required) for detailed information on this tool. This also provides information on how to run a scripted (silent/headless) installation, or how to install fixes from a downloaded image without having the Update Manager connect to Empower.

Important: The Software AG Update Manager allows you to individually select which fix packages you wish to install. However, to ensure that all dependencies between the Apama fix packages are met, it is essential that you always select, and thus install, *all* Apama fix packages. Do not try to install fixes for a subset of the Apama components you have installed.

Installing Apama using Command Central

You can provision new and update existing Apama environments using Software AG Command Central. You can do this on any machine on which Platform Manager is running. You can then invoke the Software AG Installer or Software AG Update Manager directly from Command Central and do silent installations and uninstalls of the Apama product and its product fixes.

This topic just provides a brief overview of how to install Apama using Command Central. For detailed information, see the Command Central documentation at <http://documentation.softwareag.com/> (Empower login required). You can find it under *Guides for Tools Shared by Software AG Products*.

If you want to install Apama using Command Central, proceed as follows:

1. Install a Command Central server, install Platform Manager on any machine on which you want to install Apama, and make sure the Command Central and Platform Manager servers/services have been started. The simplest way to do this is to use the Command Central bootstrapper. See *Software AG Command Central Help* for more details.

Tip: The default credentials for a new installation are "Administrator" for the user name and "manage" for the password.

2. Configure a repository for the Apama product (using either the web user interface or the `sagcc` command line interface). To do so, you can either use your Empower credentials or a locally generated image.
3. Install Apama using one of the following options:

- Using the Command Central web user interface. See *Software AG Command Central Help* for information on how to install products.
- Using the Command Central command line interface, with a command line such as the following:

```
sagcc exec provisioning products nodeAlias repoName install
artifacts=productId
```

where:

nodeAlias is the alias of the target node on which you want to install Apama, for example, "local".

repoName is the name of the product repository from which to install Apama, for example, "webMethods-X.Y".

artifacts=productId specifies the parts of the Apama product that you want to install. Available product IDs for Apama are (you separate them using commas):

This product ID	installs the following
PAMServer	Apama Server
PAMDashboardViewer	Dashboard Viewer
PAMDesigner	Software AG Designer with the Apama Development Environment
PAMspm	Platform Manager Plug-in. This Apama plug-in for Command Central's Platform Manager is required if you want to use Command Central to start, stop and configure Apama components on the current machine.

See also "[Running the Software AG Installer](#)" on page 14.

You can use the `sagcc list jobmanager jobs` command to monitor the progress of the provisioning job.

Note: The Command Central installation uses the default location of the Apama work directory. On Windows, this is in the all-users %PUBLIC% directory (for example, C:\Users\Public\SoftwareAG\ApamaWork_*n.n*) and on UNIX this is ~/softwareag/apamawork_*n.n*.

Command Central does not copy an Apama license file into the installation. You must provide a license file after installing Apama, by manually copying the file to APAMA_WORK/license/, using Command Central composite templates to copy the file into APAMA_HOME/etc/.

or by uploading a license file individually to the configuration of each correlator instance added to Command Central.

4. Install all available Apama fixes in the repository by using one of the following:

- The Command Central web user interface.
- The Command Central command line interface, by using the following command:

```
sagcc exec provisioning fixes nodeAlias Empower install  
products=PAMServer,PAMDashboardViewer,PAMDesigner,PAMspm
```

where "Empower" is a fix repository name, and `products=` specifies the list of products to be updated (these are the same product IDs as for the other `sagcc` command that is described above).

3 Removing the Installation

- Running the Software AG Uninstaller 22

Running the Software AG Uninstaller

You uninstall Apama using the Software AG Uninstaller. For detailed information on how to use the uninstaller, see the *Using the Software AG Installer* guide.

In short, you uninstall Apama as follows:

- **Windows.** Use the standard uninstall functionality of Windows. The Control Panel offers the following entry: **Software AG Products: *installation-directory***. When you choose to uninstall the directory containing your Apama installation, the Software AG Uninstaller is invoked.
- **UNIX.** Log on to the machine as the same user that installed the products, open a terminal and run the `software_ag_install_dir/bin/uninstall` script. Use the `-console` argument if you wish to run the console uninstaller rather than the graphical uninstaller.

The uninstaller will not remove the Apama work directory. If you do not want to keep its contents, you can remove it manually.