software AG

Installing Apama

Version 10.15.2

March 2023

APAMA

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About this Guide

Installing Apama summarizes all important installation information and is intended for use with the following guides:

■ *Using 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 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 On Premises*. This guide contains information on how to upgrade Apama.

■ *Software AG Command Central Help*. This guide explains how to use Software AG Command Central to install, patch, manage and upgrade your Software AG products remotely from one location.

Note:

Command Central integration is deprecated and will be removed in a later release. For installation of Apama, it is recommended to use the Software AG Installer instead.

The most up-to-date versions of these guides are always available at https://documentation.softwareag.com/.

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
Release Notes	Describes new features and changes introduced with the current Apama release as well as earlier releases.
Installing Apama	Summarizes all important installation information and is intended for use with other Software AG installation guides such as *Using Software AG Installer*.
Introduction to Apama	Provides a high-level overview of Apama, describes the Apama architecture, discusses Apama concepts and introduces Software AG Designer, which is the main development tool for Apama.
Using Apama with Software AG Designer	Explains how to develop Apama applications in Software AG Designer, which is an Eclipse-based integrated development environment.
Developing Apama Applications	Describes the the technology for developing Apama applications: EPL monitors. You can use this technology 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.
Connecting Apama Applications to External Components	Describes how to connect Apama applications to any event data source, database, messaging infrastructure, or application.
Building and Using Apama Dashboards	Deprecated. Describes how to build and use an Apama dashboard, which provides the ability to view and interact with DataViews. 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 the Dashboard Builder. Dashboards can also be deployed as simple web pages. Deployed dashboards connect to one or more correlators by means of a dashboard data server or display server.
Deploying and Managing Apama Applications	Describes how to deploy Apama applications using Docker and Kubernetes. It 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 (ApamaDoc)

- API Reference for Java (Javadoc)

- API Reference for C++ (Doxygen)

- API Reference for .NET

- API Reference for Python

- API Reference for Component Management REST APIs

Online Information and Support

Product Documentation

You can find the product documentation on our documentation website at https://documentation.softwareag.com.

In addition, you can also access the cloud product documentation via https://www.softwareag.cloud. Navigate to the desired product and then, depending on your solution, go to "Developer Center", "User Center" or "Documentation".

Product Training

You can find helpful product training material on our Learning Portal at https://knowledge.softwareag.com.

Tech Community

You can collaborate with Software AG experts on our Tech Community website at https://techcommunity.softwareag.com. From here you can, for example:

- Browse through our vast knowledge base.

- Ask questions and find answers in our discussion forums.

- Get the latest Software AG news and announcements.

- Explore our communities.

- Go to our public GitHub and Docker repositories at https://github.com/softwareag and https://hub.docker.com/u/softwareag and discover additional Software AG resources.

Product Support

Support for Software AG products is provided to licensed customers via our Empower Portal at https://empower.softwareag.com. Many services on this portal require that you have an account. If you do not yet have one, you can request it at https://empower.softwareag.com/register. Once you have an account, you can, for example:

- Download products, updates and fixes.

- Search the Knowledge Center for technical information and tips.

- Subscribe to early warnings and critical alerts.

- Open and update support incidents.

- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

1 Before You Start the Installation

Supported platforms

Before you install Apama, 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: https://documentation.softwareag.com/apama/index.htm.

Ways to install Apama

It is possible to install Apama in different ways, as described below.

Software AG Installer

You can install Apama 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 Software AG Installer* guide at https://documentation.softwareag.com/.

For more information, see "Installing Apama Using the Software AG Installer" on page 17.

Command Central

Alternatively, you can install Apama using Command Central. For more information, see "Installing Apama Using Command Central" on page 25.

> **Note:**
>
> Command Central integration is deprecated and will be removed in a later release. For installation of Apama, it is recommended to use the Software AG Installer instead.

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 a directory named `SoftwareAG`, you can install a second instance of Apama in a directory named `SoftwareAG2`.

Service packs

Some Apama releases are delivered as service packs which are to be installed using Software AG Update Manager or Command Central's fix installation functionality after the base *major.minor*.0

version has been installed using Software AG Installer or Command Central. The *Apama Release Notes* may have more information about the end of support for a specific service pack version. Note that the support lifetime for a service pack may be different, depending on the base version on which the service pack is installed.

> **Note:**
>
> Command Central integration is deprecated and will be removed in a later release. For installation of Apama, it is recommended to use the Software AG Installer instead.

Docker and Software AG images

Software AG has a presence on the Docker Hub image repository. Several images are available for Software AG products. Apama offers several runtime images to run instances of the correlator application. These images differ based on which external connectivity features are required. Apama also offers several buildtime images to be used as part of a multi-stage build to deploy Apama projects, corresponding to the runtime images. See https://hub.docker.com/search?q=softwareag%2F&type=image for the published images.

Alternatively, images for several products, including Apama, may be built from an installation using scripts included in the installation. For more information, see "Introduction to Apama in Docker" in *Deploying and Managing Apama Applications*.

Debian

On Debian-based Linux distributions, you can install Apama using the default package management tool. For more information, see "Installing Apama Using Debian apt" on page 23.

Community Edition installer

The Apama Community Edition is a freemium version of Apama that can be used to get familiar with Apama. It does not need a license and therefore has restricted functionality (see also "License Terms and Technical Restrictions" in the *Apama Release Notes*).

To install the freemium version, you have to use the "Community Edition" installer (available from https://www.apamacommunity.com/) which comes as a single `.zip` or `.tar.gz` file that can be installed without connecting to Empower.

There are two different types of community edition:

■ Full version. Includes the full version of the Apama Community Edition. The installation file for this version cannot be used to install Apama Capital Markets Foundation, Capital Markets Adapters, or any other Software AG products. Aside from these differences, both installation mechanisms (Software AG Installer and "Community Edition" installer) operate in much the same way.

■ Core components. Contains only the Apama correlator, the client APIs and the command line tools. You just unzip core edition and use it directly. It does not use the Software AG Installer.

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 2.5 GB of hard-disk space is required with approximately 1.5 GB of hard-disk space consumed. More disk space will be required depending on what applications you develop and deploy.

License file

Software AG provides a license file for Apama. See also "About Apama license files" in *Introduction to Apama*.

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

Software AG Installer

When you select **Apama > Server** during the installation with the Software AG Installer, 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/license/ApamaServerLicense.xml`).

> **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.

Command Central

Unlike using the Software AG Installer, Command Central does not lay down a license that all correlators will automatically pick up. If you are not configuring licensing for each correlator individually, ensure that a license is available in the Apama work directory (`APAMA_WORK/license/`) or in the installation directory (`Apama/etc/`).

> **Note:**
>
> Command Central integration is deprecated and will be removed in a later release. For installation of Apama, it is recommended to use the Software AG Installer instead.

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.

Persistence database backup

If using correlator persistence, you are recommended to shut down any running correlators and then take a backup of the persistence database before installing any new major or service pack version, as the persistence database is automatically upgraded when opened using a newer correlator version and cannot be downgraded or then used with the original correlator version.

See also "Using Correlator Persistence" in *Developing Apama Applications*.

Windows platform notes

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.

The port of the Apama dashboard data server must be accessible to the Apama Dashboard Viewer. If you are on a Windows system and the firewall is enabled, unblock network access for this port. The default value for the port is 3278. For security reasons, never change firewall settings such that this port is exposed to untrusted clients.

Important:

If you are going to install on a Windows system, make sure the machine on which you are going to run the Software AG Installer has the latest Windows updates.

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 Using the Software AG Installer

Prerequisites

System administrator privileges on Windows

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

You have to run the Installer as an administrator. When you start the self-extracting executable from any administrative account, this will happen automatically, even if the user account control (UAC) is enabled.

Non-root user account on Linux

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.

It is recommended that you use a non-root user account for performing the installation and running the product 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.

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 Software AG Installer*.

You can leave most installation options at their default values. See *Using 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 installing 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 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 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:

    1. **Server**. The server components of Apama, including the correlator and associated command line tools.

    2. **Cumulocity IoT Integration**. Integration with the Cumulocity IoT platform.

    3. **Dashboard Viewer**. The viewer tool that allows you to view and interact with dashboards that are receiving live data from an Apama dashboard server.

    4. **Dashboard Servers**. The Apama dashboard servers and command line tools.

        Note:
        Apama dashboards are deprecated and will be removed in a future release.

    5. **IAF & Adapters**. The Apama standalone adapter framework and associated adapters.

        Note:
        The IAF architecture is superseded by connectivity plug-ins. The standard IAF plug-ins (except for the codec IAF plug-ins and capital markets adapters) are deprecated and will be removed in a future release.

    6. **Platform Manager Plug-in**. A plug-in that allows you to manage the server components of Apama using Software AG Command Central.

        Note:

        Command Central integration is deprecated and will be removed in a later release. For installation of Apama, it is recommended to use the Software AG Installer instead.

    7. **Software AG Suite Integration**. Integration with other products in the Software AG suite and JMS.

- ■ **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:

Designer > Apama > Apama Application Development and **Apama > Dashboard Viewer** are only available on Windows. All other components listed above are available on both Windows and UNIX.

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** and **Apama Dashboard Shared Files**. They are automatically selected when you select some of the above-mentioned components. They 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 all of the components listed above with the exception of the deprecated **Platform Manager Plug-in**. If licensed, this also includes **Capital Markets Foundation** in the **Apama** node and **Capital Markets Application Development** in the **Designer > Apama** node. Apama components that are not included in the typical installation 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-writeable 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 "License file" on page 14).

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 **Install** to start the installation process.

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 Software AG Update Manager* guide at https://documentation.softwareag.com/ 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.

Running the Software AG Uninstaller

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

Uninstalling Apama service packs or fixes

As of Apama 10.3.1, it is possible to uninstall service packs and fixes. To do so, run the Software AG Update Manager, select the service pack or fix to be uninstalled, and then follow the instructions in the user interface. For detailed information, see *Using Software AG Update Manager*.

Note:

It is not possible to uninstall service packs or fixes for Apama versions before 10.3.1.

3 Installing Apama Using Debian apt

Overview of installing Apama with Debian apt

On Debian-based Linux distributions on both x86_64 and ARMv7, it is possible to install Apama using the default package management tool. Apama is located in a repository hosted on https://downloads.apamacommunity.com/debian.

To install from this repository, you must first add the repository to your `apt` configuration. See the instructions for doing this in the repository readme at https://downloads.apamacommunity.com/debian/README.txt.

Once configured, you can install Apama's core edition through the package manager:

```
apt update
apt install apama
```

If you wish to use Python plug-ins with your Apama installation, you also need to install the correct Python interpreter for your Apama release:

```
apt install apama-python
```

Fixes to Apama can be automatically applied using the package manager. If a new fix is released, it is installed with any run of the following:

```
apt update
apt upgrade
```

You can also remove Apama using the `apt` tool:

```
apt remove apama apama-python
```

4 Installing Apama Using Command Central

Note:

Command Central integration is deprecated and will be removed in a later release. For installation of Apama, it is recommended to use the Software AG Installer instead.

Overview of installing Apama with 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 uninstallations 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 https:// documentation.softwareag.com/.

The information about the available installation nodes and components (Server, Dashboard Viewer, Designer) in "Running the Software AG Installer" on page 18 also applies to Command Central.

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

1. Install a Command Central server, install Software AG Platform Manager (SPM) 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. Configure each SPM instance as an installation in the Command Central server. See *Software AG Command Central Help* for more details.

   Tip:

   The default user name for a new installation is "Administrator". The password is set during the installation.

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 create credentials in the Command Central server using your Empower credentials and then define a repository using the credentials, or use a locally generated image.

3. Install Apama and apply the latest fixes 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 templates as described at https://github.com/SoftwareAG/ sagdevops-templates/tree/master/templates/sag-apama-correlator. This template installs the latest fixes and then creates a single correlator. The correlator is configured to use a license if Command Central has been given an appropriate license.

   Ensure that a license file is available. See also "License file" on page 14.

   Note:

Unlike using the Software AG Installer, Command Central does not let you specify a different location for the Apama work directory. 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.

Uninstalling Apama with Command Central

If you installed Apama using Command Central, it is recommended that you also use Command Central to uninstall Apama. See *Software AG Command Central Help* for details.

Note:

Command Central integration is deprecated and will be removed in a later release. For uninstallation of Apama, it is recommended to use the Software AG Uninstaller instead.

5 After the Installation

Post-installation steps

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 30 for further information.

If you installed Software AG Designer (Windows only), 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 can be changed during the installation with the Software AG Installer.

See also the content of the `Apama/doc` directory in your Apama installation, 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

Linux core file size setting (RLIMIT_CORE)

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.