Installing and Upgrading webMethods Broker

Version 10.15

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WEBMETHODS

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This guide contains information on the hardware requirements, instruction for installing and uninstalling Broker, and upgrading Broker.

Important:
Broker is deprecated.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies service names and locations in the format *folder.subfolder.service*, APIs, Java classes, methods, properties.
Italic	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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/publishers/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 Hardware Requirements

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Overview

This chapter provides information on the minimum and recommended hardware requirements for webMethods Broker. Use this guide in conjunction with *Installing Software AG Products* documentation.

The minimum and recommended hardware requirements for webMethods Broker is as follows:

Product	Hard Drive Space	RAM	CPUs
webMethods Boker	2GB(10GB)	512MB(2GB)	1 (2)

Additional Hardware Requirements

webMethods Broker might need additional hard drive space if your documents are large, or if your clients use many guaranteed documents.

For information on hardware requirements, see Hardware Requirements section in *Installing Software AG Products*.

2 Version Interoperability

Broker Server 10.15 is compatible with webMethods Broker 10.5, webMethods Broker 9.6 servers, command-line utilities, Broker client APIs for C, C#, Java, JMS, and webMethods Broker user interface in My webMethods.

Broker Server 9.6 and Broker Server 10.5 versions are compatible with webMethods Broker 10.15 server, command-line utilities, Broker client APIs for C, C#, Java, JMS, and the webMethods Broker user interface in My webMethods.

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Overview

This chapter provides instruction on preparation, installation, and uninstallation instructions for Broker. These instructions are intended for use with *Using Software AG Installer*. That guide explains how to prepare your machine to use the Software AG Installer, and how to use the Software AG Installer to install and uninstall Broker . For more information, see *Using Software AG Installer*.

Installing Broker

Software Requirements and Considerations

- If you are going to install on a Linux system, the library libcrypt.so must be presentto support the security infrastructure. If you do not see the libcrypt.so file in the /usr/lib64 directory for Linux x86_64, install the rpm package glibc-devel.
- If you are going to install on a Linux x86_64 system, install the rpm package compat-libstdc++ from your operating system distribution using the vendor instructions.

Prepare Your Machine

If you are installing Broker on a UNIX system:

- Broker Monitor and Broker Server require certain minimum system and user limits on UNIX systems. Ask your system administrator to set the following values for each process:

Limit	Value
Maximum threads	`512`
Maximum open files	`8192`
Core dump size	`unlimited`

- If you are going to configure Broker Server to create data files on an NFS-mounted partition, mount the partition using the command below. The options on the command help protect data integrity.

```
mount -o forcedirectio,hard,nointr,proto=tcp host:/path /mount_point
```

Option	Description
`forcedirectio`	By default, NFS caches data on client. This option disables the caching which allows direct synchronous write to Broker storage log files preventing the storage corruption due to partial writes.
`hard`	By default, if the NFS server does not respond to requests from the Broker Server, the Broker Server tries a few times and then fails. The

Option	Description
	`hard` option forces the Broker Server to keep retrying until the NFS server responds. The Broker Server hangs during this period.
`nointr`	Prevents users from shutting down the Broker Server while it waits for the NFS server to respond.
`proto=tcp`	By default, the NFS-mounted partition uses the user datagram protocol (UDP) protocol to communicate with the Broker Server. The proto=tcp option forces the partition to use transmission control protocol (TCP) instead. TCP is more reliable than UDP.

Suppose the partition you want to mount is on a machine named netappca, the data directory on the partition is wmbroker_data, and you want to mount the partition on the local file system at /var/opt/wmbroker_data. The command would be as follows:

```
mount -o hard,nointr,proto=tcp netappca:/wmbroker_data /var/opt/wmbroker_data
```

For information on other ways to protect data integrity, see your NFS server documentation.

- If you are going to install Broker Server on an NFS file system, the Basic Authentication feature will only work if you mount the NFS file system with the suid option, which allows set-user-identifier or set-group-identifier bits to take effect.

Install Products

Start the Installer, Provide General Information, and Choose the Products to Install

Read the requirements in *Using Software AG Installer*(for example, the requirement to create a user account that has the proper privileges for Windows and that is non-root for UNIX). Follow the instructions in that guide to start the installer and provide general information such as proxy server, release to install, installation directory, and how to use the product selection tree.

Important:
Unless otherwise stated for a specific product, do not install products from this release into a Software AG directory that contains products from any other release. Unless otherwise stated for a specific product, you cannot mix products from different releases in the same installation directory; if you do so, you will experience problems or be unable to access functionality.

On the product selection tree, select the products to install.

After the product selection tree, the installer displays the language pack selection tree. For information on language packs, see the international operating environments appendix in this guide. The installer then displays panels (GUI mode) or prompts(console mode) that ask for product configuration information. Most are self-explanatory, so this section shows only the panels that require explanation. The information and fields on the prompts is identical to the information and fields on the panels.

Important:

Make sure all ports you specify on panels or in response to prompts are not already being used by other products on your machine. The installer cannot detect whether ports are in use when products are shut down, and the shutting down of products is a requirement for running the installer. See the list of default ports used by Software AG products.

Supply Product Configuration Information

When you install Broker, you install the following:

- A Broker Monitor. Broker Monitors continually check the state of Broker Servers and automatically restarts them if they stop running.
- Optionally, a Broker Server. Broker Servers host Brokers; they receive client requests, send them to Brokers, and return responses to clients. They also manage memory and disk resources for the Brokers they host.
- A default Broker, if you created a Broker Server. Brokers execute client messaging requests.

Field	Entry
IP address to bind to	By default, Broker Monitor will bind to all IP addresses on the local machine. If necessary, bind Broker Monitor to a specific IP address instead.
Create a Broker Server Configuration	Every Broker Server has it own data directory, which holds theBroker Server's configuration file and log files, and storage session, which stores configuration (metadata) and run-time data. You would *not* create the Broker Server configuration at this time (that is, using the installer) if you want to use a different storage size than is offered by the installer or if you want to create a combined storage session for configuration and run-time data. If you do not need to back up configuration data without shutting down your Broker Server, using a combined session might save you a small amount of disk space. If you choose to not create the Broker Server configuration at this time, you must create it after installation is complete, using instructions in Administering webMethods Broker . You would create the Broker Server configuration at this time (that is, using the installer) if you want to use a storage size that is offered by the installer and you want to create separate storage sessions for configuration (metadata) and run-time data. Using separate storage sessions minimizes the risk of corruption that goes with a combined storage location and enables you to back up configuration data without having to shut down your Broker Server. Software AG recommends creating separate sessions. You cannot later change from a combined session to separate sessions or vice versa. To create the Broker Server configuration, select the check box and complete the fields below.

Field	Entry
Data directory	Full path to the directory for Broker Server data. If you install multiple Broker Server instances on the same machine, use a different data directory for each instance.
Storage size	Select a pre-configured storage session for the Broker Server that can handle your expected usage needs. ■ **Small**. Ideal for running development Broker Servers or small number of production integrations, low document volumes, and no document logging. Fastest Broker Server startup time. ■ **Medium**. Standard deployment size, fits more cases than **Small**; larger maximum transaction size and twice the storage capacity of **Small**. Broker Server startup time two times longer than **Small**. ■ **Large**. Suitable for production deployments with many integrations running at high document volumes, possibly using document logging as well. Broker Server startup time two times longer than **Medium**, four times longer than **Small**.

When determining the appropriate size for the log file, the factors to balance are Broker Server startup time and the desired maximum transaction size. The smaller the log file, the faster the startup; however, with a larger log file, you can send larger messages (that is, one larger-sized single document or a batch of documents). If necessary, you can remove or replace log files after installation, and you can increase or decrease their size. Startup time does *not* depend on the size of the storage file; additional storage capacity merely prevents the Broker Server from running out of room. After installation, if the amount of storage allocated turns out to be insufficient, you can add storage files and increase their size. You cannot remove storage files or decrease their size. Administering webMethods Broker provides complete information on Broker Server storage sessions and instructions on working with log files and storage files.

Complete the Installation

Install Latest Fix

Install the latest fixes on the products you installed. For instructions on using the Software AG Update Manager, see *Using Software AG Update Manager*. Each fix includes a readme file that contains instructions on installing the fix.

Make Sure Broker Server is Running and the Default Broker Exists

After installation, Broker Monitor starts automatically and then starts the Broker Server, which begins running with a default Broker. Make sure the Broker Server is running and the default Broker exists by running this command:

```
broker_status [Broker #1@]Broker Server_host[:Broker Server_port]
```

Start, Configure, and Customize Products

For instructions on starting, configuring, and customizing products, see the product documentation.

Important:
If any product you installed has a default password, you should change that password as soon as possible. For instructions, see the product documentation.

Register Daemons to Automatically Start and Shut Down Broker Monitors on UNIX Systems

You can register daemons for webMethods Broker on UNIX systems to make those products start and stop automatically at system start and shutdown time. After installation, you can use the command line tool daemon.sh to register daemons for more Software AG products. You can also use the tool to unregister daemons for Software AG product.

The daemon.sh script generates an init-script for each daemon. The naming convention for the init-script is `sag[number]instance_name` , where `sag` is a fixed prefix string, and *instance_name* is a unique identifier for the daemon instance. If you accidentally specify a non-unique *instance_name* during daemon registration, the daemon.sh script automatically adds *number* to make the init-script name unique. The table below shows the locations of the generated init-scripts.

System	Location
SLES 11, RHEL 6	/etc/init.d
SLES 12, RHEL 7	/usr/lib/systemd/system
AIX	/etc

Each product daemon has an rc-script that has these features:

- It is owned and called by the installation user (that is, the non-root UNIX user that ran the installer).
- It accepts the arguments 'start' and 'stop' to start and stop the corresponding product.

At system start and shutdown time, the init-script changes the current user ID from the root user to the user that owns the rc-script and then calls the rc-script with the start or stop option, as appropriate.

The daemon.sh command line tool is located in the *Software AG_directory* /common/bin directory. Log on to your system as the root user and call it from any current working directory. For information on the location daemon.sh command line tool and the most commonly used command line options, refer Run the daemon.sh Command Line Tool section in *Installing Software AG Products*.

webMethods Boker Daemons and rc-scripts

The table below shows the rc-script for webMethods Broker. When using the `daemon.sh -f` option to register or unregister a daemon, make sure to use the absolute path name (for example, `daemon.sh -f Software AG_directory/Broker/aw_brokerrelease`).

Product	Daemon	rc-script (under Software AG_directory)
webMethods Boker	webMethods Enterprise Broker subsystem	Broker/aw_broker1015

International Operating Environments

Software AG products are designed for use anywhere in the world, and enable you to exchange data with systems and users who speak languages other than your own.

The products use the Universal Character Set (ISO/IEC 10646-2, or Unicode) as the character set for all internal operations. At minimum, the products support the requirements of Unicode 3.0. HTML content, including administration tools, uses Unicode UTF-8 encoding.

For specific information on the testing, configuration, capabilities, and limitations of any product, see the product's readme.

Language Packs

The Software AG Installer always installs the U.S. English files necessary to run your products. However, for many products, you can also install language packs that provide translated user interfaces, messages, help, and documentation.

Most products support multiple languages at a time; you can install as many language packs as you need. For products that support multiple languages, your client setup (that is, browser language preference, default locale in which the product is started, and locale selected in your user profile) will determine which language you see. If you operate a product in a locale for which language packs are not available or installed, you will see U.S. English.

Language packs are available for webMethods Broker on all supported operating systems. Language packs are available for other products on all supported operating systems except Mac OS X.

For more information on language packs, extended character set, how to Configure Browsers and JRE Font, and Configure the Proper Locale, refer *Installing Software AG Products*.

Uninstall Broker

Follow the instructions in *Using Software AG Installer*, with the additional guidelines below.

If your Broker Monitor was configured to run as a UNIX daemon, you must un-register the daemon after you uninstall Broker. If you used the command line tool daemon.sh to register the daemon,

use that tool again to un-register the daemon (see the Register Daemons to Automatically Start and ShutDown Products on UNIX Systems section in the *Using Software AG Installer* for instructions). If you registered the daemon manually, revert your manual registration steps.

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Overview

This chapter provides information on how to upgrade from Broker 9.6 in the webMethods 9.6 release or later to Broker 10.15 in the webMethods 10.15 or later release using a side-by-side procedure. Use the information and instructions provided in this guide to migrate from Broker 9.6 or later to Software AG Universal Messaging 10.15 or later.

Requirements for upgrading Broker

Use this guide in conjunction with the *Upgrading Software AG Products* documentation.

If you need to install Broker 10.15 on a different machine than the older Broker, then use the same host name that you used for the old machine. So, you need not modify your territory/cluster setup, connection aliases, or Integration Server Messaging settings.

In the webMethods 9.7 and later releases, the Broker release number is still 9.6 and is the same release that was available with the webMethods 9.6 release. In the webMethods 10.7 or later release, the Broker release version number is still 10.5 and is the same release that was available with the webMethods 10.5 release.

If you have Broker 10.15 and it resides on its own machine, you can continue using it with your new products. Regardless of whether you install a new Broker or not, however, you must perform tasks later in this guide for Broker.

Upgrading from Old Broker to New Broker

For most type of the upgrade, the tasks you perform depend on whether the new machine is the same as or compatible with the old machine, where the word compatible means the new machine has a similar hardware architecture that is running on the same or a higher version of the same operating system.

Type of Upgrade	Instructions
9.6 and higher upgrade: The old Broker resides on its own machine, and you are going to continue using it with the new webMethods release.	Point Broker 10.15 clients, including Integration Server or Microservices Runtime 10.15 or later, to the old Broker.
9.5 upgrade: You installed the new Broker on an IBM System z machine that is running SUSE Linux Enterprise Server or Red Hat Enterprise Linux.	Create new storage and then migrate the Broker Server configuration from the old storage to the new storage using the Broker export\import utilities. For instructions, see *Administering webMethods Broker* 10.15.
You installed the new Broker on a machine that is not compatible with the old machine.	Create new storage and then migrate the Broker Server configuration from the old storage to the new storage using the Broker export\import utilities. For instructions, see *Administering webMethods Broker* 10.15.

Type of Upgrade	Instructions
You installed the new Broker on the same machine as the old Broker, or on a machine that is compatible with the old machine.	Follow the instructions in "Create a Broker Server and Use the Old Storage" on page 23, below.

Create a Broker Server and Use the Old Storage

1. Back up the old data directory.

2. Go to the *old_Software AG_directory*/Broker/bin directory and back up the old awbrokermon.cfg file.

3. Open the awbrokermon.cfg file and note the location of the old data directory as specified on the dataDir parameter.

4. Stop the old Broker Server, go to the *old_Software AG_directory*/Broker/bin directory, and run this command:

   ```
   server_config remove full_path_to_old_data_directory
   ```

   When asked whether to remove the Broker Server from the Broker Monitor configuration, enter Y.

5. If you need to copy the data directory to a new location (for example, because the old and new Broker installations are on different machines), do the following:

   a. Copy the old data directory to the new location.

      You might have old storage files (for example, .stor and .data files) that were located outside the old data directory. You can copy these files to the new data directory, or you can copy these files to a location outside the new data directory.

   b. On the machine that hosts the new Broker, open a command window or shell, go to the *new_Software AG_directory*/Broker/bin directory, and run the command below. The command configures the Broker Server to use the new data directory paths for the old storage files.

      If you copied old storage files to a location outside the new data directory, use the `-qs_map_file` option for each old storage file to map the file's location on the old machine to the file's location on the new machine.

      ```
      server_config relocate full_path_to_new_data_directory [-qs_map_file
            full_path_to_old_storage_file_in_old_location
            full_path_to_copy_of_storage_file_in_new_location]
      ```

6. If you are migrating from and to multi-home machines (that is, machines that have multiple network interfaces and IP addresses), open the awbroker.cfg file and update the

broker-ipaddress configuration to point to the new machine. If you do not, you might experience a port binding error when you create the Broker Server.

7. Add the Broker Server. On the machine that hosts the new Broker Server, open a command window or shell, go to the *new_Software AG_directory*/Broker/bin directory, and run the command below. Specify the same port for the new Broker Server that you used for the old Broker Server.

```
server_config add full_path_to_new_data_directory -k 10.15_license_file -p old_port
```

   Broker Server details are automatically added to the Broker Monitor startup configuration.

8. If you installed the new Broker on a different machine than the old Broker but you could not use the same host name for the new machine, update the host name in the awbroker.cfg file.

9. Make sure the new Broker Server is running, as follows:

System	Steps
Windows	a. Open the Windows Services window and ensure that the status of the **Software AG Broker Server 10.15**(*port*) service is **Started**. b. Right-click the service and click **Properties**. Make sure the **Path to Executable** field points to the awbroker file for 10.15.
UNIX	a. Run the command `ps -ef | grep awbroker`, which prints all running Broker processes including the path to the executable. Make sure the output text shows a line like this: *full_path_to_new_Software AG_directory*/Broker/bin/awbroker -d *full_path_to_new_data_directory* b. Make sure the `awbroker` process is running and that it is running from the 10.15 `awbroker` file.