

Installing webMethods Products

Version 9.5 SP1

November 2013

This document applies to webMethods Product Suite Version 9.5 SP1 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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About this Guide

This guide provides product-specific preparation, installation, and uninstallation instructions for installing and uninstalling webMethods Product Suite 9.5.

Note: For instructions on installing products not covered in this guide, see the product documentation.

This guide is intended for use with *Using the 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 and Software AG Uninstaller to install and uninstall your products.

Important! If you want to upgrade products, you must use the instructions in the appropriate product upgrade guide. The instructions in this installation guide do not cover upgrades, so following the instructions in this guide for upgrades would have unpredictable results.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies storage locations for services on webMethods Integration Server, using the convention <i>folder.subfolder:service</i> .
UPPERCASE	Identifies keyboard keys. Keys you must press simultaneously are joined with a plus sign (+).
<i>Italic</i>	Identifies variables for which you must supply values specific to your own situation or environment. Identifies new terms the first time they occur in the text.
Monospace font	Identifies text you must type or messages displayed by the system.
{ }	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.

Convention	Description
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Documentation Installation

You can download the product documentation using the Software AG Installer. The documentation is downloaded to a central directory named `_documentation` in the main installation directory (SoftwareAG by default).

Online Information

KEYWORDS:

FILENAME: RE-WEBM_ONLINE_INFORMATION

You can find additional information about Software AG products at the locations listed below.

If you want to...	Go to...
Access the latest version of product documentation.	Software AG Documentation website http://documentation.softwareag.com
Find information about product releases and tools that you can use to resolve problems. See the Knowledge Center to:	Empower Product Support website https://empower.softwareag.com
<ul style="list-style-type: none"> ■ Read technical articles and papers. ■ Download fixes and service packs. ■ Learn about critical alerts. 	
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If you want to...	Go to...
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Legal

FILENAME: `_LEGAL_STATEMENT`

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1 Software and Hardware Support and Requirements

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Recommendations

Software AG strongly recommends that you create installation images of your webMethods products and store them on your internal network. Create an image for each operating system on which you plan to install that is covered by your license agreement. Storing images enables you to ensure consistency across installations over time; the installer provides only the latest product releases, while installation images contain the product releases you download into them. In addition, installing from images helps you reduce WAN traffic and improve installation speeds. For instructions on creating an installation image, see *Using the Software AG Installer*.

Operating System Support

For information on operating systems that are supported by your webMethods products, see the *webMethods System Requirements*.

Special Considerations for webMethods Broker

- On Windows and Linux systems, Software AG offers dedicated 64-bit and 32-bit versions of Broker Server. The 64-bit Broker Server is supported on 64-bit systems. The 32-bit Broker Server is supported on 32-bit systems.
- On Solaris, HP-UX, and AIX systems, if you install the webMethods Broker C API, Software AG installs both a 64-bit and a 32-bit version. The 64-bit C API is installed in the *Software AG_directory/Broker/lib* directory. The 32-bit API (LP32 Object Code) is installed in the *Software AG_directory/Broker/lib32* directory.

Special Considerations for Integration Server

- Integration Server supports Web applications and JavaServer Pages (JSPs) on Windows and Solaris systems.
- Integration Server supports C/C++ code generation on OS/JVM bit mode 32/32 and 64/32 platforms only.
- Integration Servers on Mac systems cannot connect to webMethods Brokers using SSL.

Special Considerations for Process Performance Manager

You cannot install Process Performance Manager on integrated network drives or on substituted drives.

Special Considerations for Universal Messaging

- If you anticipate large-scale numbers of client connections or throughput, Software AG recommends using a 64-bit JVM for Universal Messaging realm servers to enable larger heap sizes.
- On HP-UX systems, shared memory drivers are currently not supported due to an implementation problem with the HP JVM.

RDBMS Support

For information on RDBMSs that are supported by your webMethods products, see the *webMethods System Requirements*. For information on supported database drivers, see “[webMethods Products and Databases](#)” on page 90.

Browser Support

webMethods products require an Internet browser. For information on supported browsers, see the *webMethods System Requirements*.

JDK Support

On Windows systems, the .exe file you use to start the Software AG Installer includes the JRE needed to run the installer and the uninstaller. The installer installs a separate JDK for the products in the *Software AG_directory\jvm* directory and configures the products to use it.

On UNIX systems, you must install a JDK to run the installer and uninstaller yourself, as instructed in *Using the Software AG Installer*. The installer installs a separate JDK for the products in the *Software AG_directory/jvm* directory and configures the products to use it.

On Mac systems, you must install a JDK to run the installer and uninstaller yourself, as instructed in *Using the Software AG Installer*. The installer configures the products to use the JDK you install, so the JDK must be one that is supported by both the installer and your products.

For information on supported JDKs, see the product system requirements on the [Software AG Documentation Web site](#).

Apply maintenance updates from the appropriate vendor to the installed JDK on a regular basis.

The installed JDKs contain Java Cryptography Extension (JCE) Limited Strength Jurisdiction Policy Files. If you want your products to be able to run in FIPS mode, or use algorithms such as 256-bit AES, however, your JVM must use JCE Unlimited Strength

Jurisdiction Policy Files. Download those files from the appropriate Web site below to the `ire/lib/security` directory that you use to run Integration Server and install the files using the instructions in the vendor documentation.

Hardware Requirements

The table below lists the minimum and recommended hardware requirements for most webMethods products. Recommended amounts are shown in parentheses.

Products that are installed as packages on Integration Server (such as CloudStreams and Mediator) have no hardware requirements above the host Integration Server.

For hardware requirements for ApplinX, EntireX, and CentraSite, see the chapters for those products in this guide.

Important! The hardware requirements below are for products only. They do not include 2GB of hard drive space for Software AG infrastructure shared libraries required by most products and installed once per installation directory. They do not include requirements for supporting software such as RDBMSs. You must determine the overall hardware requirements for each of your machines based on the overall requirements of your operating system and software.

Product	Hard Drive Space	RAM	CPUs
ActiveTransfer Server	100MB (200MB)	512MB	1
webMethods Broker	750MB (1.2GB)	512MB (2GB)	1
Command Central	500MB	512MB (1GB for 100 nodes)	1 (2)
Content Service Platform Server	1GB	2GB	1
Database Component Configurator	60MB		
Deployer	20MB		
Designer with all Software AG plug-ins	5GB	1.5GB (2GB)	1 (2)
Event Server	300MB (450MB)	256MB (512MB)	1
Integration Server	300MB (500MB)	1GB (2GB)	1
MashZone and Process Performance Manager	10GB	6GB	2
Mobile Designer	1GB	1GB	1
My webMethods Server	300MB	1GB (2GB)	1
OneData			
Server	512MB	2GB (4GB)	1 (2)

Product	Hard Drive Space	RAM	CPUs
MDR Modules	50MB		
Customer MDM Template	20MB		
Optimize			
Analytic Engine	1GB	4GB (8GB)	2 (4)
Application Monitoring Data Collector	500MB	2GB	1
Infrastructure Data Collector	300MB	2GB*	1
Web Service Data Collector	100MB	256MB	1
Platform Manager	500MB	256MB	1
Process Performance Manager Analysis GUI	5GB	4GB	1
Terracotta Server	200MB (500MB)	4GB	2
Trading Networks Server	50MB		1
Universal Messaging realm server	500MB	1GB	1

Additional Hardware Requirements

This section describes additional requirements you must consider when determining actual hardware requirements for the indicated products.

Product	Additional Requirements
ActiveTransfer Server	ActiveTransfer Server needs additional hard drive space if you use the hard drive as your virtual file system. The space required depends on the total size of documents ActiveTransfer Server needs to store, upload, and download. ActiveTransfer Server might need additional hard drive space for log files.
webMethods Broker	webMethods Broker might need additional hard drive space if your documents are large, or if your clients use many guaranteed documents.
Deployer	Deployer needs additional hard drive space for the deployment projects you create. When allocating space, allow for the number of projects to increase over time.
Designer	<i>Using the Software AG Installer</i> lists free space the Software AG Installer requires in its system temp (Windows) or temporary (UNIX) directory. For Designer Eclipse, the installer needs 700MB additional free hard drive space in that directory.

Product	Additional Requirements
EntireX	<i>Using the Software AG Installer</i> lists free space the Software AG Installer requires in its system temp (Windows) or temporary (UNIX) directory. For EntireX, the installer needs 800MB additional free hard drive space in that directory.
Mobile Designer	You will need additional space to accommodate the SDKs for the mobile devices for which you want to develop applications.
OneData	OneData needs additional hard drive space for temp, import, and export files in the <i>Software AG_directory\OneData\config</i> directory.
Optimize Analytic Engine	<p>The Analytic Engine needs 1GB virtual swap space and a disk subsystem with 10GB available free space. In a production environment, the disk subsystem must have a redundant array of independent disks (RAID 5), an UltraWide SCSI, and 10K to 15K RPM drives.</p> <p>Also in a production environment, the Analytic Engine needs additional hard drive space for log files. The recommended amount is 100MB; the engine needs 50MB of space for each log file.</p>
Optimize Web Service Data Collector	Each Web Service Data Collector needs 128MB of virtual swap space. In a production environment, each Web Service Data Collector needs additional hard drive space for log files. The recommended amount is 75MB; each Web Service Data Collector needs 5MB of hard drive space for each log file. More hard drive space might be needed if you use debug level or higher logging.
Process Performance Manager	Process Performance Manager might need additional RAM and hard drive space, depending on the number of process instances you import and store in Process Performance Manager. The more process instances, the more RAM and hard drive space you will need.
Trading Networks	To use large document handling, Trading Networks Server needs additional hard drive space on which to temporarily save documents (instead of storing them in memory). For detailed information, see <i>webMethods Trading Networks User's Guide</i> .

Product	Additional Requirements
Universal Messaging	<p>If you use persistent topics or queues, or persistent messages, Universal Messaging needs additional hard drive space to persist the published data. The amount of space required would be loosely based on this equation: messages per second x message size x message time to live. If you store messages in memory only, Universal Messaging needs additional heap within the JVM to hold references to these messages. The heap size required is based on the same equation.</p> <p>Universal Messaging realm servers support high-performance spin locks. If you enable spin locking for a realm server, and then add the realm server to a cluster, the realm server needs two additional CPUs to handle high-performance cluster event processing.</p> <p>If you enable a Universal Messaging realm server to use shared memory, the realm server needs two additional CPUs for each client that connects to it with shared memory.</p>

Product Licenses

You must provide license files to install and, later, to start some webMethods products. Software AG sends these license files with your installation message. When you provide the license files during installation, the installer validates that:

- The license file is the correct one for the product.
- The license file has not been changed.
- The license file has not expired.
- The product is licensed on the operating system on which you are installing.

You will only be able to install a product if its license file passes these checks. The products will repeat these checks at startup.

2 Installing and Uninstalling CentraSite

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Overview

This chapter provides product-specific preparation, installation, and uninstallation instructions. These instructions are intended for use with *Using the 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 your products. It describes the various methods you can use to install and uninstall, such as using the installer wizard, the installer console mode, an installation script, or an installation image. It lists the JDK to use to run the installer, and explains installation and uninstallation logging.

Important! Do not install products from webMethods product suite 9.0 into a directory that contains products from any other release.

Operating System, Browser, and JDK Support

For information on operating system and browser support for CentraSite, see the *webMethods System Requirements*. For information on JDK support, see [“JDK Support” on page 15](#).

Hardware Requirements

The table below lists the minimum and recommended hardware requirements for CentraSite. The CentraSite Registry Repository manages assets and asset metadata. The CentraSite Application Server Tier hosts the CentraSite GUIs and supplies the UDDI interface to the registry. Recommended amounts are shown in parentheses.

Important! The hardware requirements below are for CentraSite only. They do not include 2GB of hard drive space for Software AG infrastructure shared libraries required by most products and installed once per installation directory. You must determine the overall hardware requirements for each of your machines based on the overall requirements of your operating system and software.

CentraSite Component	Hard Drive Space	RAM	CPUs
Registry Repository*	2.25GB (3GB)	32-bit 4GB, 64-bit 8GB	1 (2)
Application Server Tier*	2.25GB (3GB)	4GB (8GB)	1 (2)

*Includes 2GB hard drive space, 1GB RAM, and 1 CPU for required and automatically installed infrastructure components.

Shut Down Products

Shut down all non-Software AG applications that are running on the machine on which you are going to install. If these applications are not shut down, product files might become corrupted.

If you are installing new Software AG products into an existing Software AG product installation directory, running Software AG products in that directory must be shut down or the installer will not be able to update key files that are locked by the operating system. The installer will automatically shut down many of these products and then restart them after installation. However, there are some products you must shut down manually before running the installer (and restart manually after installation is complete), as follows:

Product	Steps
CentraSite	Shut down Application Server Tiers by stopping the CentraSite Apache services and the Runtime (previously named Tomcat Server) services. Then shut down the Registry Repository by stopping its service.
Content Service Platform	See the instructions in the product documentation.
Optimize	For a UNIX system, use the instructions in the product documentation. For a Windows system, shut down products running as applications from the Start menu, and shut down products running as services from the Services window. Services are listed as Software AG <i>product release</i> .
Terracotta Server	Run the <code>bin/stop-tc-server.{bat sh}</code> command.

During installation, if the installer still finds running Software AG products in the target installation directory, it will prompt you to shut them down.

Prepare Your Machine

- If the vendor for your operating system recommends installing the latest service packs, patch-bundles, and fixes, Software AG encourages you to follow that recommendation. If you experience problems with installed service packs, patch-bundles, or fixes, report those problems directly to the vendor.
- If you are going to install on a UNIX system:
 - a Make sure you have set sufficient user limits for the shell you use to start the installation and the product daemons. For example, the daemons for the CentraSite database and infrastructure will run out of memory if they are started from the shell with a low user limit for data. If your system policy allows it, Software AG recommends setting the value for `coredump`, `data`, `file`, `memory`, and

threads to unlimited, and the value of `nfiles` to 8192. For more information about setting and displaying the ulimits, read the man page or ask your system administrator.

- b Set the `shmmax` parameter to the memory (RAM) that is physically available on your machine. Otherwise you might have problems during CentraSite startup.
- If you are going to install on a Linux system, the library `libcrypt.so` must be present to support the webMethods security infrastructure, or the login using OS user names/authentication will not work. If you do not see the `libcrypt.so` file in the `/usr/lib64` directory for Linux x86_64, or `/usr/lib` for Linux x86, 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.

Install CentraSite

Start the Installer, Provide General Information, and Choose CentraSite Components

Follow the instructions in the guide *Using the Software AG Installer* to start the installer and provide general information such as proxy server, release to install, and installation directory. That guide also provides information about the product and language pack selection trees.

If you are installing the CentraSite Registry Repository or Application Server Tier, do not install any other webMethods products in the same installation directory as either of those components. This separation is necessary to support future upgrades. The Registry Repository and Application Server Tier can be upgraded using an overinstallation or side-by-side procedure, but other webMethods products support only side-by-side upgrade. Overinstallation of the Registry Repository or Application Server Tier would upgrade suite-wide infrastructure in the installation directory, and this would render other webMethods products in the same installation directory inoperable.

On the product selection tree, choose the CentraSite components to install. You can install the CentraSite Registry Repository and Application Server Tier in the same directory on the same machine or on different machines. If you install the components on different machines, or in the same directory on the same machine but at different times, you must install the Registry Repository first.

Note: You cannot install multiple instances of the CentraSite 9.0 Application Server Tier or Registry Repository on the same machine.

If you want to use Command Central to manage CentraSite, select the Platform Manager plug-in for CentraSite.

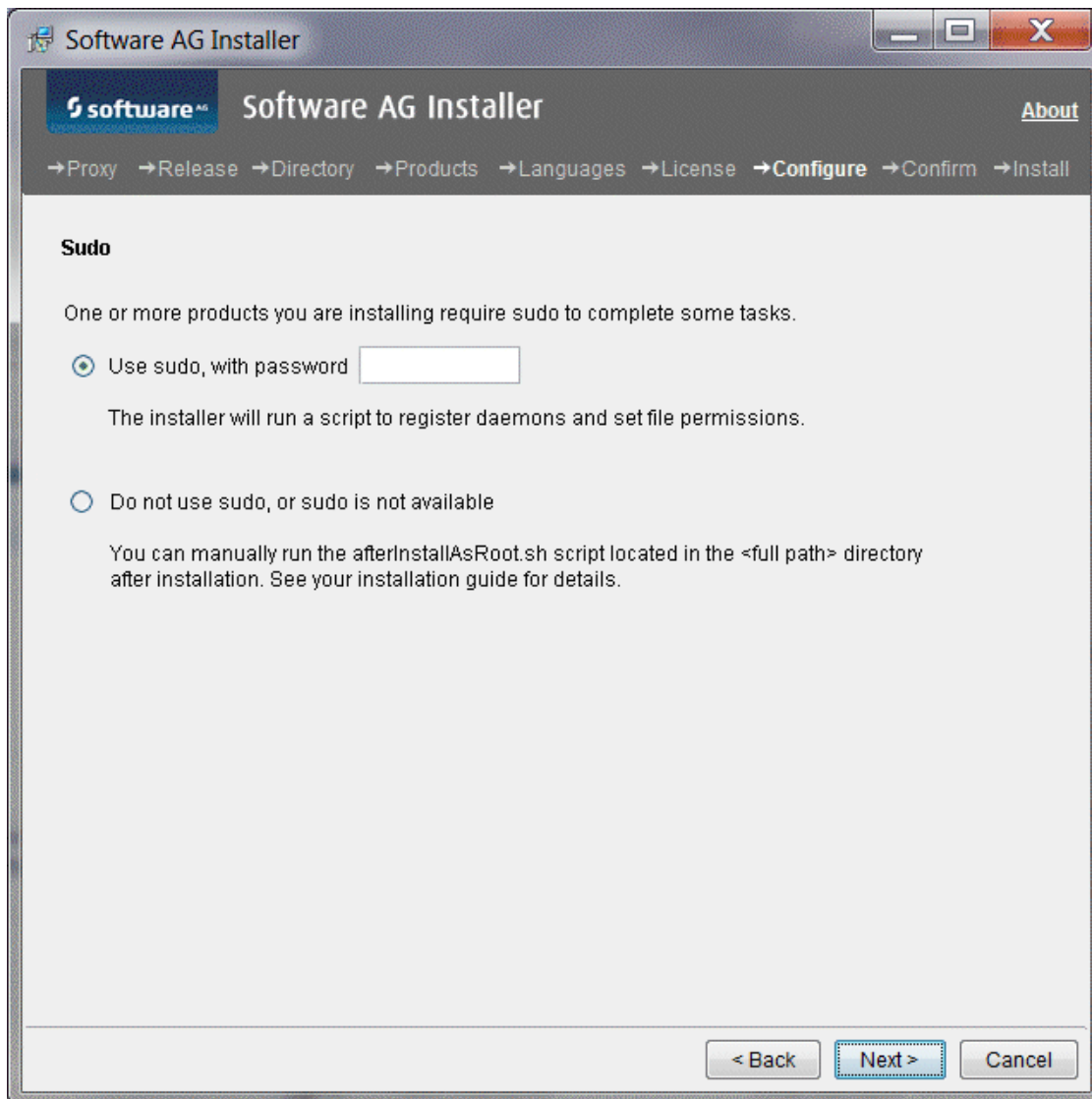
After the tree, the installer displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. The sections below show the panels, but the information and fields on the panels are identical to the information and fields in the prompts.

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. For a list of default ports used by Software AG products, see the [default ports](#).

Supply Product Configuration Information

Sudo

When you install on a UNIX system, the panel below might appear.



You must either have the installer execute the `afterInstallAsRoot.sh` script, or you must run the script manually after installation as explained later in this chapter. If you want to have the installer to execute the script, the user under which you are running the installer must be in the `sudoers` configuration.

For security reasons, the installer does not store the `sudo` password in installation scripts. If you are creating or installing from an installation script, therefore, the option to use `sudo` is not available. You must execute the `afterInstallAsRoot.sh` script manually after installation.

CentraSite

Software AG Installer

software AG Software AG Installer [About](#)

→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install

CentraSite

ActiveSOA License file:

Registry Repository

Application port:

Administration port:

HTTPS port:

Application Server Tier

HTTP server port:

Web application server port: SSL port:

Remote Registry Repository

Host or IP address:

HTTPS port:

Field	Entry
ActiveSOA license file ports	If you licensed CentraSite ActiveSOA, full path to the license file.
Application Server Tier ports	Defaults shown are for the bundled Apache HTTP and Tomcat servers.
Remote Registry Repository fields	Required when installing the Application Server Tier if the Registry Repository is on a different machine. Do not use localhost.

Complete the Installation

Register Daemons and Set File Permissions

If you installed CentraSite on a UNIX system and did not use sudo, the installer was not able to register daemons and set file permissions for the CentraSite Registry Repository Extension or Tomcat Server.

Perform these tasks now by executing the script *Software AG_directory/bin/afterInstallAsRoot.sh* as the root user.

Important! You must run this script or some products might not work correctly.

Apply Latest Fixes

Apply the latest fixes for the products you installed. For instructions, see *Using the Software AG Update Manager*.

Uninstall CentraSite

Important! If you are going to uninstall CentraSite, and the CentraSite Registry Repository is on a different machine than the Application Server Tier, uninstall the Application Server Tier first, and then uninstall the Registry Repository.

- 1 Shut down all non-Software AG applications that are running on the machine from which you are going to uninstall. If these applications are not shut down, the uninstaller will not be able to remove key files that are locked by the operating system.
- 2 If Software AG products in the directory from which you are going to uninstall are running, those products must be shut down or the uninstaller will not be able to remove key files that are locked by the operating system. The uninstaller will automatically shut down many of these products, but you must shut down some products manually before running the uninstaller. For details, see the section on shutting down products earlier in this chapter.
- 3 If you are going to uninstall all products in the installation directory, and you want to keep files you have stored in the *Software AG_directory/install* directory, move the files to a non-Software AG directory. The uninstaller will delete all files from the *Software AG_directory/install* directory except the logs and the installer-maintained *history.txt* file.

- 4 If you are uninstalling from a UNIX system, and you used sudo to register daemons and set file permissions during or after installation, you must also use sudo to unregister daemons and remove file permissions.
 - If you are not using an uninstallation script to uninstall, you can tell the uninstaller to perform this task, or you can perform this task now by executing the script *Software AG_directory/bin/beforeUninstallAsRoot.sh* as the root user.
 - If you are using an uninstallation script, the uninstaller cannot execute the script because it does not store the sudo password, for security reasons. You must execute the script yourself now.

Important! You must either have the uninstaller execute the script or run it yourself, or some products might not work correctly.

- 5 Run the Software AG Uninstaller as instructed in *Using the Software AG Installer*.
- 6 Reboot your system.
- 7 The Software AG Uninstaller does not delete files that were created after you installed your products (for example, user-created or configuration files), nor does it delete the directory structure that contains the files. If you are going to reinstall into the same directory, delete the product directories after uninstallation is complete or, if you want to save the files, move them.

3 Installing and Uninstalling ApplinX

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- Typical Development Installation 32
- Operating System, Browser, and JDK Support 32
- Hardware Requirements 32
- Shut Down Products 33
- Prepare Your Machine 34
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Overview

This chapter provides product-specific preparation, installation, and uninstallation instructions. These instructions are intended for use with *Using the 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 your products. It describes the various methods you can use to install and uninstall, such as using the installer wizard, the installer console mode, an installation script, or an installation image. It lists the JDK to use to run the installer, and explains installation and uninstallation logging.

Important! Do not install products from webMethods product suite 9.0 into a directory that contains products from any other release.

Typical Development Installation

The Software AG Installer offers typical development installations of webMethods products that enable you to perform a certain task. When you select a typical development installation, the installer automatically selects all webMethods products and components that make up that installation. For ApplinX, the typical development installation is as follows:

- ApplinX Server, Administration, JSP and .NET Frameworks, and Visual Studio Add-in
- Designer Eclipse with ApplinX, SOA Governance CentraSite, and Web Services Stack plug-ins

Note: In a collaborative development environment, CentraSite Registry Repository would be installed on a shared machine and accessed by development users.

To create production environments, work with your administrators, Software AG Global Consulting Services, and best practices documentation.

Operating System, Browser, and JDK Support

For information on operating system and browser support for ApplinX, see the *webMethods System Requirements*. For information on JDK support, see [“JDK Support” on page 15](#).

Hardware Requirements

The table below lists the minimum and recommended hardware requirements for ApplinX. Recommended amounts are shown in parentheses.

Important! The hardware requirements below are for ApplinX only. They do not include 2GB of hard drive space for Software AG infrastructure shared libraries required by most products and installed once per installation directory. You must determine the overall hardware requirements for each of your machines based on the overall requirements of your operating system and software.

ApplinX Component	Hard Drive Space	RAM	CPUs
Server	100MB	80MB+300KB per user	2 (4)
Administration	75MB	40MB	
JSP Framework	50MB	2GB	
C#.NET Framework	55MB	2GB	
VB.NET Framework	30MB	2GB	
Visual Studio Add-In	1MB	2GB	

For additional hardware requirements, see the ApplinX documentation.

Shut Down Products

Shut down all non-Software AG applications that are running on the machine on which you are going to install. If these applications are not shut down, product files might become corrupted.

If you are installing new Software AG products into an existing Software AG product installation directory, running Software AG products in that directory must be shut down or the installer will not be able to update key files that are locked by the operating system. The installer will automatically shut down many of these products and then restart them after installation. However, there are some products you must shut down manually before running the installer (and restart manually after installation is complete), as follows:

Product	Steps
CentraSite	Shut down Application Server Tiers by stopping the CentraSite Apache services and the Runtime (previously named Tomcat Server) services. Then shut down the Registry Repository by stopping its service.
Content Service Platform	See the instructions in the product documentation.

Product	Steps
Optimize	For a UNIX system, use the instructions in the product documentation. For a Windows system, shut down products running as applications from the Start menu, and shut down products running as services from the Services window. Services are listed as Software AG <i>product release</i> .
Terracotta Server	Run the <code>bin/stop-tc-server.{bat sh}</code> command.

During installation, if the installer still finds running Software AG products in the target installation directory, it will prompt you to shut them down.

Prepare Your Machine

- If the vendor for your operating system recommends installing the latest service packs, patch-bundles, and fixes, Software AG encourages you to follow that recommendation. If you experience problems with installed service packs, patch-bundles, or fixes, report those problems directly to the vendor.
- If you are going to install on a Windows system, and you want to develop .NET ApplinX Web applications in Visual Basic or C#, install Microsoft Visual Studio 2005, or install Microsoft Visual Studio 2008 or 2010 and the Microsoft Visual J# .NET 2.0 Redistributable Package. Microsoft Visual Studio does not have to be running when you install ApplinX.

Important! If you do not install Microsoft Visual Studio, you will not be able to install the ApplinX Visual Studio Add-in component, and the ApplinX .NET Framework component will have limited functionality; you will not be able to develop composite Web applications.

- If you are going to install on a UNIX system, make sure you have set sufficient user limits for the shell you use to start the installation and the product daemons. For example, the daemons for the Tomcat Server will run out of memory if they are started from the shell with a low user limit for data. If your system policy allows it, Software AG recommends setting the value for `coredump`, `data`, `file`, `memory`, and `threads` to unlimited, and the value of `nfiles` to 8192. For more information about setting and displaying the ulimits, read the man page or ask your system administrator.
- 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.

Install ApplinX

Start the Installer, Provide General Information, and Choose ApplinX Components

Follow the instructions in the guide *Using the Software AG Installer* to start the installer and provide general information such as proxy server, release to install, and installation directory. That guide also provides information about the product and language pack selection trees.

On the product tree, choose the ApplinX components to install.

After the tree, the installer displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. The sections below show the panels, but the information and fields on the panels are identical to the information and fields in the prompts.

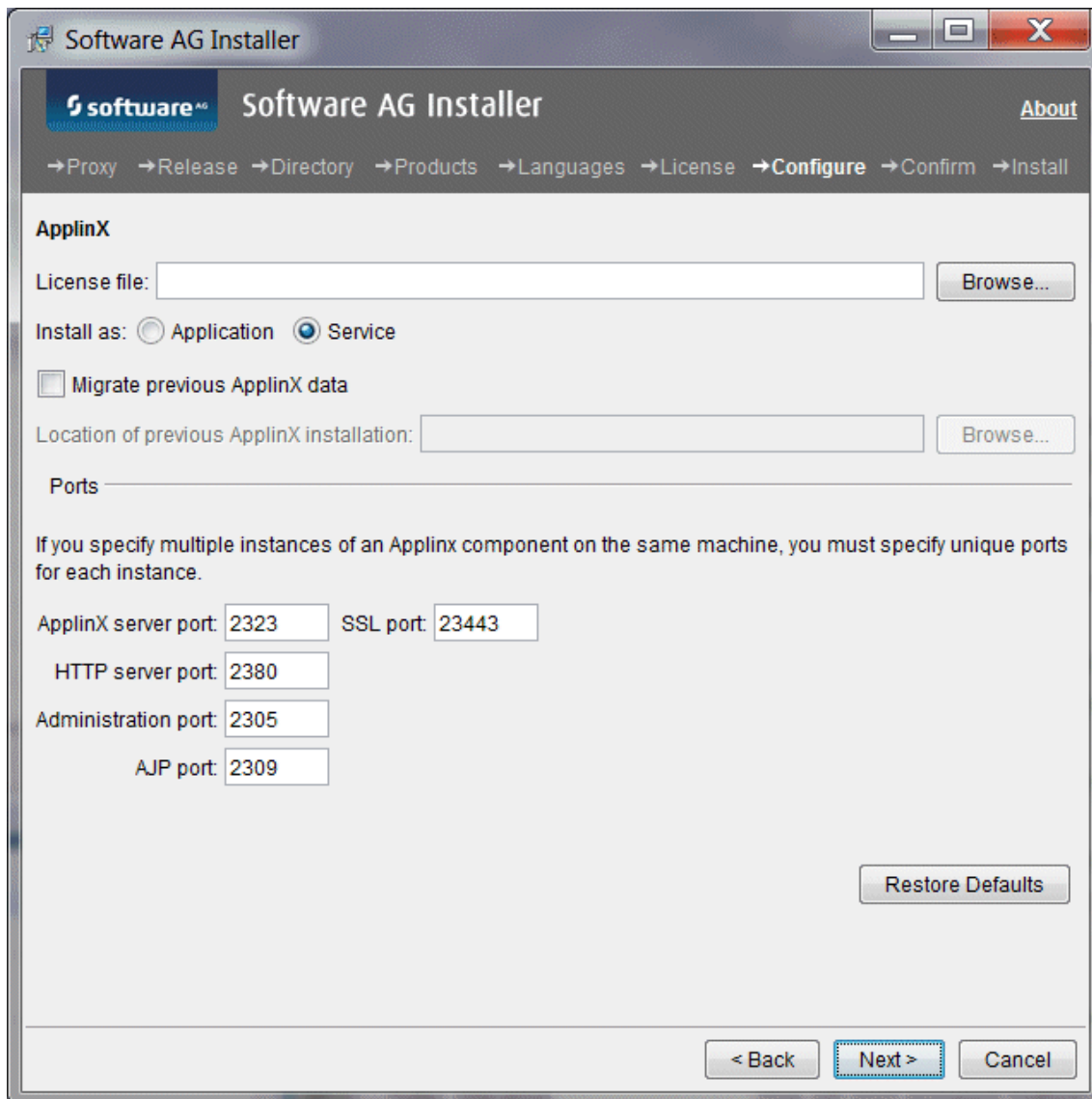
Important! Make sure all ports you specify on panels or in response to prompts are not already being used by other products on your machine. The installer cannot detect whether ports are in use when products are shut down, and the shutting down of products is a requirement for running the installer.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

Supply Product Configuration Information

ApplinX

If you are installing the ApplinX Server, the installer displays the panel below.

Note: The **Migrate data** field is for use with pre-8.1 release upgrades only. For complete information, see the ApplinX upgrade documentation.



Complete the Installation

Set Environment Variable

After the installer finishes, if you installed on a UNIX system, source the Software AG environment file `apxenv` to set the environment variable `APPLINX_ROOT`, or set the variable permanently by copying the setting from the `apxenv` file into your profile. The `apxenv` file is located in the `Software AG_directory/ApplinX` directory.

Apply Latest Fixes

Apply the latest fixes to ApplinX. Fixes might be available from the Empower Product Support website or the Software AG Update Manager. For instructions on using the latter, see *Using the Software AG Update Manager*.

Uninstall ApplinX

- 1 Shut down all non-Software AG applications that are running on the machine from which you are going to uninstall. If these applications are not shut down, the uninstaller will not be able to remove key files that are locked by the operating system.
- 2 If Software AG products in the directory from which you are going to uninstall are running, those products must be shut down or the uninstaller will not be able to remove key files that are locked by the operating system. The uninstaller will automatically shut down many of these products, but you must shut down some products manually before running the uninstaller. For details, see the section on shutting down products earlier in this chapter.
- 3 If you are going to uninstall all products in the installation directory, and you want to keep files you have stored in the *Software AG_directory/install* directory, move the files to a non-Software AG directory. The uninstaller will delete all files from the *Software AG_directory/install* directory except the logs and the installer-maintained *history.txt* file.
- 4 Run the Software AG Uninstaller as instructed in *Using the Software AG Installer*.
- 5 Reboot your system.
- 6 The Software AG Uninstaller does not delete files that were created after you installed your products (for example, user-created or configuration files), nor does it delete the directory structure that contains the files. If you are going to reinstall into the same directory, delete the product directories after uninstallation is complete or, if you want to save the files, move them.

4 Installing and Uninstalling EntireX

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Overview

This chapter provides product-specific preparation, installation, and uninstallation instructions. These instructions are intended for use with *Using the 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 your products. It describes the various methods you can use to install and uninstall, such as using the installer wizard, the installer console mode, an installation script, or an installation image. It lists the JDK to use to run the installer, and explains installation and uninstallation logging.

Important! Do not install products from webMethods product suite 9.0 into a directory that contains products from any other release.

Typical Development Installation

The Software AG Installer offers typical development installations of webMethods products that enable you to perform a certain task. When you select a typical development installation, the installer automatically selects all webMethods products and components that make up that installation. For EntireX, the typical development installation is as follows:

- EntireX Core Files, Broker, Administration, and Web Services Runtime
- Designer Eclipse with EntireX and SOA Governance CentraSite plug-ins

Note: In a collaborative development environment, CentraSite Registry Repository would be installed on a shared machine and accessed by development users.

To create production environments, work with your administrators, Software AG Global Consulting Services, and best practices documentation.

Operating System, Browser, and JDK Support

For information on operating system and browser support for EntireX, see the *webMethods System Requirements*. For information on JDK support, see [“JDK Support” on page 15](#).

Hardware Requirements

The table below lists the minimum and recommended hardware requirements for EntireX. Recommended amounts are shown in parentheses.

Important! The hardware requirements below are for EntireX only. They do not include 2GB of hard drive space for Software AG infrastructure shared libraries required by most products and installed once per installation directory. You must determine the overall hardware requirements for each of your machines based on the overall requirements of your operating system and software.

EntireX Component	Hard Drive Space Windows	Hard Drive Space UNIX	RAM	CPUs
Core Files	100MB	100MB	2GB	1
Administration	140MB*	170MB*	1GB	1
Broker	20MB	30MB		
Web Services Runtime	140MB**	150MB**	1GB	1
EntireX Eclipse plug-ins	700MB***	700MB***	1GB	1

*Includes 120MB hard drive space, 1GB RAM, and 1 CPU for the required and automatically installed System Management Hub.

**Includes 120MB hard drive space, 1GB RAM, and 1 CPU for the required and automatically installed Web Services Stack.

***Includes 680MB hard drive space for Eclipse infrastructure.

Shut Down Products

Shut down all non-Software AG applications that are running on the machine on which you are going to install. If these applications are not shut down, product files might become corrupted.

If you are installing new Software AG products into an existing Software AG product installation directory, running Software AG products in that directory must be shut down or the installer will not be able to update key files that are locked by the operating system. The installer will automatically shut down many of these products and then restart them after installation. However, there are some products you must shut down manually before running the installer (and restart manually after installation is complete), as follows:

Product	Steps
CentraSite	Shut down Application Server Tiers by stopping the CentraSite Apache services and the Runtime (previously named Tomcat Server) services. Then shut down the Registry Repository by stopping its service.
Content Service Platform	See the instructions in the product documentation.

Product	Steps
Optimize	For a UNIX system, use the instructions in the product documentation. For a Windows system, shut down products running as applications from the Start menu, and shut down products running as services from the Services window. Services are listed as Software AG <i>product release</i> .
Terracotta Server	Run the <code>bin/stop-tc-server.{bat sh}</code> command.

During installation, if the installer still finds running Software AG products in the target installation directory, it will prompt you to shut them down.

Prepare Your Machine

- If the vendor for your operating system recommends installing the latest service packs, patch-bundles, and fixes, Software AG encourages you to follow that recommendation. If you experience problems with installed service packs, patch-bundles, or fixes, report those problems directly to the vendor.
- If you are going to install on a UNIX system, make sure you have set sufficient user limits for the shell you use to start the installation and the product daemons. For example, the daemons for System Management Hub will run out of memory if they are started from the shell with a low user limit for data. If your system policy allows it, Software AG recommends setting the value for `coredump`, `data`, `file`, `memory`, and `threads` to unlimited, and the value of `nfiles` to 8192. For more information about setting and displaying the ulimits, read the man page or ask your system administrator.
- If you are going to install the Administration component on a UNIX 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.
- If you are going to install on a Linux system, the library `libcrypt.so` must be present to support the webMethods security infrastructure, or the login using OS user names/authentication will not work. If you do not see the `libcrypt.so` file in the `/usr/lib64` directory for Linux `x86_64`, or `/usr/lib` for Linux `x86`, 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.
- If you are going to install on a SUSE Linux Enterprise Server 11 SP1 system, and you have configured the system to use the Blowfish algorithm to encrypt user passwords, download and install patch 18 Aug 2011 - `glibc 4944` from Novell Support. This patch fixes an operating system bug relating to user authentication. For detailed information, see Novell's SUSE Security Announcement: `SUSE-SA:2011:035`.

Install EntireX

Start the Installer, Provide General Information, and Choose EntireX Components

Follow the instructions in the guide *Using the Software AG Installer* to start the installer and provide general information such as proxy server, release to install, and installation directory. That guide also provides information about the product and language pack selection trees.

On the product tree, select the EntireX components to install. If you select EntireX, the installer automatically selects the Administration component, which in turn selects System Management Hub. The Administration component enables you to administer the EntireXBroker, Broker Agent, Location Transparency, and Authorization Rule, and to use the System Management Hub to administer the EntireX RPC server. If you need only a lightweight EntireX installation (for example, for use with NaturalONE), you might not need the Administration component. Without this component, you will only be able to start and stop the default EntireXBroker. For complete information on functionality provided by the Administration component, see "System Management Hub" in the EntireX product documentation.

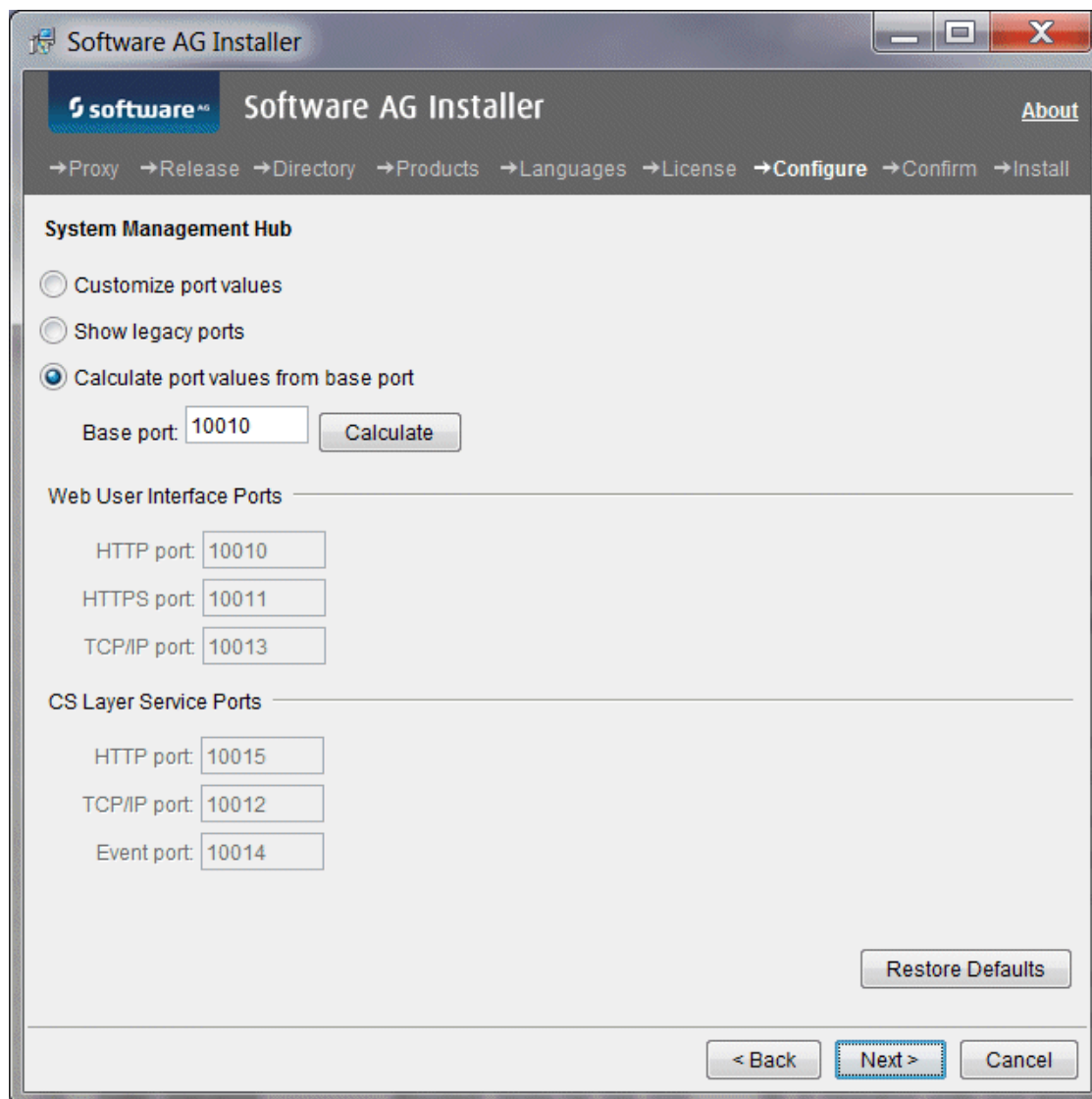
After the tree, the installer displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. The sections below show the panels, but the information and fields on the panels are identical to the information and fields in the prompts.

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. For a list of default ports used by Software AG products, see the [default ports](#).

Supply Product Configuration Information

System Management Hub

EntireX is managed by System Management Hub, so the installer displays the panel below.

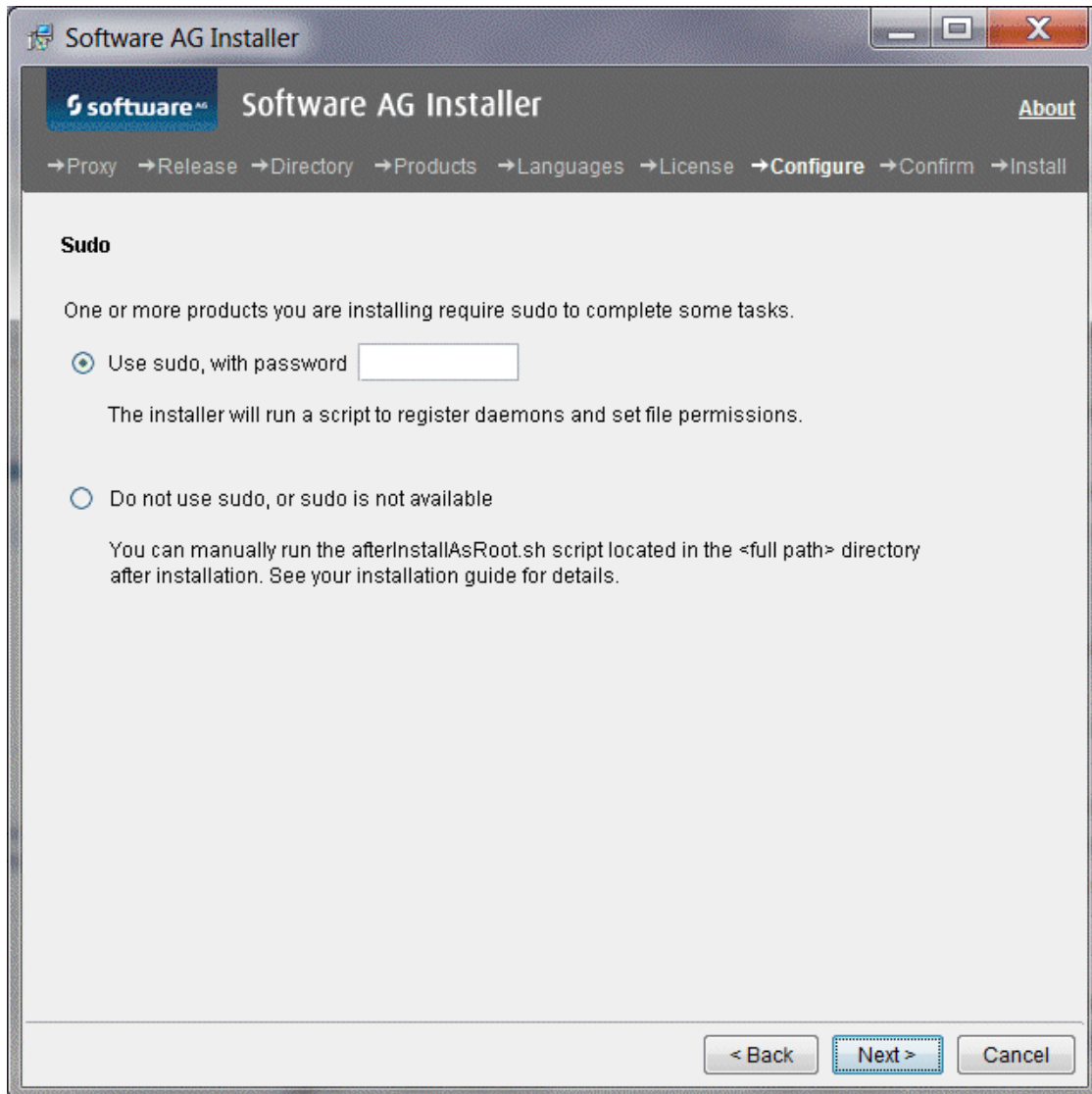


The actions you can take depend on the contents of your machine.

In this case...	You can...
No instances of System Management Hub exist on the machine	Customize port values, calculate port values from a specified base port, or use the legacy port values that were used by System Management Hub in earlier releases.
An earlier release of System Management Hub exists on the machine	Customize port values or calculate port values from a specified base port.
One or more instances of System Management Hub exist on the machine	Calculate port values from a specified base port.

Sudo

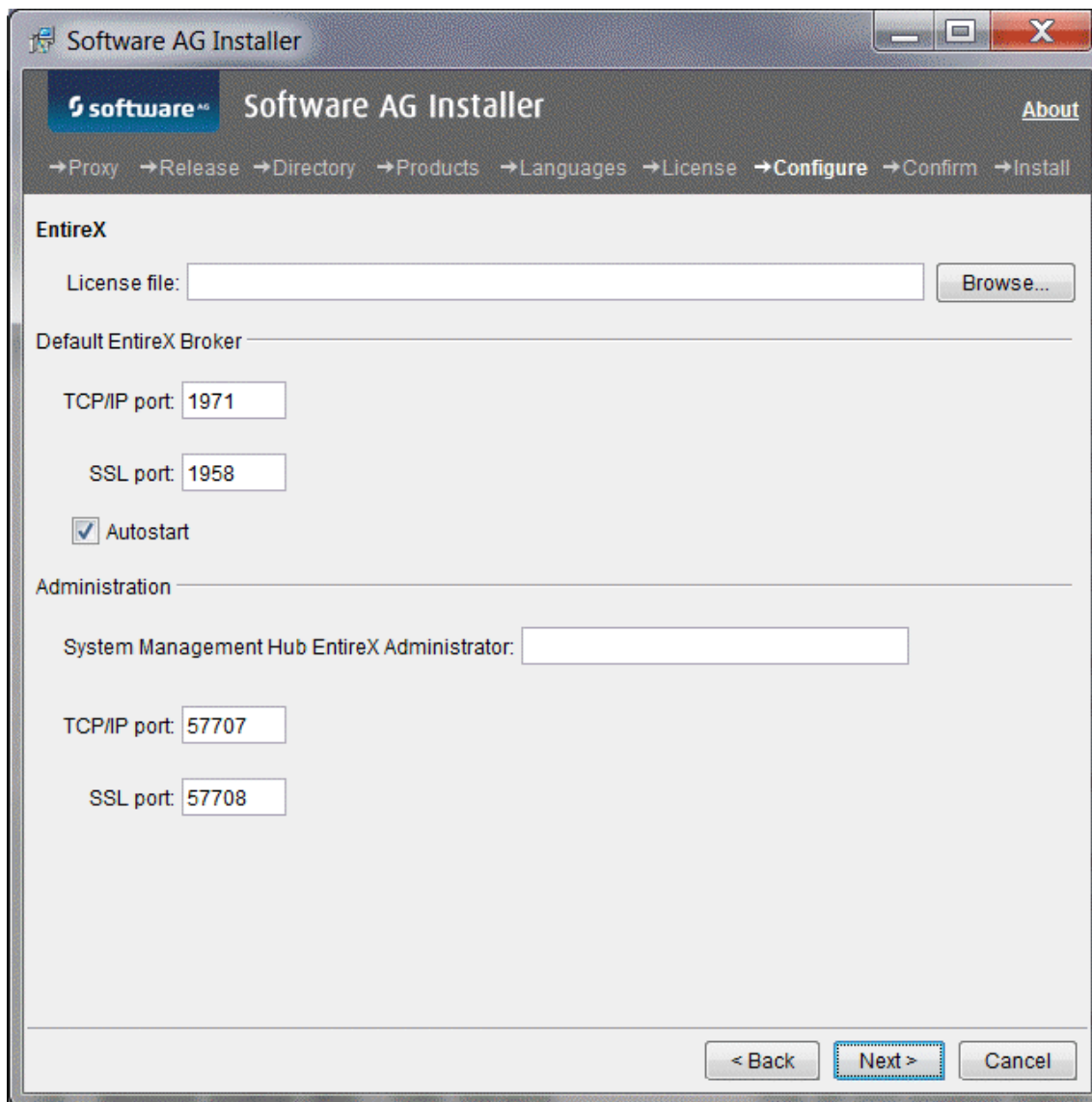
When you install on a UNIX system, the panel below might appear.



You must either have the installer execute the `afterInstallAsRoot.sh` script, or you must run the script manually after installation as explained later in this chapter. If you want to have the installer to execute the script, the user under which you are running the installer must be in the `sudoers` configuration.

For security reasons, the installer does not store the sudo password in installation scripts. If you are creating or installing from an installation script, therefore, the option to use sudo is not available. You must execute the `afterInstallAsRoot.sh` script manually after installation.

EntireX

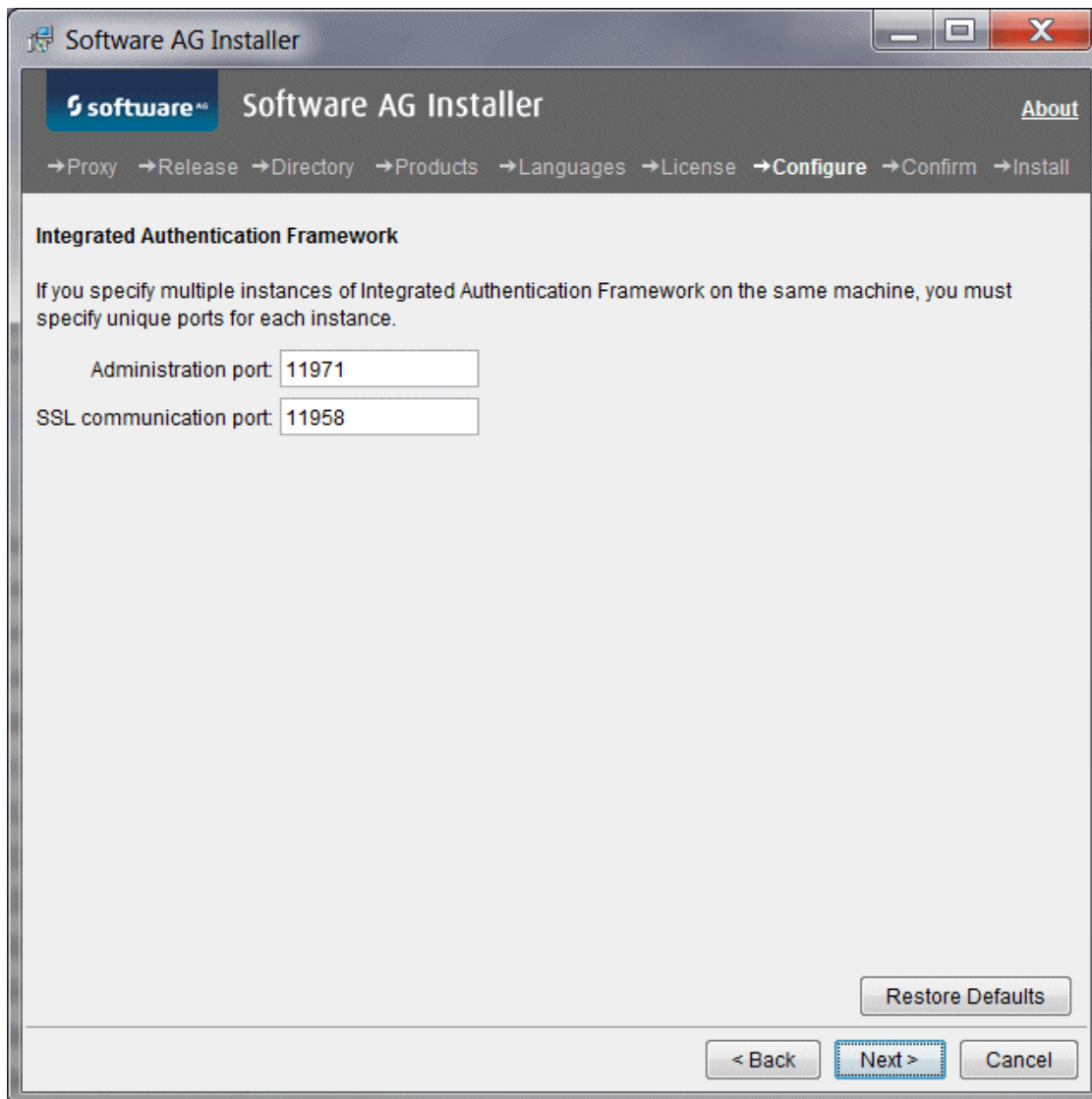


Field	Entry
License file	Full path to the EntireX license file. Note: If you are also installing NaturalONE, EntireX uses the NaturalONE license file.
Default EntireX Broker TCP/IP and SSL ports	When you install EntireX Broker, TCP/IP and SSL ports for the Broker.

Field	Entry
Default EntireX Broker Autostart	When you install EntireX Broker, tells the installer whether to start the default Broker after installation and to turn on the Autostart option so the Broker will start automatically whenever you start your system.
System Management Hub EntireX administrator	When you install the EntireX Administration component, administrator name to use to connect to the System Management Hub. If you are installing on a Windows system and you want the administrator to be a user from the Active Directory, you must also specify the domain. For instructions, see the EntireX documentation.
Administration TCP/IP and SSL ports	When you install the EntireX Administration component, TCP/IP and SSL ports to use for administration.

Integrated Authentication Framework

If you selected Integrated Authentication Framework for installation, you will see the panel below.



Complete the Installation

Set Environment Variables

On UNIX systems, you must set the EXXDIR environment variable to the *Software AG_directory/EntireX* directory, and set the PATH and LD_LIBRARY_PATH environment variables to include that directory. To do so, source the EntireX environment script *exxenv.csh* or *exxenv*, depending on the shell you are using. The script is located in the *Software AG_directory/EntireX/INSTALL* directory.

Register Daemons and Set File Permissions

If you installed EntireX on a UNIX system and did not use `sudo`, do the following:

- 1 Register daemons and set file permissions by executing the script *Software AG_directory/bin/afterInstallAsRoot.sh* as the root user.

Important! You must run this script or some products might not work correctly.

- 2 Restart the EntireX Broker Admin Service. To do so, run the command `/etc/init.d/sagnetbsrv restart`, where *n* matches the number in the *sagnetbsrv* script in your *Software AG_directory/EntireX/bin* directory.
- 3 During installation, you might have told the installer to enable autostart so the EntireX Broker would start automatically whenever you start your system. However, since you did not use `sudo` to install, the installer could not actually enable autostart. If you want to enable autostart, see the section on setting the local EntireX Broker autostart in the System Management Hub documentation for instructions.

Apply Latest Fixes

Apply the latest fixes to EntireX. Fixes might be available from the Empower Product Support website or the Software AG Update Manager. For instructions on using the latter, see *Using the Software AG Update Manager*.

Uninstall EntireX

- 1 Shut down all non-Software AG applications that are running on the machine from which you are going to uninstall. If these applications are not shut down, the uninstaller will not be able to remove key files that are locked by the operating system.
- 2 If Software AG products in the directory from which you are going to uninstall are running, those products must be shut down or the uninstaller will not be able to remove key files that are locked by the operating system. The uninstaller will automatically shut down many of these products, but you must shut down some products manually before running the uninstaller. For details, see the section on shutting down products earlier in this chapter.
- 3 If you are going to uninstall all products in the installation directory, and you want to keep files you have stored in the *Software AG_directory/install* directory, move the files to a non-Software AG directory. The uninstaller will delete all files from the *Software AG_directory/install* directory except the logs and the installer-maintained *history.txt* file.
- 4 If you are uninstalling from a UNIX system, and you used `sudo` to register daemons and set file permissions during or after installation, you must also use `sudo` to unregister daemons and remove file permissions.
 - If you are not using an uninstallation script to uninstall, you can tell the uninstaller to perform this task, or you can perform this task now by executing the script *Software AG_directory/bin/beforeUninstallAsRoot.sh* as the root user.

- If you are using an uninstallation script, the uninstaller cannot execute the script because it does not store the sudo password, for security reasons. You must execute the script yourself now.

Important! You must either have the uninstaller execute the script or run it yourself, or some products might not work correctly.

- 5 Run the Software AG Uninstaller as instructed in *Using the Software AG Installer*. Choose to uninstall both EntireX and System Management Hub.
- 6 Reboot your system.
- 7 The Software AG Uninstaller does not delete files that were created after you installed your products (for example, user-created or configuration files), nor does it delete the directory structure that contains the files. If you are going to reinstall into the same directory, delete the product directories after uninstallation is complete or, if you want to save the files, move them.

5 Installing and Uninstalling All Other webMethods Products

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Overview

This chapter provides product-specific preparation, installation, and uninstallation instructions. These instructions are intended for use with *Using the 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 your products. It describes the various methods you can use to install and uninstall, such as using the installer wizard, the installer console mode, an installation script, or an installation image. It lists the JDK to use to run the installer, and explains installation and uninstallation logging.

Important! Do not install products from webMethods product suite 9.0 into a directory that contains products from any other release.

Typical Development Installations

The Software AG Installer offers typical development installations of webMethods products that enable you to perform a certain task. When you select a typical development installation, the installer automatically selects all webMethods products and components that make up that installation.

For some typical development installations, you might want to also install additional components, and might need to create webMethods *database components*. A database component is a grouping of database objects that can be used by one or more webMethods products. The sections below lists these products and database components.

For complete information about database components, see [“Creating and Dropping Database Components” on page 89](#). For detailed information on how the products in each typical development installation work together, see *Understanding webMethods Business Solutions*.

To create production environments, work with your administrators, Software AG Global Consulting Services, and best practices documentation.

Typical Installation	Additional Optional Components	Database Components
ActiveTransfer		ActiveTransfer, and all for Integration Server and My webMethods Server
Application Integration Development	Integration Server PKI Support package to store keys and certificates securely Integration Server VSS, ClearCase, or Subversion Support to maintain Designer elements	All for Integration Server, My webMethods Server, and Trading Networks

Typical Installation	Additional Optional Components	Database Components
Business Process Development	Same as Application Integration Central CentraSite Registry Repository to support collaboration	All for Integration Server, BPM, and My webMethods Server; optionally, Staging and Reporting
CloudStreams Service Development	CloudStreams providers	CloudStreamsEvents, and all for Integration Server
Composite Application Development	Central CentraSite Registry Repository to support collaboration	All for My webMethods Server
Software AG Designer Workstation	Integration Server PKI Support package	All for Integration Server and My webMethods Server
Intelligent Business Operations		All for Integration Server, My webMethods Server, and Optimize
SOA Governance		MediatorEvents, and all for Integration Server

Deployment Installation

To create a deployment installation, you can install:

- Deployer for run-time deployment.
- Deployer and Asset Build Environment for repository-based deployment.

Deployer is the product you use to deploy webMethods assets from one environment to another. For example, you might want to deploy assets you have developed on servers in a development environment (that is, source servers) to servers in a test or production environment (that is, target servers).

In run-time deployment, you connect to webMethods source servers and deploy assets that reside on the source servers to target Software AG servers. Deployer is a package you install on an Integration Server. If no firewall separates your source and target environments, install Deployer and its host Integration Server on a machine that can access all source and target servers. If a firewall separates the environments, install Deployer and its host Integration Server on a machine in the source environment that can access all source servers and in the target environment on a machine that can access all target servers. You can deploy assets from any release of webMethods Broker, Designer, Integration Server, My webMethods Server, Optimize, and Trading Networks to target servers of the same release.

In repository-based deployment, you do not have to connect to the source servers. Instead, you build assets from source servers on a repository, then connect to the repository and deploy the assets to target Software AG servers. Install the Asset Build Environment on development machines as necessary. In repository-based deployment, you can deploy assets from any release of webMethods Broker, Designer, Integration Server, My webMethods Server, Optimize, Trading Networks, Event Server, and Business Rules to target servers of the same release.

Shut Down Products

Shut down all non-Software AG applications that are running on the machine on which you are going to install. If these applications are not shut down, product files might become corrupted.

If you are installing new Software AG products into an existing Software AG product installation directory, running Software AG products in that directory must be shut down or the installer will not be able to update key files that are locked by the operating system. The installer will automatically shut down many of these products and then restart them after installation. However, there are some products you must shut down manually before running the installer (and restart manually after installation is complete), as follows:

Product	Steps
CentraSite	Shut down Application Server Tiers by stopping the CentraSite Apache services and the Runtime (previously named Tomcat Server) services. Then shut down the Registry Repository by stopping its service.
Content Service Platform	See the instructions in the product documentation.
Optimize	For a UNIX system, use the instructions in the product documentation. For a Windows system, shut down products running as applications from the Start menu, and shut down products running as services from the Services window. Services are listed as Software AG <i>product release</i> .
Terracotta Server	Run the bin/stop-tc-server.{bat sh} command.

During installation, if the installer still finds running Software AG products in the target installation directory, it will prompt you to shut them down.

Prepare Your Machine

Prepare to Install Any Product on Any Operating System

If the vendor for your operating system recommends installing the latest service packs, patch-bundles, and fixes, Software AG encourages you to follow that recommendation. If you experience problems with installed service packs, patch-bundles, or fixes, report those problems directly to the vendor.

Prepare to Install Any Product on an HP-UX 11i v3 System

If you are going to install on an HP-UX 11i v3 system, set the variable `USE_J2D_FONTCONFIG` to `no`. In a Bourne or Bash shell, run the command `export USE_J2D_FONTCONFIG=no`.

Prepare to Install webMethods Broker on a UNIX System

- Information about webMethods Broker installations is stored in the `webMethods Broker installations.txt` file in the `/var/opt/webmethods` directory. Make sure the user that you are going to use to install has write permission to that directory.
- 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

- On Solaris, HP-UX, and AIX systems, Broker Server is a 64-bit binary application. If you are going to install Broker Server on one of these systems, you must configure the operating system kernel to run in 64-bit mode.
- If you are going to install on a Linux system, the library `libcrypt.so` must be present to support the webMethods security infrastructure, or the login using OS user names/authentication will not work. If you do not see the `libcrypt.so` file in the `/usr/lib64` directory for Linux `x86_64`, or in the `/usr/lib` directory for Linux `x86`, 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.
- 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 hard,nointr,proto=tcp host:/path /mount_point
```

Option	Description
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 <code>hard</code> 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 <code>proto=tcp</code> 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.

Prepare to Install Integration Server on a UNIX or Mac System

Integration Server's ability to handle traffic is constrained by the number of file descriptors available to the Integration Server process. On most systems, 64 file descriptors are available to each process by default. If you are going to install Integration Server on a UNIX or Mac system, Software AG recommends that you ask your system administrator to increase the number of file descriptors available to the Integration Server process to at least 1024.

Important! You might have to increase this number depending on the number of files Integration Server needs to have open at one time. It is dangerous to set the `rlim_fd_max` value higher than 1024 because of limitations with the `select` function, so if Integration Server requires more file descriptors, ask the system administrator to set the `setrlimit` value directly.

Prepare to Install MashZone and Process Performance Manager

Prepare to Install Process Performance Manager on a Windows System

Windows systems offer only 5000 ports for TCP/RMI connections. This number might not be sufficient for error-free communication if the system is too busy (for example, distributed systems, use of Performance Dashboard). To change the parameter, add an entry like the one below to the Windows registry. This example entry increases the number of available ports to 8192.

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters,
"MaxUserPort"=dword:00002000
```

Prepare to Install MashZone and Process Performance Manager on a Linux System

- Check the shared memory settings (kernel parameter `shmmax`) by running the command `sysctl -a | fgrep kernel.shmmax`. The value returned is in bytes. If the value is less than 629145600 bytes, you must increase it by running the command `sysctl -w kernel.shmmax=629145600` as a root user. To check the new kernel parameter, run the command `echo "kernel.shmmax=629145600" >> /etc/sysctl.conf`.
- Enter the host name of the machine on which you are installing products in the DNS of the network or in the file `/etc/hosts`.
- When you install on a Linux system, you install as a non-root user. For non-root users, only ports 1024 and higher are available on the operating system; ports 0 through 1023 are reserved for system services and are available only to a root user. During installation, therefore, you will only be able to specify HTTP port 1080 and HTTPS port 1443 for the Linux load balancer; ports 80 and 443 will not be available. If you want to use ports 80 and 443, set up the following port forwarding as a root user:


```
iptables -t nat -A PREROUTING -i eth0 -p tcp --dport 80 -j REDIRECT --to-ports 1080
iptables -t nat -A PREROUTING -i eth0 -p tcp --dport 443 -j REDIRECT --to-ports 1443
```

Prepare to Install Mobile Designer

If you are going to install Mobile Designer on a Windows system, install Apache ANT 1.7 or higher using the instructions in the vendor documentation.

If you are going to install Mobile Designer on a Mac system, install Mac OS X Snow Leopard or Lion using the instructions in the vendor documentation.

Install an integrated development environment (IDE). Software AG recommends using the Eclipse provided with Software AG Designer on the Software AG Installer.

Prepare to Install My webMethods Server

If you are going to install the My webMethods Server on a UNIX system, make sure you have set sufficient user limits for the shell you use to start the installation and the product daemons. For example, if you have multiple language packs installed for My webMethods Server, or if there are multiple webMethods products on the machine, the daemons for My webMethods Server will run out of memory if they are started from the shell with a low user limit for data. If your system policy allows it, Software AG recommends setting the value for `coredump`, `data`, `file`, `memory`, and `threads` to at least 32768, and the value of `nfiles` to 8192. For more information about setting and displaying the ulimits, read the man page or ask your system administrator.

Prepare to Install Optimize

If you are going to install the Optimize Analytic Engine on a UNIX system, make sure you have set sufficient user limits for the shell you use to start the installation and the product daemons. For example, the daemons for the Optimize infrastructure will run out of memory if they are started from the shell with a low user limit for data. If your system policy allows it, Software AG recommends setting the value for `coredump`, `data`, `file`, `memory`, and `threads` to at least 32768, and the value of `nfiles` to 8192. For more information about setting and displaying the ulimits, read the man page or ask your system administrator.

Database Connection Information

Some products require you to supply database connection information during installation. Sample URL formats for that driver are shown in the product panels. Keep in the mind the following:

- Many products use the DataDirect Connect JDBC 5.0 driver. For information about options supported by this driver, see *DataDirect Connect for JDBC User's Guide and Reference 5.0* in the `Software AG_directory/_documentation` directory or on the [Software AG Documentation Web site](#).
- If you are using the installer GUI mode, for ease of use, the database connection values you enter on one panel are reflected on the next as you go forward through the installer the first time.
- Use the DataDirect Connect connection option `MaxPooledStatements=35` on all database URLs except those for Trading Networks. This connection option improves performance by caching prepared statements. (Trading Networks caches its prepared statements using its own pooling mechanism).
- If the database user and password do not yet exist, specify the database user and password you will create after installation. You can use one database user for multiple database components, or you can use a different database user for each database component.

- For DB2, if the product will connect to a schema other than the default schema for the specified database user, you must specify these connection options in the database URL, where `AlternateID` is the name of the default schema that is used to qualify unqualified database objects in dynamically prepared SQL statements:

```
;AlternateId=schema;"InitializationString=(SET CURRENT  
PATH=current_path,schema)";MaxPooledStatements=35
```

Install Products

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

Follow the instructions in the guide *Using the Software AG Installer* to start the installer and provide general information such as proxy server, release to install, and installation directory. That guide also provides information about the product and language pack selection trees.

If you are installing Process Performance Manager on Windows Vista, Windows 2008 Server, or Windows 7, you must install using the Windows Administrator user account. To do so, instead of double-clicking the installer .exe file to start the installer, right-click the .exe file and click **Run as administrator**. Other user accounts do not work, even if they were assigned administrator privileges.

On the product tree, choose the products or product components to install.

Some products (including Command Central) can be managed through Command Central. If you want to use Command Central to manage those products, select the Platform Manager plug-ins for those products.

Note: If you install My webMethods Server, and later install Task Engine or My webMethods user interfaces in a separate run of the installer, those components are installed on all My webMethods Server instances in the target installation directory.

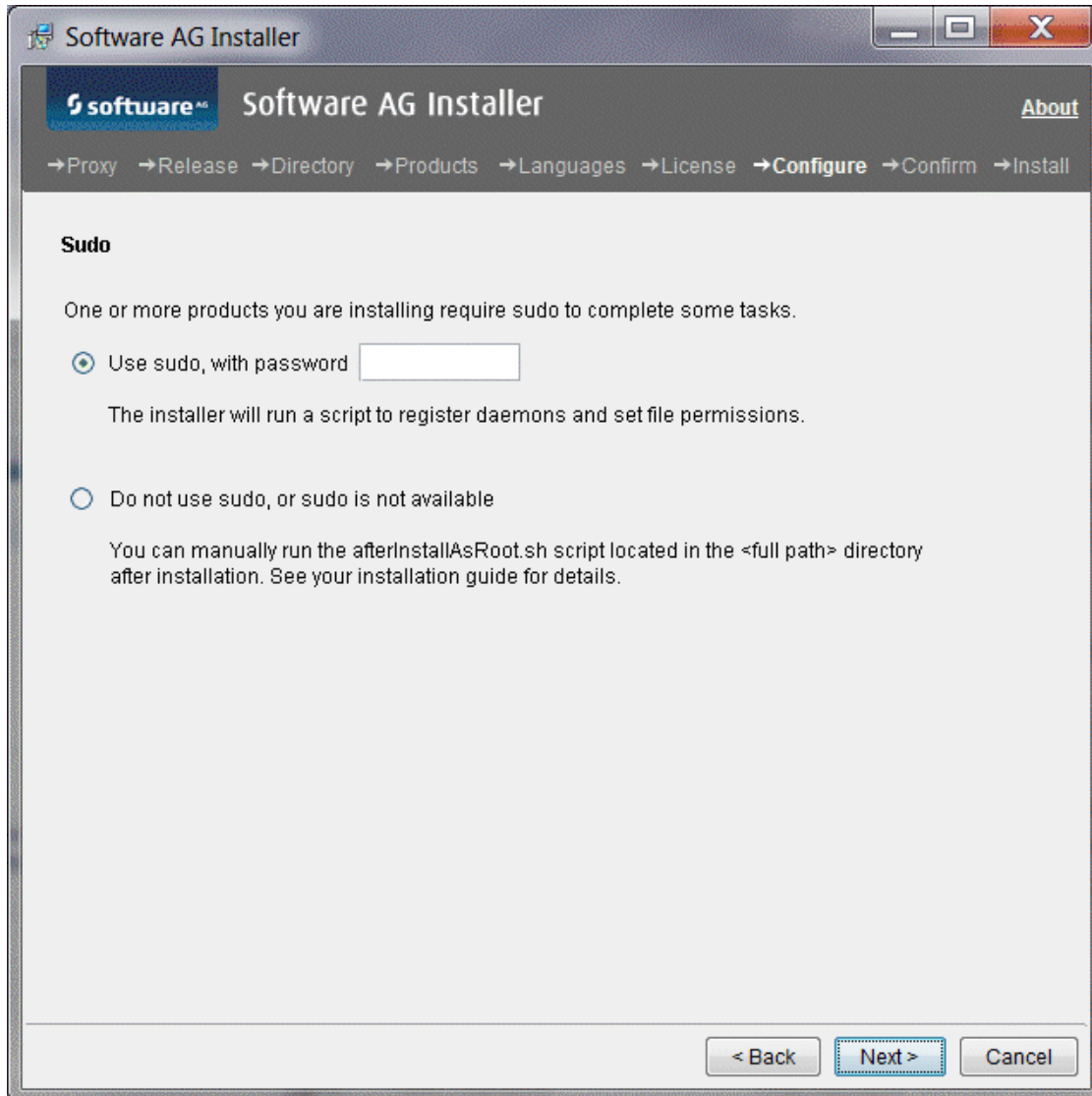
After the tree, the installer displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. The sections below show the panels, but the information and fields on the panels are identical to the information and fields in the prompts.

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. For a list of default ports used by Software AG products, see the [default ports](#).

Supply Product Configuration Information

Sudo

When you install on a UNIX system, the panel below might appear.



You must either have the installer execute the `afterInstallAsRoot.sh` script, or you must run the script manually after installation as explained later in this chapter. If you want to have the installer to execute the script, the user under which you are running the installer must be in the `sudoers` configuration.

For security reasons, the installer does not store the sudo password in installation scripts. If you are creating or installing from an installation script, therefore, the option to use sudo is not available. You must execute the `afterInstallAsRoot.sh` script manually after installation.

ActiveTransfer Server

Field	Entry
Run as Server or Gateway	You can install ActiveTransfer Server to run as a server or as a Gateway (reverse proxy).
License file	If you chose to run ActiveTransfer Server as a server, specify the full path to the license file that permits that functionality. If you chose to run ActiveTransfer Server as a Gateway, specify the full path to the license file that permits that functionality.

Field	Entry
Database Connection	If you are running ActiveTransfer Server as a server, specify the connection ActiveTransfer Server is to use to connect to the ActiveTransfer database component. If you do not do so, ActiveTransfer Server will not start after installation.

webMethods Broker

When you install webMethods Broker, you install the following:

- A default Broker. Brokers execute client messaging requests.
- 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.

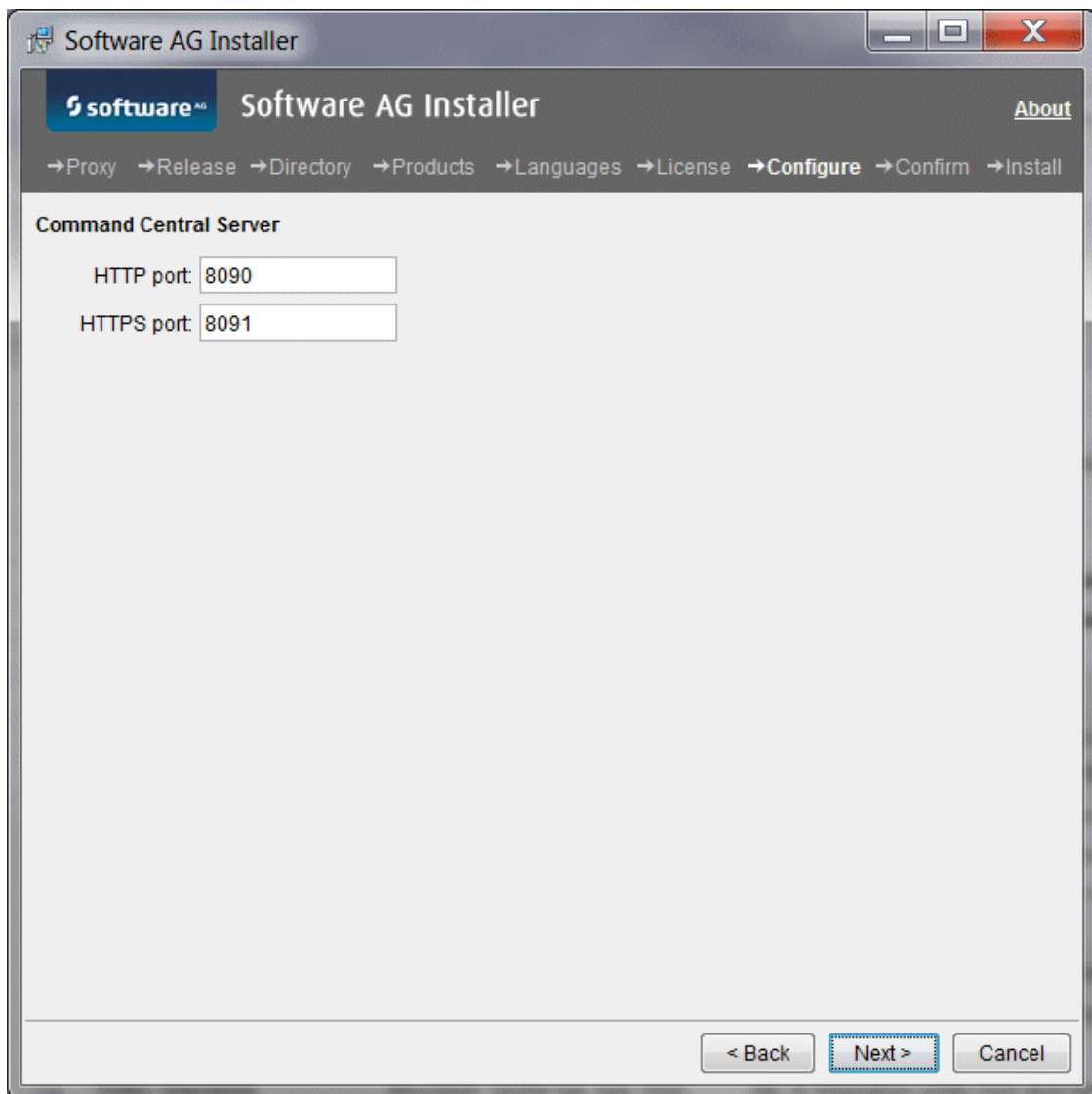
- A Broker Monitor. Broker Monitors continually check the state of Broker Servers and automatically restarts them if they stop running.

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	<p>Every Broker Server has its own data directory, which holds the Broker Server's configuration file and log files, and storage session, which stores configuration (metadata) and run-time data.</p> <p>You would <i>not</i> 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 on the panel 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 <i>Administering webMethods Broker</i>.</p> <p>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 on the panel 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. (For information about the webMethods Broker online configuration data backup tool, see <i>Administering webMethods Broker</i>.)</p> <p>Software AG recommends creating separate sessions. You cannot later change from a combined session to separate sessions or vice versa.</p> <p>To create the Broker Server configuration, select the check box and complete the fields below.</p>
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.

Field	Entry
Storage size	<p>Select a pre-configured storage session for the Broker Server that can handle your expected usage needs.</p> <ul style="list-style-type: none">■ Small (32MB log file, 512MB storage file). 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 (64MB log file, 4GB storage file). 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 (128MB log file, 8GB storage file). 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.

Command Central



Content Service Platform Server

Software AG Installer

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→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install

Content Service Platform Server

Port:

Content Service Platform Server uses this port and the next nine ports.

Install as: Application Service

Database Connection

You must specify the database connection or Content Service Platform Server will not start.

RDBMS:

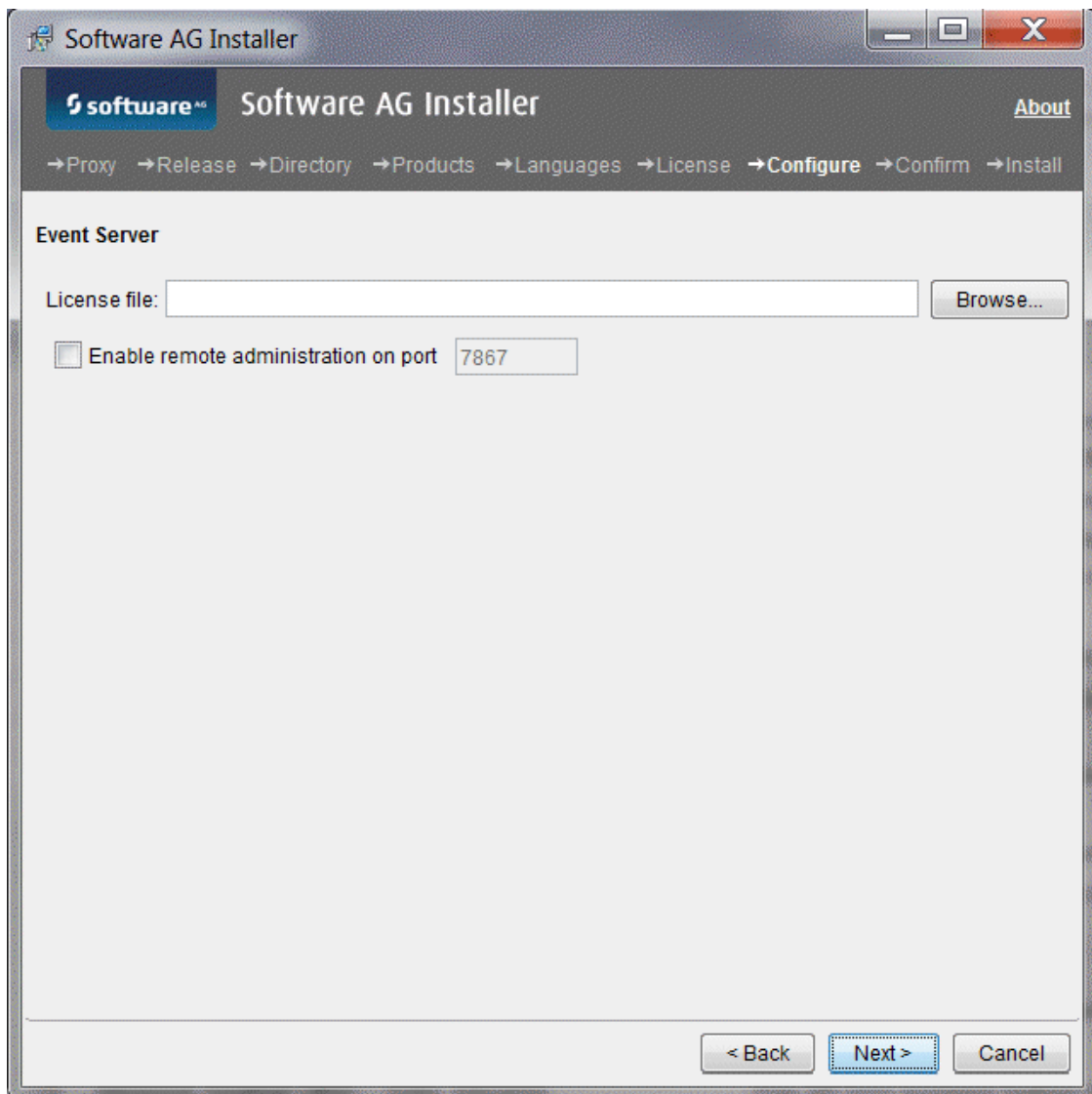
jdbc:wm:oracle://<server>:<port>;serviceName=<value>[;<option>=<value>...]

URL:

< Back Next > Cancel

Field	Entry
Database Connection	Content Service Platform uses a database to store document metadata, configuration data, and document-specific security settings.

Event Server



Integration Server

The screenshot shows the 'Software AG Installer' window for the 'Integration Server' configuration. The window title is 'Software AG Installer' and it includes a breadcrumb trail: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Configure' step is currently active.

Integration Server

License file:

Port:

Install as: Application Service

Database Connection

If you select External RDBMS but do not provide the connection information, Integration Server will use the embedded database.

External RDBMS Embedded database

RDBMS:

`jdbc:wm:oracle://<server>:<port>;serviceName=<service>[<option>=<value>]...`

Connection name:

URL:

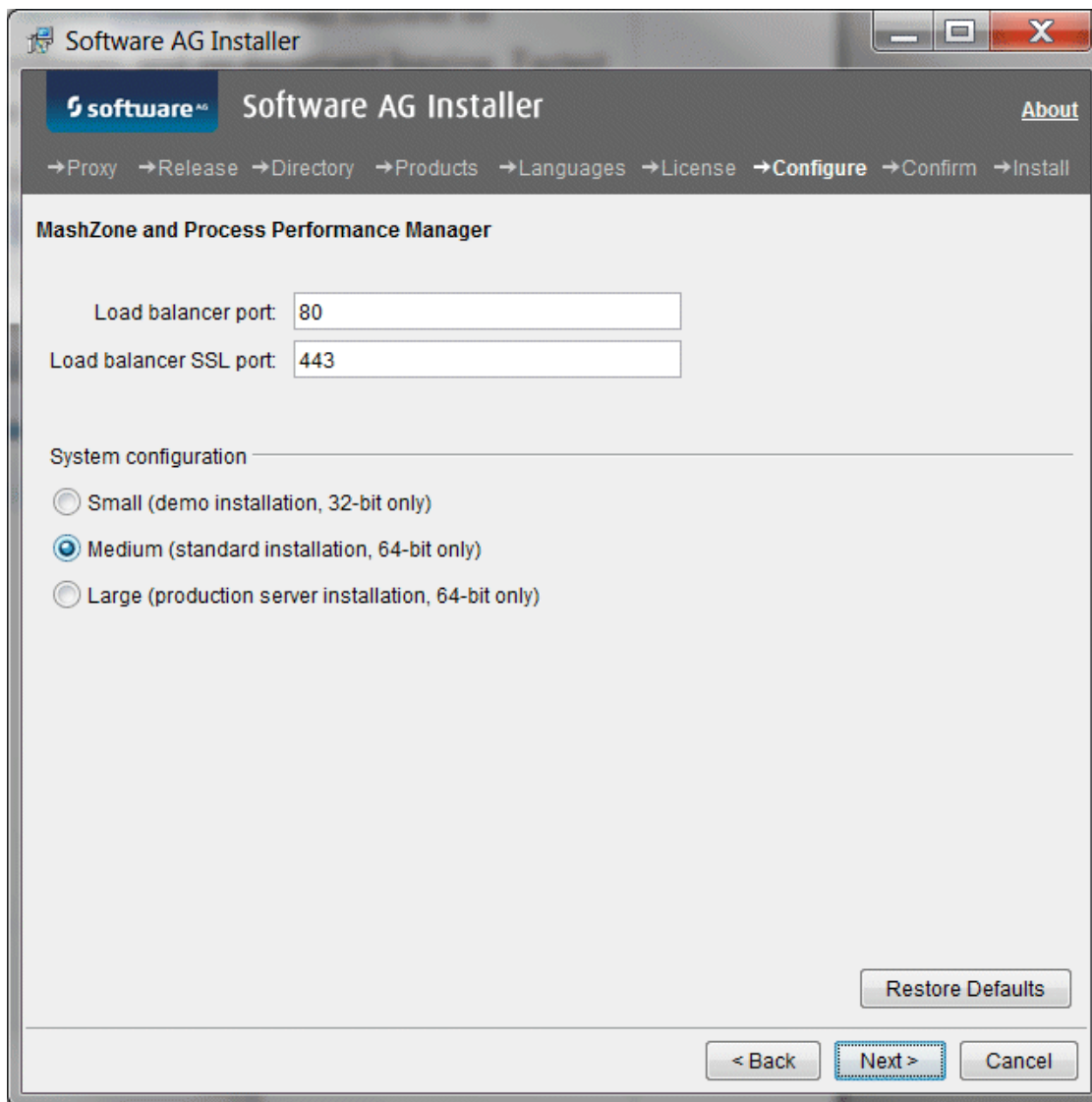
Database user:

Password:

< Back 68

Field	Entry
License file	<p>If you are installing a production Integration Server, specify the full path to the Integration Server production license file.</p> <p>If you are installing Integration Server as part of Designer Workstation, specify the full path to the Integration Server development license file.</p> <p>If you are installing Mediator and have not licensed Integration Server, specify the full path to the Mediator license file,</p> <hr/> <p>Important! The Mediator license does not allow full Integration Server functionality. Do not install other products on this Integration Server later or those products might not work properly.</p> <hr/> <p>If you are installing CloudStreams and have not licensed Integration Server, specify the full path to the CloudStreams license file.</p> <hr/> <p>Important! The CloudStreams license does not allow full Integration Server functionality. Do not install other products on this Integration Server later or those products might not work properly.</p> <hr/>
Database Connection	<p>Available when you are creating a My webMethods Server instance and you select External RDBMS. You must decide where to store data written by Integration Server. For complete information, see “Data Storage” on page 91.</p> <hr/>

MashZone and Process Performance Manager



Select a system configuration for MashZone and Process Performance Manager that can handle your expected usage needs. In each use case below, the values are valid only for the specified number of PPM clients. The hardware requirements increase with the number of PPM clients and users.

Size	System Configuration
Small	For demo installation on Windows 32-bit systems. Up to 200,000 process instances/data rows used in data analytics (PI/DR), 1 PPM client, up to 5 users, 10 GB free hard drive space, 4 GB RAM, 2 CPUs. Database on PPM server machine (table space: 1GB).

Size	System Configuration
Medium	Standard installation. 64 bit, up to 5 million PI/DR, 1 PPM client, up to 10 users, 20 GB free hard drive space, 16 GB RAM, 4 CPUs. Database on PPM server machine or on separate machine (table space: 50GB).
Large	Production server installation. 64 bit, up to 25 million PI/DR, 1 PPM client, up to 100 users, 50 GB free hard drive space, 64 GB RAM, 8 CPUs. Database on separate machine (table space: 150GB)

My webMethods Server

Software AG Installer

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→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install

My webMethods Server

If you are performing a fresh install, create a server instance. If you are performing a side-by-side upgrade, do not create a server instance.

Create a My webMethods Server Instance

Port:

Install as: Application Service

Database Connection

If you select External RDBMS but do not provide the connection information, My webMethods Server will use the embedded database.

External RDBMS Embedded database

RDBMS:

jdbc:wm:oracle://<server>:<port>;serviceName=<service>[<option>=<value>]...

URL:

Database user:

Password:

< Back Next > Cancel

Select the check box to create a My webMethods Server instance and complete the port and database fields.

Field	Entry
Database Connection	Available when you select External RDMBS. You must decide where to store data written by My webMethods Server. For complete information, see “Data Storage” on page 91.

OneData

Software AG Installer

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→Proxy →Release →Directory →Products →Languages →License →**Configure** →Confirm →Install

OneData

License file:

HTTP port:

HTTPS port:

Install as: Application Service

Repository

Repository ID:

Repository name:

Database Connection Part 1

You must specify the database connection or OneData will not start.

RDBMS:

jdbc:wm:oracle://<server>:<port>;serviceName=<service>[:<option>=<value>]...

Connection prefix:

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→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install

OneData

Database Connection Part 2

Metadata

URL:

Database user: Password:

Schema name:

Work Area

URL:

Database user: Password:

Schema name:

Release Area

URL:

Database user: Password:

Schema name:

< Back Next > Cancel

Field	Entry
Repository ID	OneData provides a repository in which to store your master data. Provide an ID for the repository (for example, DevRepo). The ID will be used internally in OneData.
Repository name	Provide a name for the repository (for example, OneData Development Repository). The name will appear in the OneData user interface.
Connection Prefix	If you enter a value other than the default (that is, onedata), you will have to edit the database connections for the Work Area and Release Area after you start OneData. For instructions, see the OneData documentation.

Field	Entry
Database Connection	<p>The URL you specify must include the option <code>catalogOptions=1</code> so that OneData can retrieve database metadata information for various operations (for example, <code>jdbc:wm:oracle://localhost:1521;serviceName=XE;catalogOptions=1</code>).</p> <p>The prefix you specify will be added to each of the three schema connection names (that is, <i>prefix_md</i>, <i>prefix_wa</i>, and <i>prefix_ra</i>). Provide a different database user and password for each of the three schemas.</p> <p>You must specify schema names if you use a SQL Server RDBMS.</p>

Optimize

Software AG Installer

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→Proxy →Release →Directory →Products →Languages →License →**Configure** →Confirm →Install

Optimize

Network Interface

Host or IP address:

Configuration Ports

Specify the unique port for the Central Configurator to use to communicate with each Optimize component. If you install multiple instances of a component on the same machine, you must specify a unique port for each instance.

Analytic Engine port:

Web Service Data Collector port:

Install engines as: Applications Services

Field	Entry
Host or IP address	If you have multiple network interfaces, identify the one to use; the default is the default network interface for local machine. Do not use localhost.

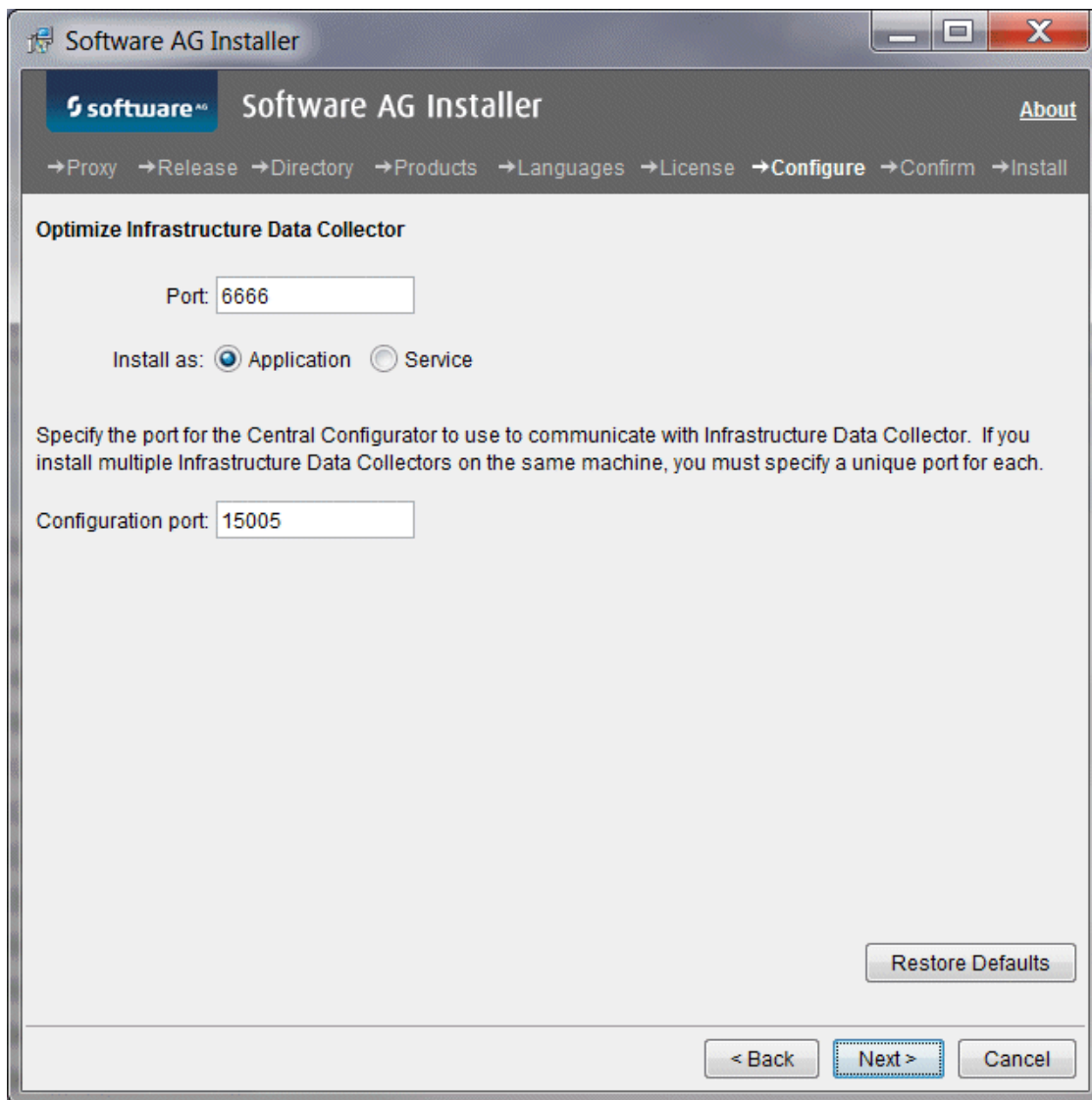
Optimize Application Monitoring Data Collector

The screenshot shows the 'Software AG Installer' window with the 'Optimize Application Monitoring Data Collector' step. The breadcrumb trail is: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Configure' step is active. The dialog contains the following fields and options:

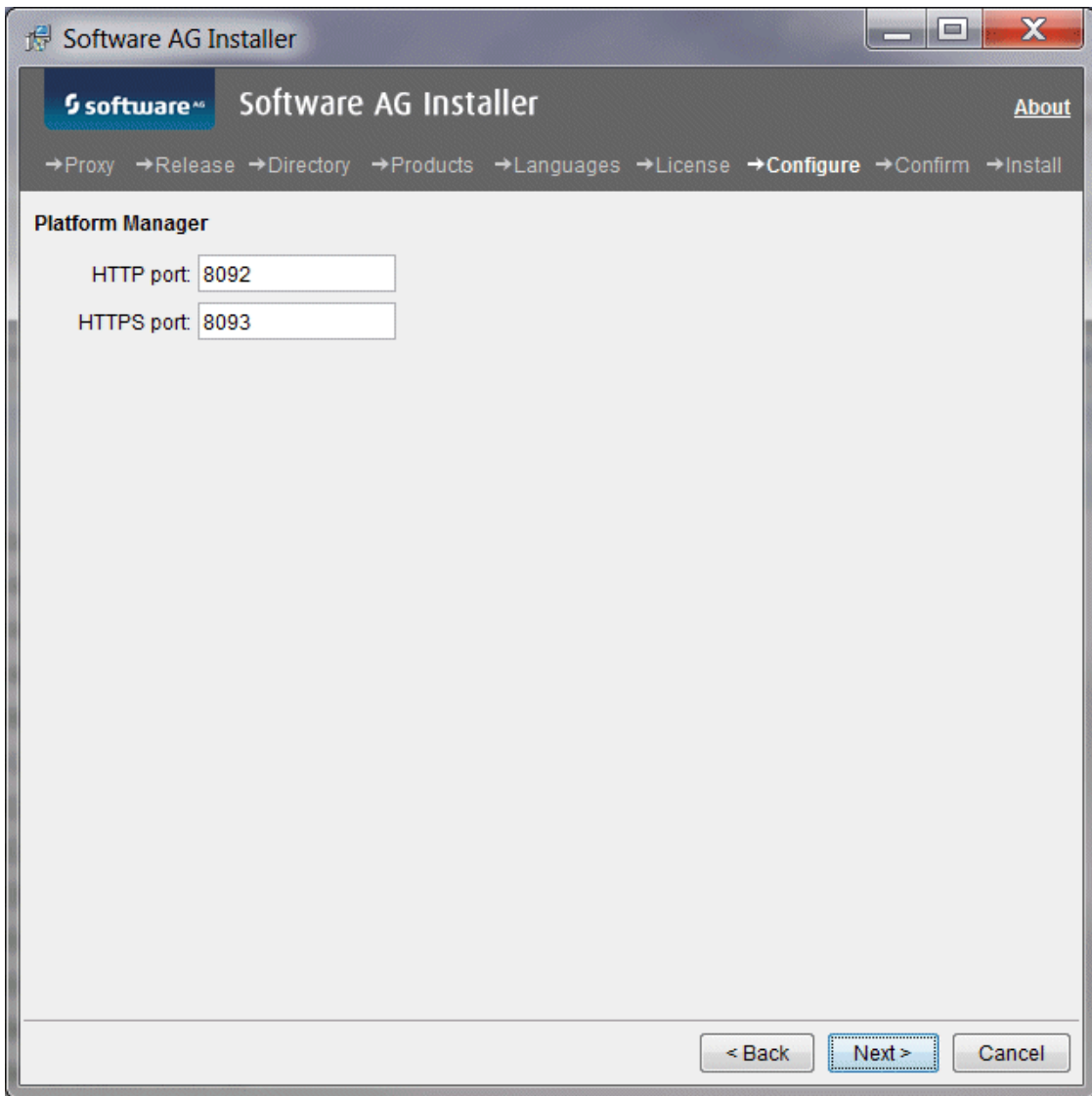
- JMS Server URL:** broker://localhost:6849/Broker #1
- Port:** 57900
- Install as:** Application Service
- Buttons:** < Back, Next >, Cancel, Restore Defaults

Field	Entry
JMS Server URL	URL of the JMS server used by Optimize. If Optimize is using Universal Messaging as the JMS server, specify a URL such as nsp://localhost:9000.

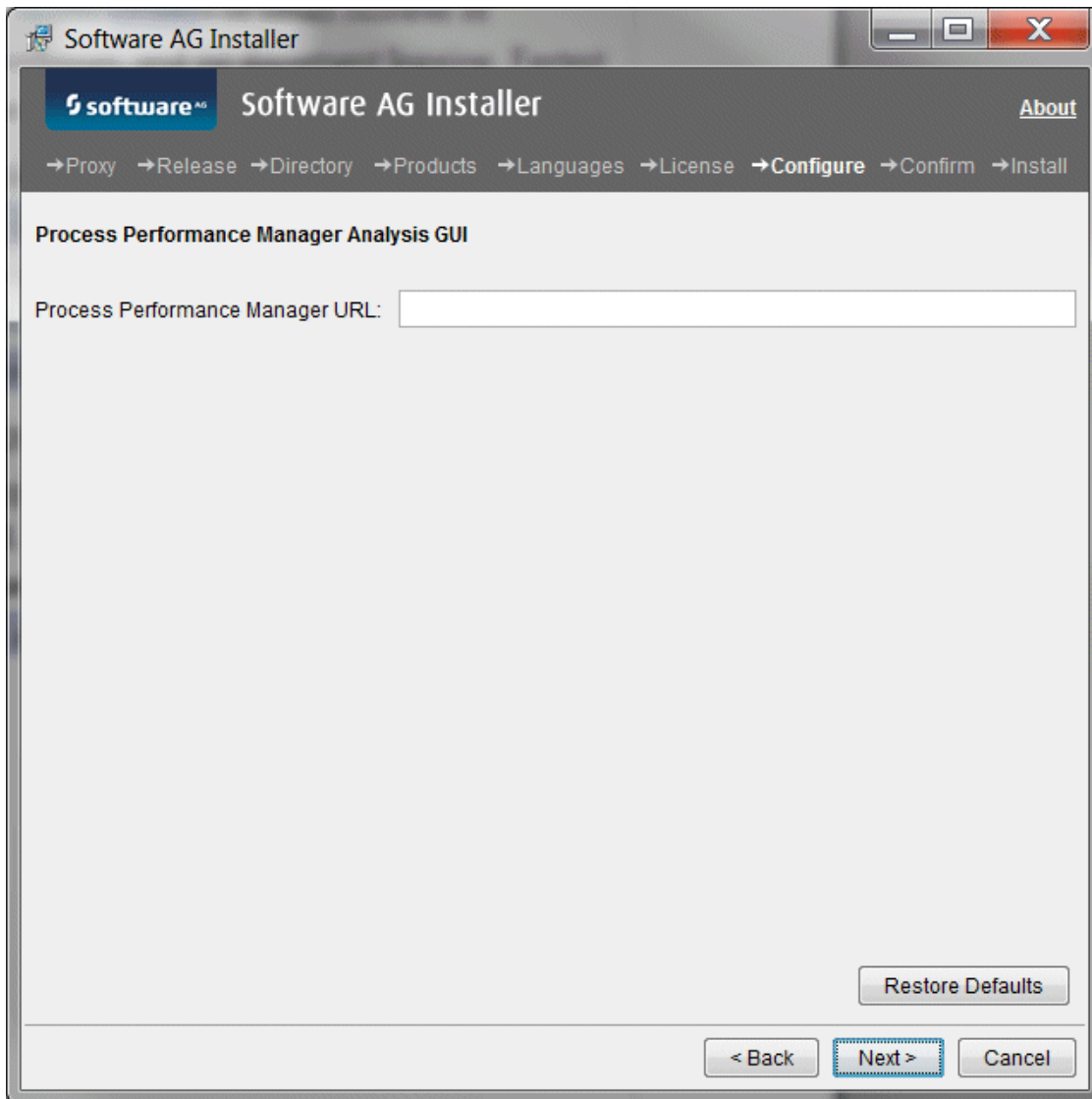
Optimize Infrastructure Data Collector



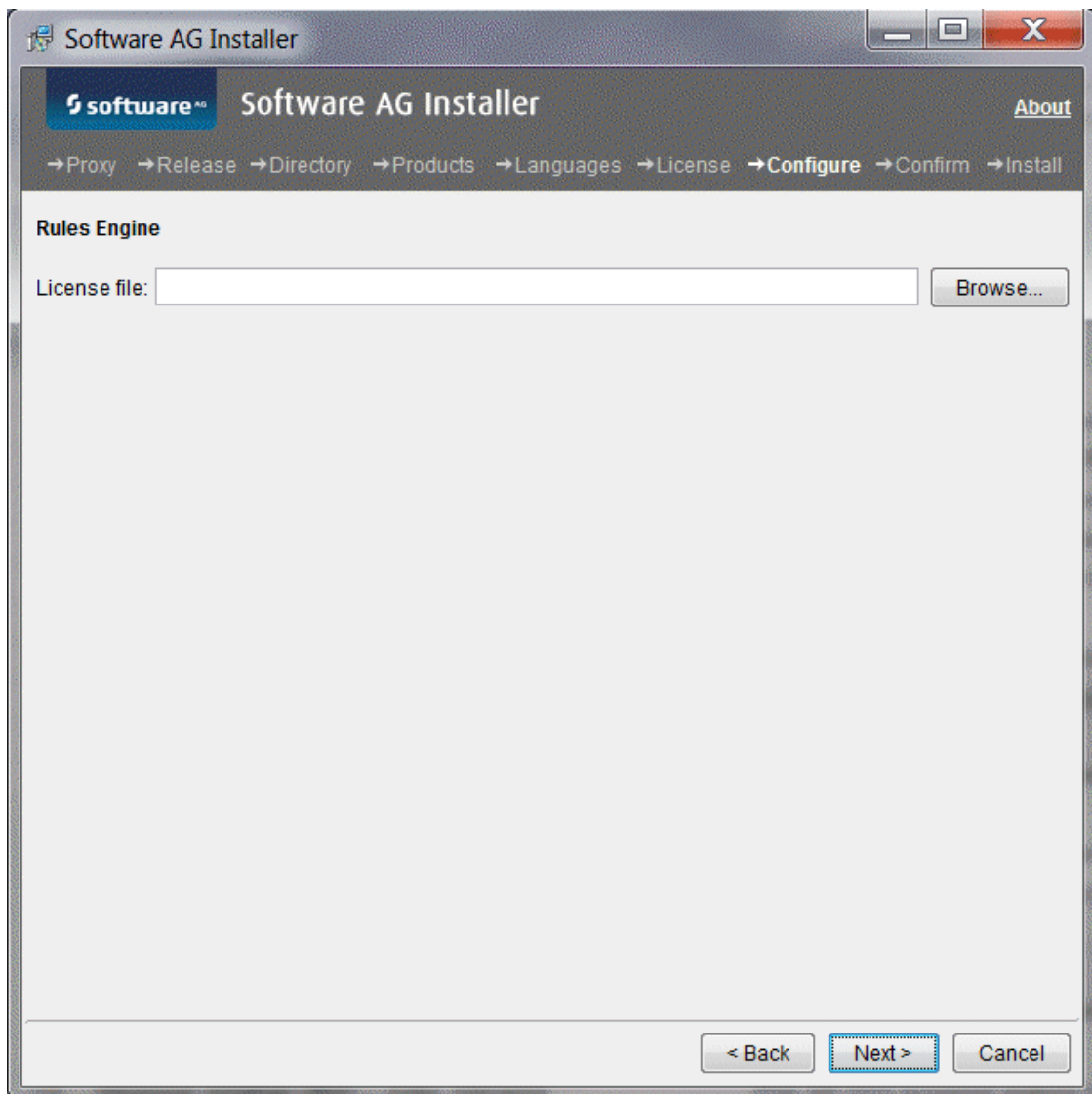
Platform Manager



Process Performance Manager Analysis GUI



Rules Engine



Trading Networks Server

Software AG Installer

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→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install

Trading Networks Server

Database Connection

You must specify the database connection or Trading Networks Server will not start.

RDBMS: Oracle

jdbc:wm:oracle://<server>:<port>;serviceName=<service>;[<option>=<value>...]

Connection name:

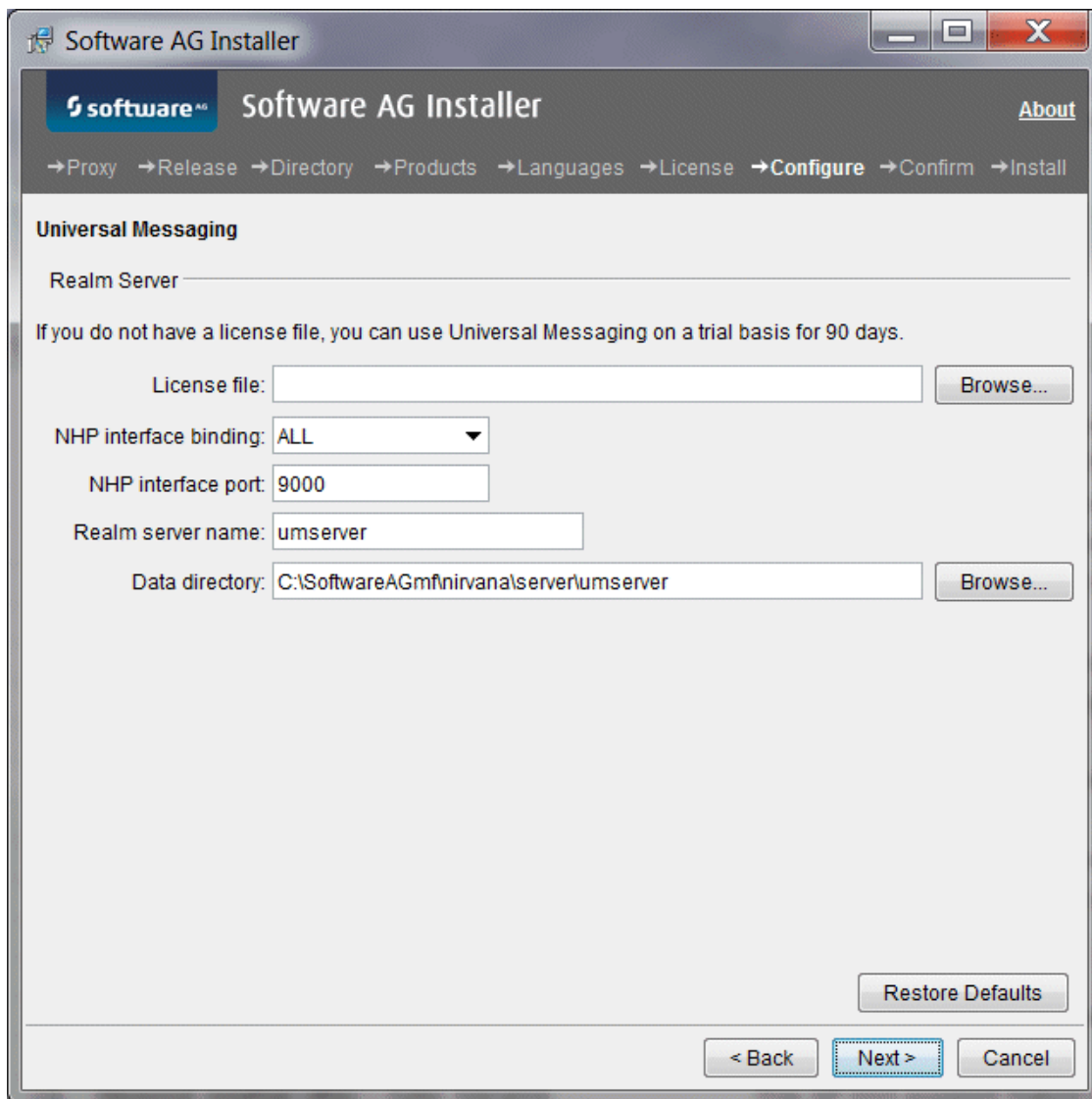
URL:

Database user:

Password:

< Back Next > Cancel

Universal Messaging



If you are installing a Universal Messaging realm server instance:

Field	Entry
License file	<p>If you do not have a Universal Messaging license file, you can use Universal Messaging on a trial basis for up to 90 days.</p> <hr/> <p>Note: If you obtain a Universal Messaging license file after installation, you can add it at that time.</p> <hr/>
NHP interface binding	<p>If your machine has multiple IP addresses and you want Universal Messaging to listen to a specific one, select that IP address from the list.</p> <hr/>

Field	Entry
NHP interface port	The installer sets up a bootstrap Universal Messaging interface to which all sample Universal Messaging applications and tools connect by default. Specify the port to which to bind the bootstrap interface.
Realm server name	Name for the realm server instance. If you are also installing an Enterprise Manager instance, Template Applications instance, or both, those instances will also use this name. Note: Different types of instances can have the same name. However, the name you supply here must be unique among instances of the same type (that is, among instances of realm servers).
Data directory	Full path to the directory for the realm server instance's data. If you install multiple realm server instances on the same machine, use a different data directory for each instance.

If you are installing a Universal Messaging Enterprise Manager instance, Template Applications instance, or both, but are not installing a Universal Messaging realm server instance:

Field	Entry
Realm name/client profile	Name for the Enterprise Manager instance, Template Applications instance, or both. You might want to use the name of the realm server instance to which the tools will connect. The list shows the names of any realm server instances that already exist in the installation directory, but you can also type a name. Note: Different types of instances can have the same name. However, the name you supply here must be unique among instances of the same type (that is, among instances of Enterprise Managers, and among instances of Template Applications).
Realm server URL (RNAME)	URL for the realm server instance to which the Enterprise Manager instance, Template Applications instance, or both should connect.

Create Database Components

If you installed these webMethods products, you must create webMethods database components:

- ActiveTransfer Server
- Blaze
- CloudStreams

- Integration Server
- Mediator
- Monitor
- My webMethods Server
- OneData
- Optimize
- Process Engine
- Rules Engine
- Trading Networks

For instructions, see [“Creating and Dropping Database Components”](#) on page 89.

Complete the Installation

For some products, you must perform certain tasks before startup. This section explains those tasks. For instructions on starting products and performing post-startup configuration and customization, see the product documentation.

Apply Latest Fixes

Apply the latest fixes for the products you installed. For instructions, see *Using the Software AG Update Manager*.

Register Daemons and Set File Permissions

If you installed on a UNIX system and were prompted to use sudo, but you did not use it, the installer was not able to register daemons and set file permissions for the affected products. Perform these tasks now by executing the script *Software AG_directory/bin/afterInstallAsRoot.sh* as the root user.

Important! You must run this script or some products might not work correctly.

Complete the webMethods Broker Installation

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]
```

Enable Full Core Dumps on an AIX System

On AIX systems, you must enable full core dumps. Using the AIX System Management Interface Tool (SMIT), run the command `smitty chgsys` and set `Enable full CORE dump` to `true`.

Complete the Content Service Platform Installation

- 1 Create the database user and password you want to use to create the Content Service Platform database tables. The database user must have privileges to create tables and indices. For Oracle, grant the database user `CONNECT` and `RESOURCE` privileges only.

- 2 Set up the Content Service Platform Server. Open a command window, go to the *Software AG_directory/CSP/server* directory, and run this command:

```
cspconfigurator.{bat|sh} -Dsetup.env.db.user=database_user -  
Dsetup.env.db.password=password
```

Note: Do not run this command more than once.

- 3 If you installed the Content Service Platform Windows Client, go to the *Software AG_directory\CSP\winclient* directory and locate the *Software AG webMethods CSP Client Setup 9.0.exe* file. If the file is on a Windows system, double-click the `.exe`. If the file is on a non-Windows system, copy the file to a Windows system and then double-click the `.exe`. The client installer wizard opens; follow the instructions to install the client.

Note: The `.exe` file name might contain additional numbers.

- 4 On a Windows system, you were given the choice to install Content Service Platform as an application or a service. If you installed Content Service Platform as an application, the Windows Start menu includes entries for starting and stopping Content Service Platform. If you installed Content Service Platform as a service, you must open a command window, go to the *Software AG_directory/CSP/server* directory and run the command `csp install` to complete the installation of the service and create Windows Start menu entries.

Complete the Integration Server Installation on a UNIX or Mac System

If non-root users will be running Integration Server, you might want to change the ownership of the installed files to allow a single non-root user to run Integration Server (`chown`), change the file group to the group of users who will run Integration Server (`chgrp`), or change file permissions to allow all users to run Integration Server (`chmod`).

Complete the MashZone and Process Performance Manager Installation

The MashZone and Process Performance Manager Cloud Agent is installed automatically on Windows systems. On Linux systems, you must install it manually, as a daemon. Go to the *Software AG_directory/ppmmashzone/server/bindirectory* and run the call `./CloudAgentApp.sh` install with sudo or root privileges.

Complete the Mobile Designer Installation

If you installed on a Windows system, go to the *Software AG_directory\MobileDesigner* directory and double-click the `MobileDesignerInstaller.exe` file.

If you installed on a Mac system, go to the *Software AG_directory/MobileDesigner* directory, unzip the `webMethods.MobileDesigner.pkg.zip` file, and double-click the `webMethods.MobileDesigner.pkg` file.

Follow the instructions to install Mobile Designer. You will be asked for your license key and other installation options such as JDK location.

Complete the My webMethods Server Installation

Set Up Automatic Startup on a UNIX System

If you installed My webMethods Server on a UNIX system and want My webMethods Server to start automatically each time you start your system, execute the My webMethods Server service registration script, as follows:

```
Software AG_directory/MWS/bin su ./mws.sh -s server_instance installservice  
mws.user=My webMethods Server_user_account [platform={suse|redhat}]
```

For more information on My webMethods Server startup, including optional parameters, see the section on running My webMethods Server from the command line in *Administering My webMethods Server 9.0*.

Complete the Terracotta Installation

Install the Terracotta License File

If you installed webMethods products that are licensed to use a distributed cache or to use a local cache with BigMemory, you must obtain a Terracotta license from Software AG and install it as follows:

- 1 If you installed multiple webMethods products in the same installation directory, a Terracotta license file might already exist. Go to the *Software AG_directory/common/conf* directory and check for the presence of a file named `terracotta-license.key`.
- 2 If no such file is present, copy the new license file into the *Software AG_directory/common/conf* directory.

If the file is present, open a text editor and examine the existing file and the new file. Each license file describes the capabilities it enables; determine which file satisfies the needs of the webMethods product that has the most demanding licensing requirements. For example, if one license permits 2GB of off-heap store and another permits 4GB off-heap store, use the one that permits 4GB off-heap store. Depending on your choice, keep the existing file or copy the new file into the *Software AG_directory/common/conf* directory.

Note: You are only permitted to use Terracotta with a webMethods product for which you have purchased a Terracotta license. Using Terracotta with an unlicensed product is prohibited. Do not change the name of the license file.

- 3 If you installed a Terracotta Server, copy the new license file to the Terracotta Server installation directory.

Note: If you install multiple Terracotta Servers because you want to create a Terracotta Server Array, you will need to copy the new license file to the installation directory of each Terracotta Server.

Create the tc-config File

Create the `tc-config` file using the instructions provided in *Getting Started with the webMethods Product Suite and Terracotta*. For Terracotta Server Array, create the `tc-config` file on each machine in the array.

Complete the Universal Messaging Installation

Enable High-Performance Spin Locks

Universal Messaging realm servers support high-performance spin locks. If you installed a realm server on a machine that is equipped with more than four CPUs, you can configure the realm server to consume the available CPUs by enabling spin locking. To do so, go to the *Software AG_directory/Nirvana/server/realm_server_name/bin* directory, open the `nserver.conf` file, and set the `DCORE_SPIN` property to `true`.

Connect Products to Each Other

If you installed all products at the same time, and did not change any port settings or default passwords after installation, many inter-product connections are configured automatically. For instructions on connecting products to each other, see the product documentation.

Uninstall

- 1 Shut down all non-Software AG applications that are running on the machine from which you are going to uninstall. If these applications are not shut down, the uninstaller will not be able to remove key files that are locked by the operating system.
- 2 If Software AG products in the directory from which you are going to uninstall are running, those products must be shut down or the uninstaller will not be able to remove key files that are locked by the operating system. The uninstaller will automatically shut down many of these products, but you must shut down some products manually before running the uninstaller. For details, see the section on shutting down products earlier in this chapter.
- 3 If you are going to uninstall all products in the installation directory, and you want to keep files you have stored in the *Software AG_directory/install* directory, move the files to a non-Software AG directory. The uninstaller will delete all files from the *Software AG_directory/install* directory except the logs and the installer-maintained *history.txt* file.
- 4 If you are going to uninstall Integration Server, retract all assets you have published to CentraSite. For instructions, see the *webMethods BPM and CAF CentraSite Metadata Help*.
- 5 If you are going to uninstall MashZone and Process Performance Manager, the Cloud Agent will be uninstalled automatically from Windows systems. From Linux systems, you must uninstall the Cloud Agent daemon manually. Go to the *Software AG_directory/ppmmashzone/server/bin* directory and run these scripts with `sudo` or root privileges:


```
ARISCloudAgentApp.sh remove
ARISCloudAgentApp.sh start
```
- 6 If you are uninstalling from an HP-UX 11i v3 system, set the variable `USE_J2D_FONTCONFIG` to `no`. In a Bourne or Bash shell, run the command `export USE_J2D_FONTCONFIG=no`.
- 7 If you are uninstalling from a UNIX system, and you used `sudo` to register daemons and set file permissions during or after installation, you must also use `sudo` to unregister daemons and remove file permissions.
 - If you are not using an uninstallation script to uninstall, you can tell the uninstaller to perform this task, or you can perform this task now by executing the script *Software AG_directory/bin/beforeUninstallAsRoot.sh* as the root user.

- If you are using an uninstallation script, the uninstaller cannot execute the script because it does not store the sudo password, for security reasons. You must execute the script yourself now.

Important! You must either have the uninstaller execute the script or run it yourself, or some products might not work correctly.

- 8 Uninstall the products using the Software AG Uninstaller. For instructions, see *Using the Software AG Installer*.
- 9 Reboot your system.
- 10 If you uninstalled Mobile Designer, you can remove the environment variable MOBILE_DESIGNER from your system.
- 11 If you uninstalled webMethods Broker, and your Broker Monitor was configured to run as a daemon, you can delete the Broker Monitor startup script from your UNIX startup directories. If you had configured a single Broker Monitor to run as a daemon, the startup script is named *Snumberbrokerrelease* (for example, S45broker95). If you had configured multiple Broker Monitors to run as daemons, the names of the startup scripts have an additional character at the end to make them unique (for example, S45broker95_1, S45broker95_2, and so on).
- 12 The Software AG Uninstaller does not delete files that were created after you installed your products (for example, user-created or configuration files), nor does it delete the directory structure that contains the files. If you are going to reinstall into the same directory, delete the product directories after uninstallation is complete or, if you want to save the files, move them.

6 Creating and Dropping Database Components

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webMethods Products and Databases

If you installed these webMethods products, you must create webMethods database components:

- ActiveTransfer Server
- Blaze
- CloudStreams
- Integration Server
- Mediator
- Monitor
- My webMethods Server
- OneData
- Optimize
- Process Engine
- Rules Engine
- Trading Networks

A database component is a grouping of database objects that can be used by one or more products. For example, Integration Servers write process status data to the Process Audit Log database component; My webMethods Server reads the data from the Process Audit Log database component and passes it to My webMethods to display. Each database component is named for the type of data that is written to it; for example, the database component for IS Core Audit Log data is called the ISCoreAudit database component.

The products listed above use Java Database Connectivity (JDBC) to interact with their databases; specifically, to query and update data in database components. Unless otherwise noted, the products use the DataDirect Connect JDBC 5.1 driver. The products come with the client component of this driver; it is a Type 5 JDBC native-protocol driver that does not have a server component. The products use the driver to convert JDBC requests from Java programs directly into the vendor-specific database protocol that each type of RDBMS can understand. The products execute DDL commands at install time and sometimes design time for each RDBMS with which they interact. For information about the driver, see *DataDirect Connect for JDBC User's Guide and Reference 5.1* in the [Software AG_directory/_documentation](#) directory or on the [Software AG Documentation Web site](#).

To enable products to interact with a database component, you provide database connection parameters, usually during product installation, and the Software AG Installer uses the parameters to configure JDBC connection pools. After product installation and database component creation is complete, you set up the products to use the appropriate connection pools.

For the list of RDBMSs supported by webMethods products, see the *webMethods System Requirements*.

Note: If you want your products to exchange data with databases other than webMethods databases, you can use the webMethods JDBC Adapter. For more information, see the webMethods JDBC Adapter documentation.

Data Storage

Integration Server Data Storage

Integration Server can persist the types of data below.

Note: For detailed information on product concepts mentioned below, see the relevant product documentation.

Database Component	Types of Data	Integration Server writes this data when...
ISInternal	Scheduled tasks, client certificate mappings, run-time data for pub.storage services, audit log of guaranteed delivery transactions, trigger joins, and configuration and runtime data for OAuth.	You are using the features listed in the Types of Data column
ISCoreAuditLog	<ul style="list-style-type: none"> ■ Error, guaranteed delivery, service, security, and session audit data. 	Logging is enabled
	<ul style="list-style-type: none"> ■ Documents that are in doubt, have failed, or have exhausted trigger retries. 	You are using triggers
CrossReference	Cross-referencing data* for publish-and-subscribe solutions.	You are using publish-and-subscribe solutions
DocumentHistory*	Document history data for exactly-once processing in publish-and-subscribe solutions. Integration Server uses the data to detect and reject duplicate documents.	You are using exactly-once processing
Distributed Locking	Information that coordinates access to resources across distributed servers and processes.	Executing services in the pub.storage folder.

Embedded Database versus External RDBMS

When you install Integration Server, the installer asks whether you want Integration Server to write data to an embedded database or an external RDBMS. You must use an RDBMS if you are going to:

- Cluster Integration Servers.
- Install Integration Server in a production environment with high transaction volumes or large datasets.
- Write Document History data.
- Write Process Audit Log and Process Engine data for business processes.
- Have services log their input pipelines, or post user-defined progress messages.
- Use triggers, Business Rules, or Monitor.

If none of the above apply, you can use the embedded database when you are going to use Integration Server as a standalone server (for example, as the run time for adapters, or Deployer).

Using the Embedded Database

Integration Server uses Derby, a file-based database, as its embedded database. If one database file gets corrupted, the entire database might become unusable. Software AG therefore recommends backing up the *Software AG_directory\IntegrationServer\db* folder periodically so you will be able to return to the last known good state if necessary.

When you choose to use the embedded database, Integration Server writes IS Internal and Cross Reference data to that database, and writes IS Core Audit Log data to files.

If you later want to write these types of data to an external RDBMS instead, you will need to create the necessary database components in the RDBMS (see [“Product Database Component Descriptions and Installation Requirements” on page 94](#)) and configure Integration Server to write to them (see [“Connect Products to Database Components” on page 122](#)). You must also complete the steps for switching from the embedded database to an external RDBMS as described in the *webMethods Integration Server Administrator’s Guide*.

Using the External RDBMS

When you use an external RDBMS, you must create the ISCoreAudit, ISInternal, and DistributedLocking database components in the RDBMS. You must create the ISInternal and DistributedLocking database components in the same schema (Oracle) or database (DB2 or SQL Server). You will also create other database components as needed. For example, if you are using publish-and-subscribe solutions and exactly-once processing, you will need the CrossReference and DocumentHistory database components; if you are running business processes, you will need the ProcessAudit and ProcessEngine database components. For complete information about the database components you will need to create, see [“Product Database Component Descriptions and Installation Requirements” on page 94](#).

When you choose to use an external RDBMS, the installer asks you to supply the database connection. From this information, the installer creates a JDBC connection pool and configures Integration Server to write IS Internal, IS Core Audit Log, Cross Reference, Distributed Locking, Document History, Process Audit Log, and Process Engine data to the external RDBMS using that pool.

Note: This auto-configuration of Integration Server is for ease of use only. You need not create all the corresponding database components; only create those you will actually use. Also, in a production environment, you might want to create additional JDBC connection pools and reconfigure Integration Server to write different types of data using different pools. [“Connect Products to Database Components” on page 122](#) provides instructions.

If you are clustering Integration Servers, create an ISCoreAudit database component, an ISInternal database component, and a DistributedLocking database component in the same schema (Oracle) or database (DB2 or SQL Server) for the cluster to share. Also create a CrossReference database component and a DocumentHistory database component for the cluster to share.

If you are not clustering Integration Servers, create an ISInternal database component and a Distributed Locking database component in the same schema (Oracle) or database (DB2 or SQL Server) for all Integration Servers to share. Also create the ISCoreAudit, CrossReference, and DocumentHistory database components; you can create a single instance of each of those database components for all Integration Servers to share, or you can create a separate instance of each of those database components for each Integration Server.

My webMethods Server Data Storage

My webMethods Server and Task Engine persist the types of data below.

- My webMethods Server writes data about deployment, configuration, security, portal pages, and run-time operations. It uses this data to manage the My webMethods user interfaces (for example, the user interfaces for webMethods Broker, Monitor, Optimize, and Trading Networks) and to support central user management in Integration Server and Optimize.
- Task Engine writes task status, task distribution, and business data. The Task Engine user interface in My webMethods displays the data.

Embedded Database versus External RDBMS

When you install My webMethods Server, the installer asks whether you want My webMethods Server (and Task Engine) to write data to an embedded database or an external RDBMS. You must use an external RDBMS if you are going to:

- Cluster My webMethods Servers.
- Install My webMethods Server in a production environment.

If none of the above apply, you can use the embedded database when you are installing My webMethods Server for the sole purpose of running Command Central, or running the Broker Messaging user interface in My webMethods.

Important! If you choose the embedded database during installation, you cannot later switch to write data to an external RDBMS.

Using the Embedded Database

My webMethods Server uses Derby, a file-based database, as its embedded database. If one database file gets corrupted, the entire database might become unusable. Software AG therefore recommends backing up the *Software AG_directory\MWS\server\server_instance\data\db* folder regularly so you will be able to return to the last known good state if necessary. If you do not take a backup, you can restore the database to an empty state from the *Software AG_directory\MWS\server\template-derby.zip\data\db* directory.

Using an External RDBMS

When you use an external RDBMS, you must create the MywebMethodsServer database components in your external RDBMS. When you choose the external RDBMS in the installer, the installer asks you to supply the database connection.

If you are clustering My webMethods Servers, create a single MywebMethodsServer database component for the cluster to share. If you are not clustering, create a separate MywebMethodsServer database component for each My webMethods Server.

Product Database Component Descriptions and Installation Requirements

This section briefly describes each database component and its installation requirements.

Note: For detailed information on product concepts mentioned in the sections below, see the relevant product documentation.

ActiveTransfer Database Component

If you installed ActiveTransfer Server, you must create the ActiveTransfer database component.

ActiveTransfer Server writes listener (port), server, user configuration, and other metadata to this database component. ActiveTransfer Server also writes run-time data, such as file transfer transaction information and audit data. MashZone displays the data from this database component in dashboards. If you are clustering ActiveTransfer Servers, create a single ActiveTransfer database component for the cluster to share. If you are not clustering, create a separate ActiveTransfer database component for each ActiveTransfer Server.

Archive Database Component

If you want to archive data from the ISCoreAudit and ProcessAudit database components (called the "source" database components in this section), create the Archive database component.

The Archive database component includes a copy of the ISCoreAudit and ProcessAudit database components. You must create the Archive database component in the same type of RDBMS as the source database components. Depending on the RDBMS, you can do the following:

- For Oracle, DB2, or SQL Server, you can create the Archive database component on the same database server as the source database components. In this case, you must create the Archive database component in a different schema (Oracle or DB2) or database (SQL Server) than the source database components.
- For Oracle or SQL Server, you can create the Archive database component on a different database server than the source database components, and then create a DBLink name for the Archive database component to use to link to each source database component. If the two source database components are on the same database server, the Archive database component can use the same DBLink to connect to both source database components. For instructions on specifying the DBLink name, see *webMethods Monitor User's Guide*.

BPM

Blaze Database Component

If you installed Blaze, create the Blaze database component. Doing so creates a database table named BLAZE_REPOSITORY. Supply this name when you create the Blaze repository using the repository creation wizard (see *Using Blaze Rules with BPM and CAF*).

BusinessRules Database Component

If you installed the Rules Engine, create the BusinessRules database component. You must create the database component in the same schema (Oracle) or database (SQL Server and DB2) as the ProcessAudit database component.

As each Rules Engine instance starts, it registers itself in this database component and stores information about deployed projects and the state of business rules instances. When you modify a business rule, the hot deployment functionality in the Business Rules user interface in My webMethods enables you to deploy changes to all of the instances registered in this database component.

If you install multiple Rules Engine instances, create a single BusinessRules database component for the instances to share.

ProcessAudit Database Component

If you installed the Process Engine, create the ProcessAudit database component.

The following write to this database component:

- Process Engines write process audit data for business processes they orchestrate.
- Task Engines write task audit data.
- Third-party products can write process execution data.

Optimize Analytic Engines read process data from this database component so they can analyze capabilities such as transition duration and write data about analysis-enabled processes. The Optimize user interface in My webMethods displays the data.

If you are distributing business process steps, you cluster the Process Engines that orchestrate the steps. Create a single ProcessAudit database component for the cluster to share. Integration Servers that host these Process Engines, and also Integration Servers that host the Blaze Rule Service Support package, register themselves in the shared ProcessAudit database component. This registration allows users who modify rules in the Blaze user interface in My webMethods to deploy the modified rules to the registered Integration Servers.

If you are not distributing business process steps, and therefore not clustering Process Engines, you can create either a separate ProcessAudit database component for each Process Engine or a single shared ProcessAudit database component.

Create a single ProcessAudit database components for all Task Engines to share.

If you are using Process Engines, Task Engines, Optimize Analytic Engines, or some combination of these, create a single ProcessAudit database component for all to share.

ProcessEngine Database Component

If you installed the Process Engine, create the ProcessEngine database component.

Process Engines write process execution data for processes they orchestrate to this database component.

If you are distributing business process steps, you cluster the Process Engines that orchestrate the steps. Create a single ProcessEngine database component for the cluster to share. If you are not clustering, create a separate ProcessEngine database component for each Process Engine.

CloudStreamsEvents Database Component

If you installed CloudStreams, create the CloudStreamsEvents database component.

CloudStreams Server writes lifecycle (startup/shutdown), error, policy violation, monitoring, performance metric, and transaction events to the CloudStreamsEvents database component. CloudStreams Analytics reads the events data and displays it using MashApps.

If you have multiple CloudStreams Server instances, regardless of whether they are clustered or not, create a single CloudStreamsEvents database component for them to share.

Designer

See [“Staging and Reporting Database Components”](#) on page 97.

Integration Server

See [“Integration Server Data Storage”](#) on page 91.

MediatorEvents Database Component

If you installed Mediator, create the MediatorEvents database component in the same schema (Oracle) or database (SQL Server and DB2) as the ISCoreAudit database component.

Mediator writes transaction events about certain SOA policies to the MediatorEvents database component.

Staging and Reporting Database Components

If you want to simulate business processes in Designer using historical data, create the Staging and Reporting database components. Services you run will extract the historical data from the ProcessAudit database component and aggregate and load the data using the Staging and Reporting database components.

You can create the Reporting and Staging database components in the same schema (Oracle) or database (DB2 or SQL Server). However, the services that aggregate and load the historical data consume large amounts of the CPU. For best performance, install the Reporting and Staging database components on a database server that will not adversely affect the ProcessAudit or ProcessEngine database components.

The ProcessAudit, Staging, and Reporting database components have a 1-to-1-to-1 relationship. This means that you cannot gather data from multiple ProcessAudit database components into a single Reporting database component. Simulation can be performed from only one Reporting database component at a time.

My webMethods Server

See [“My webMethods Server Data Storage”](#) on page 93.

OneDataMetadata, OneDataWorkArea, OneDataReleaseArea Database Components

If you installed OneData, you must create the OneDataMetadata, OneDataWorkArea, and OneDataRelease Area database components.

- OneData writes internal configuration data to the OneDataMetadata database component.
- OneData users create data objects and work-in-progress data values in the OneDataWorkArea database component.

- The OneDataReleaseArea database component contains the same data objects as the OneDataWorkArea database component, and approved data values. Data values are deployed from the OneDataReleaseArea database component.

You must create each OneData database component in a separate schema (Oracle) or database (SQL Server), and use a different database user for each database component. You must create the OneDataMetadata database component first, then the OneDataWorkArea database component, then the OneDataReleaseArea database component.

Optimize

Analysis Database Component

If you installed Optimize, create the Analysis database component.

Optimize Analytic Engines write computed analytics and process and monitoring data received from Infrastructure Data Collectors and Web Service Data Collectors to the Analysis database component. The Optimize user interface in My webMethods displays the data.

Create a single Analysis database component for all Optimize Analytic Engines to share. If you are going to use root cause analysis for business processes, install the Analysis and ProcessTracker database components in the same schema (Oracle) or database (DB2 or SQL Server).

CentralConfiguration Database Component

The CentralConfiguration database component is automatically created when you create the MywebMethodsServer database component. The CentralConfiguration database component stores the Optimize configuration information you enter in the Central Configuration interface in My webMethods.

Note: The CentralConfiguration database component is not automatically *dropped* when you drop the MywebMethodsServer database component. If you want to drop the CentralConfiguration database component, you must do so manually.

Process Audit

If you installed Optimize, create the ProcessAudit database component. See [“ProcessAudit Database Component” on page 95](#).

ProcessTracker Database Component

If you installed Optimize, create the ProcessTracker database component.

Optimize Analytic Engines write business and process status data received from processes that are not orchestrated by the Process Engine to the ProcessTracker database component. The Optimize user interface in My webMethods displays the data.

Create a single ProcessTracker database component for all Optimize Analytic Engines to share. If you are going to use root cause analysis for business processes, install the ProcessTracker and Analysis database components in the same schema (Oracle) or database (DB2 or SQL Server).

Trading Networks

TradingNetworks Database Component

If you installed Trading Networks Server, create the TradingNetworks database component.

Trading Networks Server writes metadata (partner profiles, trading partner agreements, document types, processing rules, and partner profile groups) and run-time data (documents, document content parts, attributes, and delivery information) to the TradingNetworks database component. Trading Networks Server also logs entries about document processing steps. The Trading Networks user interface in My webMethods displays the data.

If you are clustering Trading Networks Servers, create a single TradingNetworks database component for the cluster to share. If you are not clustering, create a separate TradingNetworks database component for each Trading Networks Server.

TradingNetworksArchive Database Component

If you want to archive Trading Networks data, also create the TradingNetworksArchive database component. Create the TradingNetworks and the TradingNetworksArchive database components in the same schema (Oracle) or database (SQL Server and DB2).

Infrastructure Database Components

The Storage database component creates default storage structures, such as tablespaces and user credentials, for all database components.

The table below lists infrastructure database components that are automatically created when you create product-related database components.

Database Component	Description
ComponentTracker	Tracks the database components that are created or dropped.
DataPurge	Provides a common method for purging data from the Analysis and database components.
DatabaseManagement	Provides core routines for data purge functionality.
OperationManagement	Provides a common method for configuration, logging, and error handling for any database component.

Preparing for Database Component Creation

Database User

You can create one database user for multiple database components, or you can create a different database user for each database component. Later sections in this chapter explain how to create database users.

The database user must have the permissions listed in the file below.

RDBMS	Path to File
Oracle	<i>Software AG_directory</i> \common\db\scripts\oracle\storage\25\create\ora_str_c_ddl_user.sql
	Note: webMethods scripts require ALTER SESSION permission at the time of creating database tables. You can revoke this permission after the tables have been created.
SQL Server	<i>Software AG_directory</i> \common\db\scripts\mssql\storage\30\create\mss_str_c_ddl_user.sql
DB2	<i>Software AG_directory</i> \common\db\scripts\db2\storage\30\create\db2_str_c_ddl_user.sql

Storage

You can create all database component objects in the same storage or you can create the objects for each database component in its own storage. If database storage does not yet exist, you must create it at the same time you create your database components. Later sections in this chapter explain how to create storage.

By default, all database components follow the storage convention below. You can use a different storage convention when you create storage.

RDBMS	Data Storage Unit	Index Storage Unit	BLOB Storage Unit
Oracle tablespaces	WEBMDATA	WEBMINDX	WEBMDATA
SQL Server filegroups	Primary	Primary	Primary
DB2 for LUW tablespaces	WEBMDATA	WEBMINDX	WEBMBLOB

Database Administrator Account

You need DBA access only if you want to use the Database Component Configurator to create the necessary database users and storage objects.

webMethods products are designed to use the database users you create for the database components.

Character Set and Sort Order

webMethods products are globalized and support Unicode. Software AG strongly recommends choosing a Unicode encoding for your database and the most appropriate sort order for your environment. A database character set determines which languages a database can represent. Database sort order determines collation and comparison behavior.

The sections below list the most appropriate Unicode character encoding and sort order for each RDBMS that webMethods products support. If you want to use a different character set or sort order than recommended below, consult your database administrator and your RDBMS vendor's documentation so you can carefully choose a database character set that supports the languages your data is in.

If you use the Database Component Configurator to create your database components, you can check whether the selected RDBMS is configured for the Unicode character set. If the RDBMS does not support Unicode, the configurator lists the character set the RDBMS does support.

Important! You must set character set and sort order before creating storage.

Oracle

Database schemas for Oracle use character data types. For character data types, Oracle supports the UTF8 and AL32UTF8 Unicode encodings. While UTF8 is CESU-8 compliant and supports the Unicode 3.0 UTF-8 Universal character set, AL32UTF8 conforms to the Unicode 3.1 or higher UTF-8 Universal character set. For nchar data types, Oracle supports the AL32UTF8 and AL16UTF16 Unicode encodings. The supported Unicode version for AL32UTF8 depends on the Oracle database version. Oracle database schemas for webMethods products do not have linguistic indexes. Software AG recommends these character sets and sort order:

For...	Software AG recommends...
Character set	AL32UTF8
Nchar character set	AL16UTF16
Sort order	Binary

You can check database configuration and session settings by viewing the SYS.NLS_DATABASE_PARAMETERS or V\$NLS_PARAMETERS parameter.

SQL Server

Database schemas for SQL Server use nchar data types. SQL Server provides support for UTF-16 through its nchar data types. Since nchar data types are always in UTF-16, you do not have to perform any special database configuration and can choose the most appropriate code page for your environment as a database character set. Software AG recommends these character sets and sort order:

For...	Software AG recommends...
Character set	The appropriate encoding for the languages your data is in.
Nchar character set	UTF-16
Sort order	Any case-insensitive collation type.
	Important! If you do not choose a case-insensitive sort order, you will not be able to create some database components in SQL Server.

You can check the database configuration using the `sp_helpdb database` stored procedure.

DB2 for LUW

Database schemas for DB2 use character data types. DB2 supports UTF-8 for character data types and UTF-16 for graphic data types. Software AG recommends these character sets and sort order:

For...	Software AG recommends...
Character set	CCSID 1208 (UTF-8)
	Note: My webMethods Server requires this character set.
Graphic Character Set	UTF-16
Sort order	IDENTITY_16BIT
	Note: This sort order ensures the same sorting result for both character and graphic data types.

You can check the database configuration using the `GET DATABASE CONFIGURATION` command.

Page and Block Size

Use the page and block sizes specified below for each type of RDBMS.

RDBMS	Required Page and Block Size	Default
Oracle	8k page/block size	8k
SQL Server	8k page/block size	8k
DB2	32k page size	4k

Set Database Options

Oracle

For webMethods products to function properly, you must set the `NLS_LENGTH_SEMANTICS` initialization parameter to `BYTE`.

Important! webMethods products use `BYTE` rather than `CHAR` semantics because `BYTE` is the default configuration of Oracle database and is used by most Oracle users. If you try to use webMethods products with `CHAR` semantics, unexpected results might occur. For example, since `CHAR` semantics allow storage of longer data than `BYTE` semantics (for Japanese, `varchar(12 byte)` takes four characters in UTF8 while `varchar(12 char)` takes 12), using `CHAR` semantics could cause the buffer in some products to overflow.

SQL Server

The following database settings are required for webMethods products to function properly:

```
ALTER DATABASE database_name SET ALLOW_SNAPSHOT_ISOLATION ON;
ALTER DATABASE database_name SET READ_COMMITTED_SNAPSHOT ON;
```

In addition, enable Named Pipes and TCP/IP protocols using the SQL Server Configuration Manager.

By default, SQL Server uses case-insensitive collations. If you create the My webMethods Server database component, do not change this option from the default; My webMethods Server does not support case-sensitive collations.

Install the Database Component Configurator and Database Scripts

The Database Component Configurator and database scripts are available through the Software AG Installer. For complete instructions on using the installer, see *Using the Software AG Installer*.

- 1 Download the Software AG Installer as instructed by your installation email from Software AG to the appropriate machine, as follows:

If you are going to create database components...	Download the Software AG Installer to...
Automatically, using the Database Component Configurator	Any machine on the same network as your database server
Manually, using database scripts	A machine equipped with the database client for your type of RDBMS

- 2 Start the installer.
- 3 In the product selection list, select **Database Configuration > Database Scripts** or **Database Component Configurator**, as desired.
- 4 The Database Component Configurator has the default environment settings shown below. If necessary, you can change them as described below.
 - a Go to the *Software AG_directory*\common\db\bin directory.
 - b Open the setEnv.{bat|sh} file in the text editor and edit the fields as necessary.

Setting	Determines whether the configurator...	Default
-DtermOutOn	Writes execution information to the console.	true
-DspoolOn	Logs execution information.	true
-DlogLevel	Sets the log level to INFO (high-level information) or DEBUG (more detailed information, including internal processing and SQL calls).	INFO
-Dlog.dir	This setting specifies the full path to the directory in which to store the log files. Make sure you have permission to write to this directory.	<i>Software AG_directory</i> \common\db\logs

- c Save and close the file.

Use the Database Component Configurator Graphical User Interface

This section explains how to use the Database Component Configurator graphical user interface (GUI) to create or drop a database user and storage, and to create or drop database components. Each run of the configurator operates on a single schema.

You can use the Database Component Configurator GUI on all operating systems that are supported by webMethods products. UNIX systems must have an X Windows environment.

The configurator writes execution information to the **Results** tab and to a log file named `dcc_yyyymmddHHMMss` in the *Software AG_directory*\common\db\logs directory.

Create Database Components, Database User, and Storage

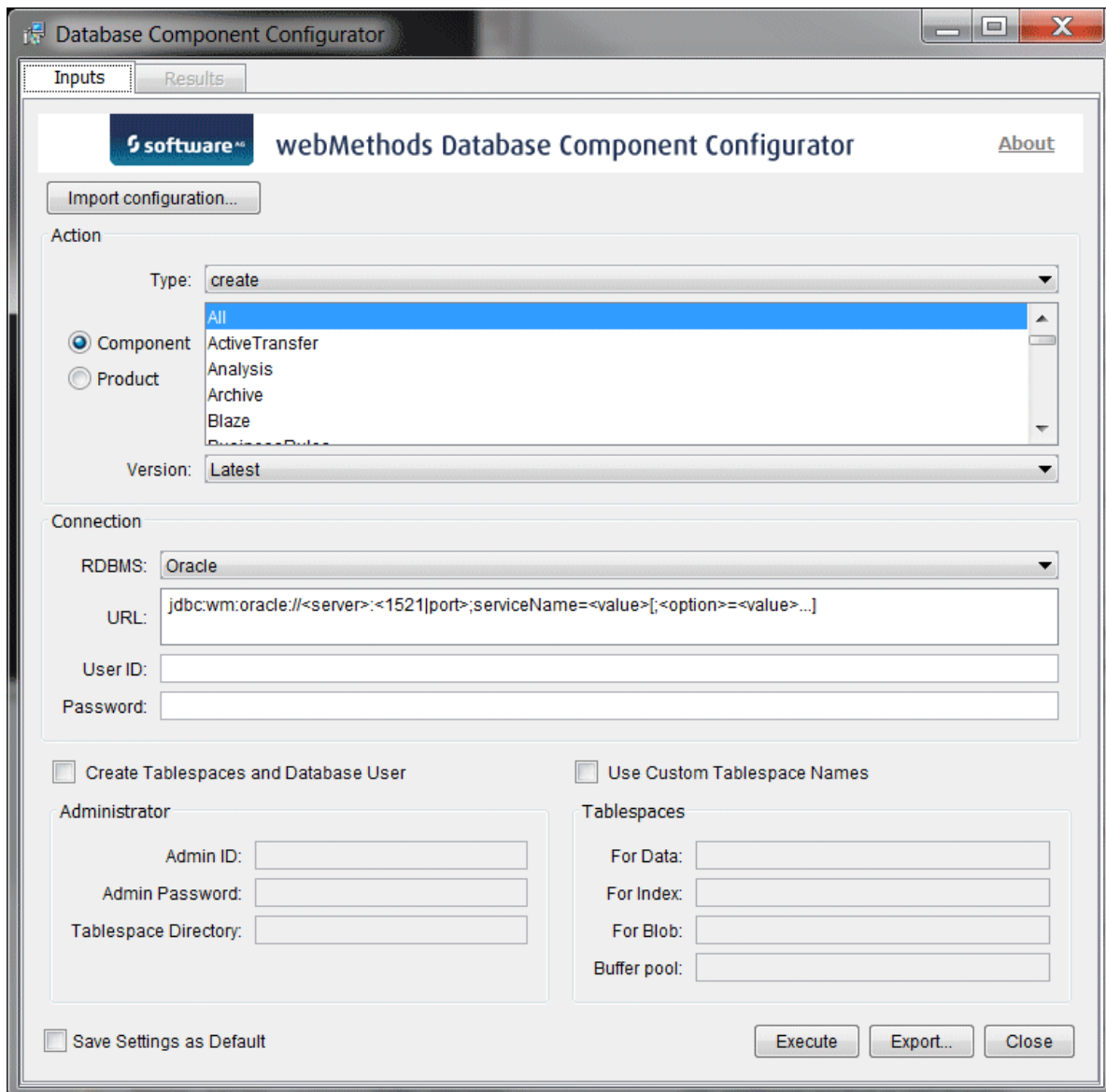
If database storage does not yet exist, you must create it either before or at the same time that you create your database components.

Important! When you create database components in DB2 using the Database Component Configurator, the configurator creates the schema name in all uppercase letters. Since DB2 is case sensitive for schema names, you must use all uppercase letters for the schema names when you type them in URLs for JDBC connection pools, or you will experience problems.

Start the Database Component Configurator GUI

Start the Database Component Configurator GUI as follows:

System	Action
Windows	On the Start menu, go to Programs > Software AG> Tools > Database Component Configurator.
UNIX	Go to <i>Software AG_directory</i> and run the command <code>dbConfigurator.sh</code> .



Initially, some of the fields on the **Inputs** tab show values you entered for the same fields in the Software AG Installer during product installation. You can change these values and specify other field values.

Choose the Action to Perform

In the **Action** area, in the **Type** list, click the action to perform, as follows:

Option	Action
create	Creates the database components you select in the Action area, and lets you create a database user and storage.

Option	Action
recreate	Drops and then re-creates the database components you select in the Action area.
catalog	Displays existing database components on the Results tab.
checkEncoding	Checks whether your RDBMS is Unicode-enabled and displays the answer on the Results tab.

Specify the Connection to the RDBMS

Specify the connection for the configurator to use to connect to the RDBMS.

- 1 In the RDBMS list, click the RDBMS in which to create the database components.
- 2 In the URL field, provide the URL for the RDBMS. Sample URL formats for the DataDirect Connect JDBC 5.1 driver are displayed. Below is additional information for completing this field.
 - For Oracle, if you are going to create storage and the Data Purge database component, you must specify the `sysLoginRole` connection option on the URL (for example, `;sysLoginRole=sysdba`).
 - For DB2, if you are going to create database components in a schema other than the default schema for the specified database user, you must specify these connection options in the URL, where `AlternateID` is the name of the default schema used to qualify unqualified database objects in dynamically prepared SQL statements:

```

;AlternateId=schema;"InitializationString=(SET CURRENT
PATH=current_path,schema)"

```

Important! If you are creating Optimize database components (that is, Analysis and ProcessTracker), you must specify `schema` using all uppercase letters. In addition, you must specify the options `CreateDefaultPackage=true`, `ReplacePackage=true`, and `DynamicSections=3000`. These settings will affect all database components in the same schema or database.
 - For information about options supported by the DataDirect Connect JDBC 5.1 driver used by webMethods products, including options that support clustering, data encryption (SSL), and different authentication methods, see *DataDirect Connect for JDBC User's Guide and Reference 5.1* in the *Software AG_directory/_documentation* directory or on the [Software AG Documentation Web site](#).
- 3 In the User ID and Password fields, your entries depend on the task you are going to perform, as described below.

Note: You can choose to specify this authentication information in the URL, using DataDirect options, rather than in these fields.

If you are...	Specify...
Creating a database user and storage in Oracle or SQL Server	<p>The database user and password to create.</p> <hr/> <p>Note: For SQL Server, the user will be created and a default schema named dbo will be assigned to that user.</p> <hr/> <p>Important! For Oracle, do not use the SYSTEM user to create the database components in the SYSTEM schema.</p> <hr/>
Creating a database user and storage in DB2 for LUW	The OS user to which to grant permissions, and the password for that user.
Creating database components or performing the catalog action	An existing database user and password.
Performing the checkEncoding action	An existing database user that has create session and create table privileges, and that database user's password.

Create Database Components, Database User, and Storage

If you selected create in the Action Type list, do the following In the Action area:

- Select the database components to create. You can use any of the options below.
 - Click **Component** and select one or more database components to create. You can select **All** to create all database components.
 - Click **Product** and select one or more products whose database components to create. You can see the list of database components for a product by clicking **Product**, clicking **print** in the Action Type list, clicking **Execute**, and then clicking the Results tab.
- Select from the Version list as follows:

If you selected...	Click...
One or more database components	Latest. The configurator will create the latest version of the database component or of all database components, respectively.
One or more products	Latest

- If you want to also create the database user and storage, follow the steps below.

- a Select the check box labeled as follows:

RDBMS	Label
Oracle	Create Tablespaces and Database User
SQL Server	Create Database and Database User
DB2	Create Tablespaces and Grant Permissions to OS User

Note: For DB2 on Linux systems, tablespaces are created for each DB2 database. If you are creating webMethods database components in more than one DB2 database, either the tablespace directory or the tablespace names must be unique for each DB2 database.

- b In the **Admin ID** field, identify the database user or operating system user that has database administrator credentials to create the database user and storage. Supply the password for the user in the **Admin Password** field.
- c The next field and your entry depend on your RDBMS.

RDBMS	Field and Entry
Oracle or DB2 for LUW	In the Tablespace Directory field, identify the directory in which to create the tablespaces.
SQL Server	In the Database field, specify the database to create.

- 4 For Oracle or DB2 for LUW, you can select the **Use Custom Tablespace Names** check box and specify custom tablespace names in the fields.
- For Oracle, the custom tablespace names will replace the defaults WEBMDATA and WEBMINDX.
 - For DB2 for LUW, the custom tablespace names will replace the defaults WEBMDATA, WEBMINDX, and WEBMBLOB. You can also specify a custom name to use for the buffer pool for webMethods products (WEBMBUFF by default).

Note: webMethods products support all tablespace configurations deployed by users.

Execute the Specified Action

- 1 If you intend to run the configurator more than once, you can set the current field values as the defaults for subsequent runs by clicking **Save Settings as Default**. You can also export field values to .xml files by clicking **Export**, then later import the values from a file by clicking **Import Configuration**. In each case, the values for the two **Password** fields are not saved.
- 2 Click **Execute**. The execution information is displayed on the **Results** tab and is written to the log file `dcc_yyyymmddHHMMss` in the `Software AG_directory\common\db\logs` directory.

Drop Database Components

- 1 Shut down all products that are connected to the database components you want to drop, and back up the database components.
- 2 Start the Database Component Configurator GUI as follows:

System	Action
Windows	On the Start menu, go to Programs > Software AG > Tools > Database Component Configurator .
UNIX	Go to <code>Software AG_directory</code> and run the command <code>dbConfigurator.sh</code> .

- 3 In the **Action** area, in the **Type** list, click the action to perform, as follows:

Value	Action
drop	Drops the database components you select in the Action area.
catalog	Lists existing database components on the Results tab.

- 4 In the **Connection** area, specify the connection for the configurator to use to connect to the RDBMS, as follows:

Field	Do this...
RDBMS	Click the RDBMS from which to drop the database components.
URL	Type the URL for the RDBMS. Sample URL formats for the DataDirect Connect JDBC 5.1 driver are displayed.
User ID and Password	Specify the database user and password to use to connect to the RDBMS.

- 5 In the **Action** area, select the database components to drop, or the products whose database components to drop.

- 6 In the **Action** area, select from the **Version** list as follows:

If you selected...	Click...
One or more database components	Latest. The configurator will create the latest version of the database component or of all database components, respectively.
One or more products	Latest

- 7 Click **Execute**. The execution information is displayed on the **Results** tab and is written to the log file `dcc_yyyymmddHHMMss` in the `Software AG_directory\common\db\logs` directory.

Drop the Storage and Revoke Database User Permissions

If you have dropped all database components in a schema, you can drop the storage and revoke the database user permissions.

- 1 Start the Database Component Configurator GUI as follows:

System	Action
Windows	On the Start menu, go to Programs > Software AG > Tools > Database Component Configurator .
UNIX	Go to <code>Software AG_directory</code> and run the command <code>dbConfigurator.sh</code> .

- 2 In the **Action Type** list, click **drop**.
- 3 In the **Action** area, click **Component** and select **All**.
- 4 In the **Connection** area, specify the connection for the configurator to use to connect to the RDBMS, as follows:

Field	Do this...
RDBMS	Click the RDBMS from which to drop the database components.
URL	Type the URL for the RDBMS. Sample URL formats for the DataDirect Connect JDBC 5.1 driver are displayed.
User ID and Password	Specify the database user and password to use to connect to the RDBMS.

- 5 Select the **Drop tablespaces and database user** check box.
- In the **Admin ID** field, identify the database user or operating system user that has database administrator credentials to drop the database user and storage. Supply the password for the database user in the **Admin password** field.
 - The next field depends on your RDBMS.

RDBMS	Fields and Entries
DB2 for LUW and Oracle	In the Tablespace directory field, identify the directory that contains the tablespaces to drop. If you specified custom tablespace names, supply those names in the Tablespaces area.
SQL Server	In the Database field, specify the database that contains the storage.

- 6 Click **Execute**. The execution information is displayed on the **Results** tab and is written to the log file `dcc_yyyymmddHHMMss` in the `Software AG_directory\common\db\logs` directory.

Use the Database Component Configurator Command Line Interface

This section explains how to use the Database Component Configurator command line interface to create or drop a database user and storage, and to create or drop database components. Each run of the configurator operates on a single schema. If database storage does not yet exist, you must create it before you create your database components.

You can use the Database Component Configurator command line interface on all operating systems that are supported by webMethods products.

Important! When you create database components in DB2 using the Database Component Configurator, the configurator creates the schema name in all uppercase letters. Since DB2 is case sensitive for schema names, you must use all uppercase letters for the schema names when you type them in URLs for JDBC connection pools, or you will experience problems.

Before dropping any database component, shut down all products that are connected to the database component.

If you have dropped all the database components from a schema, you can drop the storage and revoke the database user permissions.

Database Component Configurator Command

You can perform an action on one database component or on all database components, or on the database components for one product, using the command below. You run the command from the `Software AG_directory\common\db\bin` directory.

```
dbConfigurator.{bat|sh} {-a|--action} action  
{-d|--dbms}{oracle|sqlserver|db2luw|db2i}  
{-c|--component} db_component{-v|--version} version
```



```
{-l|--url} RDBMS_URL
{-u|--user} db_user {-p|--password} password
[{-a|--admin_user} db_admin_user {-ap|--admin_password} password]
```

Additional Parameters:

```
[-r|--runCatalog]
[{-tsdata|--tablespacefordata} data_tspace_name]
  [{-tsindex|--tablespaceforindex} index_tspace_name]
  [{-tsblob|--tablespaceforblob} BLOB_tspace_name]
  [{-b|--bufferpool} buffer_pool_name]
[-t|--tablespacedir directory]
[-n|--dbname database_name]
[-h|--help]
[-ab|--about]
[-pa|--printActions] [-pd|--printDatabase] [-pc|--printComponents]
[-pp|--printProducts] [-pe]
[{-e|--export|-i|--import} {-dir|--configdir} directory
  {-file|--configfile} file_name]
```

Parameter	Entry												
{-a --action} <i>action</i>	Action to perform.												
	<table border="1"> <thead> <tr> <th>Value</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>catalog</td> <td>Displays existing database components.</td> </tr> <tr> <td>create</td> <td>Creates <i>db_component</i> or the database components for <i>product</i>.</td> </tr> <tr> <td>drop</td> <td>Drops <i>db_component</i> or the database components for <i>product</i>.</td> </tr> <tr> <td>recreate</td> <td>Drops <i>db_component</i> or the database components for <i>product</i>, then creates <i>db_component</i> or the database components for <i>product</i>.</td> </tr> <tr> <td>checkEncoding</td> <td>Checks whether your RDBMS is Unicode-enabled and displays the answer.</td> </tr> </tbody> </table>	Value	Action	catalog	Displays existing database components.	create	Creates <i>db_component</i> or the database components for <i>product</i> .	drop	Drops <i>db_component</i> or the database components for <i>product</i> .	recreate	Drops <i>db_component</i> or the database components for <i>product</i> , then creates <i>db_component</i> or the database components for <i>product</i> .	checkEncoding	Checks whether your RDBMS is Unicode-enabled and displays the answer.
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{-d --dbms} {oracle sqlserver db2luw}	RDBMS on which to perform <i>action</i> .												
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Value	DBMS												
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sqlserver	SQL Server												
db2luw	DB2 for LUW												

Parameter	Entry						
<pre>{-c --component} db_component {-v --version} version</pre>	<p>Database component version for which to perform <i>action</i>.</p> <p>For <i>db_component</i>, you can specify one or more database component codes or names. You can see the list of database component codes and names by specifying <code>-c all</code> with the <code>print</code> action. If you want to specify multiple codes or names, use commas as separators.</p> <p>For <i>version</i>, you can specify this value:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>latest</td> <td> <p>If you specified one database component for <i>db_component</i>, perform <i>action</i> for the latest version of <i>db_component</i>.</p> <p>If you specified multiple database components or ALL for <i>db_component</i>, you must specify latest for <i>db_component_version</i>. The configurator will create the latest version of each database component.</p> </td> </tr> </tbody> </table>	Value	Description	latest	<p>If you specified one database component for <i>db_component</i>, perform <i>action</i> for the latest version of <i>db_component</i>.</p> <p>If you specified multiple database components or ALL for <i>db_component</i>, you must specify latest for <i>db_component_version</i>. The configurator will create the latest version of each database component.</p>		
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<pre>{-p --product} product {-v --version} release</pre>	<p>Product release for whose database components to perform <i>action</i>.</p> <p>For <i>product</i>, you can specify one or more product codes or names, or ALL. You can see the list of database components for a <i>product</i> by specifying this parameter with the <code>print</code> action. If you want to specify multiple codes or names, use commas as separators.</p> <p>For <i>release</i>, you can specify the values below.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>latest</td> <td>Perform <i>action</i> on the database components for the latest release of <i>product</i> or <i>products</i>.</td> </tr> <tr> <td>release</td> <td>Release of the <i>product</i> or <i>products</i> for whose database components to perform <i>action</i>. The configurator will create the correct versions of the database components for the specified release.</td> </tr> </tbody> </table>	Value	Description	latest	Perform <i>action</i> on the database components for the latest release of <i>product</i> or <i>products</i> .	release	Release of the <i>product</i> or <i>products</i> for whose database components to perform <i>action</i> . The configurator will create the correct versions of the database components for the specified release.
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release	Release of the <i>product</i> or <i>products</i> for whose database components to perform <i>action</i> . The configurator will create the correct versions of the database components for the specified release.						

Parameter	Entry								
<code>{-l --url}</code> <i>RDBMS_URL</i>	<p>URL for the RDBMS. For information about options supported by the DataDirect Connect JDBC 5.1 driver used by webMethods products, see <i>DataDirect Connect for JDBC User's Guide and Reference 5.1</i> in the <i>Software AG_directory/_documentation</i> directory or on the Software AG Documentation Web site.</p> <hr/> <p>Important! When working with database components on UNIX systems, you must enclose the URL in double quotes.</p> <hr/> <table border="1"> <thead> <tr> <th>RDBMS</th> <th>Sample Format for DataDirect Connect Driver</th> </tr> </thead> <tbody> <tr> <td>Oracle</td> <td><code>jdbc:wm:oracle://server:{1521 port};serviceName=service[;option=value]. ..</code></td> </tr> </tbody> </table> <hr/> <p>Important! For Oracle, If are going to create storage and the Data Purge database component, you must specify the <code>sysLoginRole</code> connection option on the URL (for example, <code>;sysLoginRole=sysdba</code>).</p> <hr/> <table border="1"> <tbody> <tr> <td>SQL Server</td> <td><code>jdbc:wm:sqlserver://server:{1433 port};databaseName=database[;option=value]....</code></td> </tr> <tr> <td>DB2 for Linux, UNIX, Windows</td> <td><code>jdbc:wm:db2://server:{50000 port};databaseName=database[;option=value]....</code></td> </tr> </tbody> </table> <hr/> <p>For DB2, if you are going to create database components in a schema other than the default schema for the specified database user, you must specify these connection options in the URL:</p> <pre><code>;AlternateId=schema;"InitializationString=(SET CURRENT PATH=current_path,schema)"</code></pre> <p><code>AlternateID</code> is the name of the default schema used to qualify unqualified database objects in dynamically prepared SQL statements.</p> <p>If you are creating Optimize database components (that is, Analysis and ProcessTracker), you must specify <i>schema</i> using all uppercase letters. In addition, you must specify the options <code>CreateDefaultPackage=true</code>, <code>ReplacePackage=true</code>, and <code>DynamicSections=3000</code>. These settings will affect all database components in the same schema or database.</p>	RDBMS	Sample Format for DataDirect Connect Driver	Oracle	<code>jdbc:wm:oracle://server:{1521 port};serviceName=service[;option=value]. ..</code>	SQL Server	<code>jdbc:wm:sqlserver://server:{1433 port};databaseName=database[;option=value]....</code>	DB2 for Linux, UNIX, Windows	<code>jdbc:wm:db2://server:{50000 port};databaseName=database[;option=value]....</code>
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DB2 for Linux, UNIX, Windows	<code>jdbc:wm:db2://server:{50000 port};databaseName=database[;option=value]....</code>								

Parameter	Entry										
<pre>{-u --user} db_user {-p --password} password</pre>	<p>Your entry here depends on the <i>action</i> you are performing.</p> <hr/> <p>Note: You can choose to specify this authentication information in the URL, using DataDirect options, rather than in these parameters.</p> <hr/> <table border="1"> <thead> <tr> <th>If you are...</th> <th>Specify...</th> </tr> </thead> <tbody> <tr> <td>Creating a database user and storage in Oracle or SQL Server</td> <td> <p>The database user and password to create.</p> <hr/> <p>Note: For SQL Server, the user will be created and a default schema named dbo will be assigned to that user.</p> <hr/> <p>Important! For Oracle, do not use the SYSTEM user to create the database components in the SYSTEM schema.</p> </td> </tr> <tr> <td>Creating a database user and storage in DB2 for LUW</td> <td>The OS user to which to grant permissions.</td> </tr> <tr> <td>Performing the checkEncoding action</td> <td>An existing database user that has create session and create table privileges, and that database user's password.</td> </tr> <tr> <td>Performing any other action</td> <td>An existing database user and password.</td> </tr> </tbody> </table>	If you are...	Specify...	Creating a database user and storage in Oracle or SQL Server	<p>The database user and password to create.</p> <hr/> <p>Note: For SQL Server, the user will be created and a default schema named dbo will be assigned to that user.</p> <hr/> <p>Important! For Oracle, do not use the SYSTEM user to create the database components in the SYSTEM schema.</p>	Creating a database user and storage in DB2 for LUW	The OS user to which to grant permissions.	Performing the checkEncoding action	An existing database user that has create session and create table privileges, and that database user's password.	Performing any other action	An existing database user and password.
If you are...	Specify...										
Creating a database user and storage in Oracle or SQL Server	<p>The database user and password to create.</p> <hr/> <p>Note: For SQL Server, the user will be created and a default schema named dbo will be assigned to that user.</p> <hr/> <p>Important! For Oracle, do not use the SYSTEM user to create the database components in the SYSTEM schema.</p>										
Creating a database user and storage in DB2 for LUW	The OS user to which to grant permissions.										
Performing the checkEncoding action	An existing database user that has create session and create table privileges, and that database user's password.										
Performing any other action	An existing database user and password.										
<pre>[{-au --admin_user} db_admin_user {-ap --admin_password} password]</pre>	<p>If you are going to create a database user and storage, or drop storage and revoke the database user permissions, specify the database user or operating system user and password that has the necessary database administrator credentials.</p>										
Additional Parameters											
<pre>[-r --runCatalog]</pre>	Runs the catalog action at the end of every execution.										

Parameter	Entry
<pre>[{-tsdata --tablespacefordata} data_tspace_name] [{-tsindex -- tablespaceforindex} index_tspace_name] [{-tsblob -- tablespaceforblob} BLOB_tspace_name] [{-b --bufferpool} buffer_pool_name]</pre>	<p>If you are going to create database components in Oracle and DB2 for LUW, you can specify custom tablespace names.</p> <ul style="list-style-type: none"> ■ For Oracle, the custom tablespace names will replace the defaults WEBMDATA and WEBMINDX. ■ For DB2 for LUW, the custom tablespace names will replace the defaults WEBMDATA, WEBMINDX, and WEBMBLOB. You can also specify a custom name to use for the webMethods buffer pool (WEBMBUFF by default). <hr/> <p>Note: webMethods products support all tablespace configurations deployed by users.</p> <hr/> <p>If you are going to drop storage and revoke the database user permissions for Oracle or DB2 for LUW, and you specified custom tablespace names, provide those names.</p>
<pre>[-t --tablespacedir directory]</pre>	<p>If you are going to create a database user and storage, and want to create a tablespace directory for DB2 for LUW or Oracle, provide the full path to the directory.</p> <hr/> <p>Note: For DB2 on Linux systems, tablespaces are created for each DB2 database. If you are creating webMethods database components in more than one DB2 database, either the tablespace directory or the tablespace names must be unique for each DB2 database.</p> <hr/> <p>If you are going to drop storage and revoke the database user permissions or DB2 for LUW or Oracle, identify the directory that contains the tablespaces to drop.</p>
<pre>[-n --dbname database_name]</pre>	<p>If you are going to create a database user and storage in SQL Server, name of the target database.</p> <p>If you are going to drop storage and revoke the database user permissions in SQL Server, identify the database that contains the storage.</p>
<pre>[-h --help]</pre>	<p>Lists command line interface help.</p>
<pre>[-ab --about]</pre>	<p>Lists information about the Database Component Configurator.</p>
<pre>[-pa --printActions]</pre>	<p>Lists the actions you can perform, like create or drop.</p>
<pre>[-pd --printDatabase]</pre>	<p>Lists RDBMS the configurator supports.</p>

Parameter	Entry
<code>[-pc --printComponents]</code>	Lists database components the configurator supports.
<code>[-pp --printProducts]</code>	Lists products the configurator supports.
<code>[-pe]</code>	Lists command line interface examples.
<code>{-e --export}</code> <code>{-dir --configdir}</code> <i>directory</i> <code>{-file --configfile}</code> <i>file_name</i>	Exports values for all required parameters except the password parameters to an .xml file.
<code>{-i --import}</code> <code>{-dir --configdir}</code> <i>directory</i> <code>{-file --configfile}</code> <i>file_name</i>	Imports values for all parameters from an .xml file. Note: Password parameters are not saved, so you must specify them on the command.

Examples

Important! On UNIX systems, you must enclose the RDBMS URL in your commands in double quotes.

Create the Database User and Storage

This command creates the database user and the two tablespaces (default names) for Oracle:

```
dbConfigurator.bat -a create -d oracle -c storage -v latest
-l jdbc:wm:oracle://DBserver:1521;serviceName=myservicename -au adminuser
-ap adminpass -u webmuser -p w3bypass -t tablespace_dir
```

This command creates the database user and the two tablespaces (custom names) for Oracle:

```
dbConfigurator.bat -a create -d oracle -c storage -v latest
-l jdbc:wm:oracle://DBserver:1521;serviceName=myservicename -au adminuser
-ap adminpass -u webmuser -p w3bypass -t tablespace_dir -tsdata MYDATA
-tsindex MYINDEX
```

This command creates the database and database user for SQL Server:

```
dbConfigurator.bat -a create -d sqlserver -c storage -v latest
-l jdbc:wm:sqlserver://DBserver:1433;databaseName=master -u webmuser -p w3bypass
-au sa -ap sa_password -n webmdb
```

This command creates the buffer pool and tablespaces (default names), and grants permissions for DB2:

```
dbConfigurator.bat -a create -d db2luw -c storage -v latest
-l jdbc:wm:db2://vmxpd01:50000;databaseName=am01 -u webmuser -au adminuser
-ap admin_password -t tablespace_dir
```

This command creates the buffer pool and tablespaces (custom names), and grants permissions for DB2:

```
dbConfigurator.bat -a create -d db2luw -c storage -v latest
-l jdbc:wm:db2://vmxpd01:50000;databaseName=am01 -u webmuser -au adminuser
-ap admin_password -t tablespace_dir -tsdata MYDATA -tsindex MYINDEX
-tsblob MYBLOB -b MYBUFF
```

Drop the Storage and Revoke Database User Permissions

If you drop all database components in a schema, you can drop the storage and revoke the database user permissions.

This command drops the two tablespaces (default names) for Oracle:

```
dbConfigurator.bat -a drop -d oracle -c storage -v latest
-l jdbc:wm:oracle://DBserver:1521;serviceName=myservicename -au adminuser
-ap adminpass -u webmuser -p w3bmpass -t tablespace_dir
```

This command drops the two tablespaces (custom names) for Oracle:

```
dbConfigurator.bat -a drop -d oracle -c storage -v latest
-l jdbc:wm:oracle://DBserver:1521;serviceName=myservicename -au adminuser
-ap adminpass -u webmuser -p w3bmpass -t tablespace_dir -tsdata MYDATA
-tsindex MYINDEX
```

This command drops the database for SQL Server:

```
dbConfigurator.bat -a drop -d sqlserver -c storage -v latest
-l jdbc:wm:sqlserver://DBserver:1433;databaseName=master -u webmuser
-p w3bmpass -au sa -ap sa_password -n webmdb
```

This command drops the buffer pool and tablespaces (default names), and revokes permissions for DB2:

```
dbConfigurator.bat -a drop -d db2luw -c storage -v latest
-l jdbc:wm:db2://vmxpd01:50000;databaseName=am01 -u webmuser -au adminuser
-ap admin_password -t tablespace_dir
```

This command drops the buffer pool and tablespaces (custom names), and revokes permissions for DB2:

```
dbConfigurator.bat -a drop -d db2luw -c storage -v latest
-l jdbc:wm:db2://vmxpd01:50000;databaseName=am01 -u webmuser -au adminuser
-ap admin_password -t tablespace_dir -tsdata MYDATA -tsindex MYINDEX
-tsblob MYBLOB -b MYBUFF
```

Create Database Components

This command creates the latest version of the ProcessAudit and ProcessEngine database components in Oracle:

```
dbConfigurator.bat -a create -d oracle -c processaudit,processengine -v latest -
l jdbc:wm:oracle://DBserver:1521;serviceName=myservicename
-u webmuser -p w3bmpass
```

This command recreates (drops and then creates) the latest versions of all database components in SQL Server:

```
dbConfigurator.bat -a recreate -d sqlserver -c all -v latest  
-l jdbc:wm:sqlserver://DBserver:1433;databaseName=webmdb -u webmuser -p w3bmpass
```

This command displays the database components that currently exist in DB2 for LUW:

```
dbConfigurator.bat -a catalog -d db2udb  
-l jdbc:wm:db2://DBserver:50000;databaseName=webmdb -u webmuser -p w3bmpass
```

This command creates the latest database components in DB2 when creating in **ALTSHEMA** rather than the default schema for the specified database user:

```
dbConfigurator.bat -a create -d db2luw -c all -v latest  
-l "jdbc:wm:db2://DBserver:50000;databaseName=webmdb  
;AlternateId=ALTSHEMA;InitializationString=\SET CURRENT  
PATH=current_path,ALTSHEMA\" -u webmuser -p w3bmpass
```

Drop Database Components

Before dropping, shut down all products that are connected to the database component and back up the database component.

You cannot drop the Component Tracker database component using the configurator; you must use a script. For instructions, see [“Use the Database Scripts” on page 120](#).

This command drops the latest ProcessAudit and ProcessEngine database components from Oracle:

```
dbConfigurator -a drop -d oracle -c processaudit,processengine -v latest  
-l jdbc:wm:oracle://myserver:1521;serviceName=myservicename -u webmuser  
-p w3bmpass
```

This command drops the latest versions of all database components from SQL Server:

```
dbConfigurator.bat -a drop -d sqlserver -c core -v latest  
-l jdbc:wm:sqlserver://myserver:1433;databaseName=webmdb -u webmuser -p w3bmpass
```

The command drops the latest version of the Analysis database component from DB2 for LUW:

```
dbConfigurator.bat -a drop -d db2luw -c analysis -v latest  
-l jdbc:wm:db2://DBserver:50000;databaseName=webmdb -u webmuser -p w3bmpass
```

This command drops the latest version of the Analysis database component from DB2 when dropping from **ALTSHEMA** rather than the default schema for the specified database user:

```
dbConfigurator.bat -a drop -d db2luw -c analysis -v latest  
-l jdbc:wm:db2://DBserver:50000;databaseName=webmdb;AlternateId=ALTSHEMA  
;"InitializationString=(SET CURRENT PATH=current_path,ALTSHEMA)" -u webmuser  
-p w3bmpass
```

Use the Database Scripts

This section explains how to use database scripts provided by Software AG to create storage, create a database user and grant database user permissions, drop storage and revoke database user permissions, and create or drop database components.

If database storage does not yet exist, you must create it before you create your database components.

Modify Storage Convention

By default, all database components follow this storage convention:

RDBMS	Data Storage Unit	Index Storage Unit	BLOB Storage Unit
Oracle tablespaces	WEBMDATA	WEBMINDX	WEBMDATA
SQL Server filegroups	Primary	Primary	Primary
DB2 for LUW tablespaces	WEBMDATA	WEBMINDX	WEBMBLOB

If you want to use a different storage convention when you create database components, do the following:

- 1 Go to the *Software AG_directory*\common\db\scripts directory.
- 2 Copy the creation scripts for your RDBMS to another directory.
- 3 Modify the values listed in the table above in the creation scripts.

Note: Commercial and public domain utilities provide search and replace functionality across subdirectories. webMethods products support all tablespace configurations deployed by users.

Run the Database Scripts

You run the database scripts from your database client. By default, the scripts are stored in the *Software AG_directory*\common\db\scripts directory. If you modified the storage conventions, the creation scripts are stored in the directory to which you copied them.

To determine which scripts to run, go to the *Software AG_directory*\common\db\bin directory and run the appropriate command below. The order in which the scripts are listed is the order in which you should run them. For explanations of the fields in the commands below, see [“Database Component Configurator Command” on page 112](#).

Create a Database User and Storage

To list the scripts for creating a database user and storage, run this command:

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2luw|db2i} -c storage
-v latest
```

Drop Storage and Revoke Database User Permissions

If you have dropped all database components from a schema, you can drop the database user and storage.

To list the scripts for dropping storage and revoking database user permissions, run this command:

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2|uw|db2i} -c storage -v latest
```

Create Database Components

Create the proper versions of the database components for your product (see [“Typical Development Installations”](#) on page 52).

To list the scripts for creating individual database components, or all database components, run this command:

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2|uw|db2i} -c db_component -v db_component_version
```

To list the scripts for creating the database components for a certain product, run this command:

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2|uw|db2i} -pr product -v product_release
```

Drop Database Components

Before dropping, shut down all products that are connected to the database component and back up the database component.

To list the scripts for dropping individual database components, or all database components, run this command:

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2|uw|db2i} -c db_component -v db_component_version
```

To list the scripts for dropping the database components for a certain product, run this command:

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2|uw|db2i} -pr product -v product_release
```

Connect Products to Database Components

This section explains how to define the following database connections, if you did not define them during installation, or if you want to modify the database connections you set during installation:

- From Integration Server or products it hosts to the ActiveTransfer, Archive, BusinessRules, CloudStreamsEvents, CrossReference, DocumentHistory, ISInternal, ISCoreAudit, MediatorEvents, ProcessAudit, ProcessEngine, Staging and Reporting, and TradingNetworks and TradingNetworksArchive database components.
- From Integration Server to the central user management feature in My webMethods Server. This feature allows My webMethods Server users to access Integration Server, enables Integration Server to delegate user management to My webMethods Server, and enables My webMethods Server's user interfaces to call Integration Server services.

For instructions on defining the database connections for other products, if you did not define them during installation, or if you want to modify the database connections you set during installation, see the following:

Product	See
Designer	Designer online help
My webMethods Server	<i>Administering My webMethods Server</i>
OneData	<i>Administering webMethods OneData</i>
Optimize	<i>Configuring BAM</i>
Task Engine	<i>webMethods Task Engine User's Guide</i>

Important! If you used the Database Component Configurator to install database components, and you installed the Integration Server database components and the Optimize database components in two different schemas, you will have two instances of the Process Audit Log database component. Configure Integration Server and Optimize to point to the same instance using the instructions below for Integration Server and in *Configuring BAM* for Optimize. You can then drop the other, redundant instance.

Database Connections for Integration Server and Hosted Products

You use Integration Server Administrator to connect Integration Server to database components, as follows:

- You define *JDBC database connection pools* in Integration Server Administrator that Integration Server uses to connect to database components. Each pool specifies the connection to a database server that hosts database components.
- Integration Server Administrator provides *functions* that correspond to most database components (for example, IS Core Audit Log function that corresponds to the ISCoreAudit database component, a Cross Reference function that corresponds to the CrossReference database component, and so on). You direct each function to write to its database components by pointing the function at the appropriate connection pool.

During Integration Server installation, if you chose an external RDBMS for the Integration Server database components and supplied the database connection parameters, the installer automatically did the following:

- Configured Integration Server to write to the external RDBMS.
- Created a default connection pool from the Integration Server database connection parameters you supplied.
- Pointed the Cross Reference, Distributed Locking, Document History, IS Internal, IS Core Audit Log, Process Audit Log, and Process Engine functions at that pool.

Note: If you created the MediatorEvents database component, you created it in the same schema or database as the IS Core Audit Log. Integration Server therefore writes to the MediatorEvents database component using the IS Core Audit Log function. Similarly, if you created the BusinessRules database component, you created it in the same schema or database as the Process Audit Log. Integration Server therefore writes to the BusinessRules database component using the Process Audit Log function. There is no separate function for the MediatorEvents or BusinessRules database component.

You can edit the default connection pool using the instructions in this section, or you can create separate pools and redirect individual functions to use them. At run time, Integration Server creates a separate instance of the appropriate connection pool for each database component.

You also use Integration Server Administrator to connect other products to database components, as follows:

- During Trading Networks Server installation, you supplied the database connection parameters for the TradingNetworks database component. The installer created a connection pool from those parameters and pointed the Trading Networks function at that pool. You can edit the connection using Integration Server Administrator and the instructions below.
- During ActiveTransfer Server installation, you supplied the database connection parameters for the ActiveTransfer database component. The installer created a connection pool from those parameters and pointed the ActiveTransfer function at that pool. You can edit the connection using Integration Server Administrator and the instructions below.
- If you created the CloudStreamsEvents database component, you must point that function at a connection pool.
- If you created the Archive database component, you must point that function at a connection pool.
- If you created the Staging and Reporting database components, you must point those functions at connection pools, and you must point the Simulation function at the connection pool for the Reporting database component.

- Integration Server can authenticate clients using internally-defined user and group information, or it can use the My webMethods Server central user management feature. To use the latter, and to use the single sign on feature for My webMethods Server, Integration Server must have a connection pool that points to the My webMethods Server database component, and the CentralUsers function in Integration Server must point at that connection pool.

If you installed My webMethods Server in the same directory as Integration Server, the installer created a connection pool from the My webMethods Server database parameters you supplied and pointed the CentralUsers function at that pool. If you installed My webMethods Server in a different directory from Integration Server, you must create the connection pool and point the CentralUsers function at that pool using Integration Server Administrator and the instructions below.

Define an Integration Server Connection Pool

- 1 Start Integration Server and open Integration Server Administrator.
- 2 Go to the **Settings > JDBC Pools** page.
- 3 On the **Settings > JDBC Pools** page, click **Create a new Pool Alias Definition** and complete the fields as follows:


Field	Entry
Alias Name	Name for the connection pool. The name can include any characters that are valid for a file name in your operating system.
Alias Description	Description for the pool.
Associated Driver Alias	Database driver to use.

Field	Entry
Database URL	<p>URL for the database server. Sample URL formats for the DataDirect Connect JDBC 5.1 driver are displayed.</p> <hr/> <p>Important! Use the DataDirect Connect connection option <code>MaxPooledStatements=35</code> on all database URLs except those for Trading Networks. This connection option improves performance by caching prepared statements. (Trading Networks caches its prepared statements using its own pooling mechanism).</p> <hr/> <p>Important! For DB2, if Integration Server will connect to a schema other than the default schema for the specified database user, you must specify these connection options in the URL:</p> <hr/> <pre>;AlternateId=<i>schema</i>;"InitializationString=(SET CURRENT PATH=<i>current_path</i>,<i>schema</i>)";MaxPooledStatements=35</pre> <p><code>AlternateID</code> is the name of the default schema that is used to qualify unqualified database objects in dynamically prepared SQL statements.</p>
User Id	Database user for Integration Server to use to communicate with the database.
Password	Password for the database user.
Minimum connections	<p>Minimum number of connections the pool must keep open at all times.</p> <p>If you use this pool alias for more than one function, each pool instance keeps the specified number of connections open. For example, if you specify keeping at least 3 connections open, and the IS Core Audit Log and the Document History database components both use this pool, the pool keeps a total of 6 connections open - 3 for the IS Core Audit Log pool instance and 3 for the Document History pool instance.</p> <p>If your logging volume has sudden spikes, you can improve performance by making sure the connections needed to handle the increased volume open quickly. You can minimize connection startup time during spikes by setting this value higher, so that more connections remain open at all times.</p>

Field	Entry
Maximum connections	<p>Maximum number of connections the pools can have open at one time.</p> <p>Calculate this value as part of the total possible number of connections that could be opened simultaneously by all functions and applications that write to the database. Make sure the total number does not exceed the database's connection limit. If one of the applications opens more connections than the database allows, the database will reject subsequent requests for connections from <i>any</i> application.</p> <p>To continue the previous example, if Trading Networks also writes to the database and has a pool that could open up to 5 connections, you could specify only 17 as the maximum number of connections for the current pool. The IS Core Audit Log pool instance could use up to 17 connections, and the Document History pool instance could use the remaining 5 connections.</p>
Idle Timeout	<p>Period of time, in milliseconds, the pool can keep an unused connection open. After the specified period of time, the pool closes unused connections that are not needed to satisfy the Minimum connections value.</p>

- 4 Make sure Integration Server can connect to the database by clicking **Test Connection**.
- 5 Click **Save Settings**.

Point an Integration Server Function at an Integration Server Connection Pool

- 1 In Integration Server Administrator, go to the **Settings > JDBC Pools** page.
- 2 In the **Functional Alias Definitions** area, click **Edit** in the **Edit Association** column for a function.
- 3 In the **Associated Pool Alias** list, click the pool you want the function to point to.
- 4 Click **Save Settings**. Integration Server Administrator returns to the **Settings > JDBC Pools** page.
- 5 Initialize the connection pool. To do so, in the **Functional Alias Definitions** area, click **Restart** in the **Restart Function** column for the function.
- 6 Make sure Integration Server can connect to the database. To do so, in the **Test** column for the function, test the connection by clicking .
- 7 If you created a connection pool for the My webMethods Server database component and pointed the CentralUsers function at it, go to the **Settings > Resources** page and make sure the **MWS SAML Resolver URL** field is pointing to your My webMethods Server host and port.

8 Restart Integration Server.

Drop Redundant Database Component

If you used the Database Component Configurator to install database components, and you installed the Integration Server database components and the Optimize database components in two different schemas, you will have two instances of the Process Audit Log database component. Configure Integration Server and Optimize to point to the same instance using the instructions above for Integration Server and in *Configuring BAM* for Optimize. You can then drop the other, redundant instance.

A International Operating Environments

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Overview

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 webMethods products on all supported operating systems except Mac OS X.

Designer Language Packs

By default, the language that Designer uses depends on your JRE default locale, which in turn depends on your operating system locale setting. If the operating system locale is not set to the language you want to use, you can override the setting for Designer by starting Designer with the `-nl` option. For example, open a command window and enter `eclipse.exe -nl ja_JP`.

Designer is based on the Eclipse platform and its projects. Software AG language packs do not include language packs for plug-ins provided by Eclipse projects. If you need language packs for those plug-ins, follow these steps:

- 1 Start Designer.
- 2 Go to **Help > Software Updates**, click the **Available Software** tab, and then click **Add Site**.
- 3 In the **Location** field, type `http://download.eclipse.org/technology/babel/update-site/R0.11.0/kepler` and click **OK**.

- 4 Click **Refresh**, select the language pack for the language you need, and click **Install**. Confirm the language pack to install and click **Next**.
- 5 Read the license agreement. If you accept the terms, select the check box and click **Finish**.
- 6 Restart Designer.

Extended Character Set

The Software AG Installer offers an extended character set that extends Java's `java.nio.Charset` class to support additional installable character encodings and adds more than 870 custom character encodings. The extended character set allows you to use custom character encodings such as EBCDIC and OEM character encodings with Integration Server, adapters, and services.

Configure Browsers and JDK Font

Some HTML interfaces for Software AG products detect the language setting for your browser. If you have installed language packs on your products, those interfaces try to supply the user interface, messages, and data in that language. You can indicate which of the installed languages to display in your browser as explained below. For supported browser releases, see *webMethods System Requirements*.

Browser	Action
Firefox	Go to Tools > Options > Content , click Choose , and add the language you want to use to the top of the list.
Google Chrome	Go to Settings > Show Advanced Settings > Languages , click spell-checker settings, and add the language you want to use to the top of the list.
Internet Explorer	Go to Tools > Internet Options , click Languages , and add the language you want to use to the top of the list.
Safari	Go to System Preferences > Language & Text > Language , and add the language you want to use to the top of the list.

Your Java run-time environment might require modification to display non-ASCII data. If you see hollow boxes or black squares where you would expect to see non-ASCII characters, you might need to modify your JDK's font configuration file to provide an appropriate font for displaying these characters. For example, you might install a full Unicode font, such as Arial Unicode MS, or you can install a font for a particular language. For information on modifying font configuration file, see J2SE 7.0 at the Oracle Java SE documentation Web site.

Configure the Proper Locale

If you are going to install or run your products in a locale other than U.S. English, follow the instructions below.

System	Action
Windows	<p>These instructions are for Windows 7; instructions for other Windows systems vary slightly.</p> <ol style="list-style-type: none">1 On the Start menu, go to Control Panel > Regional and Language.2 Click the Keyboards and Languages tab. If the language you want to use is not yet installed, click Install/Uninstall Languages and install the language. In the Display Language area, select the language and click OK.3 Make the display locale setting take effect by logging off Windows and then logging in again.
UNIX	<p>Set your shell to the proper locale by setting the LANG environment variable. Run the appropriate command below:</p> <ul style="list-style-type: none">■ In an sh shell: <code>LANG=<i>locale</i>; export LANG</code>■ In a csh shell: <code>setenv LANG <i>locale</i></code>

B Running in a Virtualized Environment

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Overview

This appendix explains how to install your products in Amazon Elastic Compute Cloud (EC2) and VMWare virtualized environments. The appendix assumes you are familiar with Amazon EC2 and VMWare.

If you are installing MashZone or Process Performance Manager, read the *ARIS PPM & ARIS MashZone Cloud Ready* guide before continuing with this chapter.

Running Your Products in an Amazon Elastic Compute Cloud Environment

Overview

Amazon Elastic Compute Cloud (EC2) provides a robust, infrastructure-as-a-service (IaaS) solution for provisioning virtual machines. EC2 virtual machines comprise hardware and an operating system.

You create an account with Amazon EC2 to gain access to this functionality. You then create preconfigured EC2 virtual machines, or *EC2 instances*, and install your products on the instances just as you would install on physical machines. The installed products in the virtual environment will operate just as they operate on physical hardware with a few exceptions noted in this appendix.

For information on the operating systems that are supported by your products and by Amazon EC2, see the *webMethods System Requirements* on the [Software AG Documentation Web site](#).

Configuring a DNS Server

By default, EC2 instance IP addresses are dynamic. If applications outside EC2 will need to connect to EC2 instances, or if EC2 instances will need to communicate with each other, configure a DNS server so that the EC2 instance host names can be resolved into IP addresses.

Logging In to Amazon Web Services

- 1 In an Internet browser, enter the URL `http://aws.amazon.com/ec2/`.
- 2 Create an AWS account, or sign in to your existing AWS account if you have one.
- 3 Make sure you are signed up for these services:
 - Amazon Elastic Compute Cloud (EC2)
 - Amazon Simple Storage Service (S3)
 - Amazon Cloud Watch

- Elastic Block Store (EBS).
- 4 Sign in to the AWS Management Console.
 - 5 Click the Amazon EC2 tab.

Creating a Security Group

Click **Help** in the AWS Management Console and search Documentation for instructions on creating a security group.

Ask your network or security administrator for a security group to use for your EC2 instances, or work with the administrator to set one up. A security group defines rules that specify the protocols and IP addresses to use to access EC2 instances. For your Windows EC2 instances, create a rule that specifies the protocol as RDP and the source as the public IP address for your organization's proxy server. This rule will allow machines in your network to access your Windows EC2 instances.

Note: By default, rules are configured to allow access from anywhere (source 0.0.0.0/0). Change this default to restrict access to only those computers or networks that require access to this EC2 instance. The number after the / indicates a range of addresses.

You can also let other Amazon security groups access your security group, and therefore your EC2 instances.

Creating a Key Pair

Later in this appendix, you will create EC2 instances.

For each Windows EC2 instance, you will ask Amazon to generate a Windows Administrator password. The passwords will be encrypted, and you will need a *key pair* to decrypt the passwords. You will use the passwords to connect to Windows EC2 instances.

For Linux EC2 instances, you do not need passwords. Instead, you will use key pairs to connect to instances.

Ask your network or security administrator for a key pair to use, or click **Help** in the AWS Management Console and search Documentation for instructions on creating a key pair.

In Windows, when you create the key pair, Amazon generates a .pem file that contains the private key you will need to decrypt the password. Depending on your browser settings, you might be prompted to download the file, or the file might be copied automatically to a predefined location on the local machine. Make sure you know the location of the file so you can provide it later to decrypt the password.

Creating and Launching an EC2 Instance

- 1 Create the EC2 instance from a Windows Server 2008 template, or *image*, or a Linux image, with Elastic Block Storage (EBS) boot. EBS boot provides permanent storage for the data on your EC2 instance. When you use an image with EBS boot, you can stop and start the instance, and your data is retained across sessions. If you use an image without EBS boot, you can only end a session by deleting (terminating) the instance entirely, and your data is then lost.

You can select an image using these methods:

- In the Navigation area, go to the **INSTANCES > Instances** page. Click **Launch Instance**, and then click the **Quick Start** tab. This tab lists images provided by Amazon EC2, and every image includes EBS boot. Select the image to use.
 - If the image you want is not available on the **Quick Start** tab, go to the **IMAGES > AMIs** page (AMIs stands for Amazon Machine Images). This page lists images provided by Amazon EC2 and images created by your organization. Filter the list to show only ESB images and either Windows or Linux platforms. Select the image to use and click **Launch**.
- 2 In the EC2 instance wizard, do the following:
 - a Specify the number of EC2 instances to create, and the size to use for the instances. For hardware requirements for your products, see [“Software and Hardware Support and Requirements” on page 13](#). Select no preference for availability zone. Click **Continue**.
 - b You do not need to select or modify any advanced EC2 instance options.
 - c In the list of key/value pairs, or *tags*, specify the Name tag. This tag identifies your EC2 instance in the AWS Management Console. Type the unique name to use for the instance in the **Value** field for the Name key.

Note: The Name tag identifies your EC2 instance in the AWS Management Console only. It has no relation to the EC2 instance’s machine or host name.

 - d Choose the key pair to use from the list of existing key pairs.

Note: If you just created the key pair, it might take a few minutes to appear. If the key pair is not yet present, exit the wizard and click **Launch Instance** again.

 - e Choose the security group to use from the list of existing security groups.

Note: After you launch the EC2 instance, you will not be able to change to a different security group for the instance. However, you can add, edit, or delete security group rules at any time.

 - f Click **Launch** to launch the EC2 instance.
 - 3 On the **Instances** page, wait for the status of the EC2 instance to change to `running`.

- 4 If you configured a DNS server (see [“Configuring a DNS Server” on page 134](#)), update the DNS server with the EC2 instance’s IP address.

Important! Any time you stop and start the EC2 instance, it will be assigned a new IP address, and you must update your DNS server with that new IP address.

Connecting to the Linux EC2 Instance

- 1 In Linux, open an SSH client such as PuTTY. Connect to the Linux EC2 instance and provide the key pair you obtained earlier. You are logged into the EC2 instance console as the root user.
- 2 Set up the fully qualified domain name (FQDN, or FQN) for the Linux EC2 instance as follows:
 - a Update the machine host name for the EC2 instance to an FQN.

Important! If you configured a DNS server (see [“Configuring a DNS Server” on page 134](#)), and you updated your DNS server with this EC2 instance’s IP address, the FQN for the machine host name must exactly match the entry in the DNS server.

- b If you configured a DNS server, update your DNS client configuration file to specify the DNS server.

Important! If you reboot your Linux EC2 instance, Amazon will remove the DNS setting and you will have to update the configuration again.

Connecting to the Windows EC2 Instance

- 1 In Windows, decrypt the Windows Administrator password you need to access the EC2 instance from your local machine, as follows:
 - a On the **Instances** page, right-click the row for the EC2 instance and click **Get Windows Password**. Amazon displays an encrypted Windows Administrator password.

Note: It might take as long as 20 minutes after you launch the instance for the password to become available.

- b Click **Choose** and browse to the key pair you created earlier.
- c Decrypt the password and write it down.

Note: You can change the EC2 instance password later as you would any other Windows user password.

- 2 Connect to the running Windows EC2 instance as follows:
 - a On the **Instances** page, click the EC2 instance. Copy the public DNS from the **Description** tab.
 - b Go to the remote desktop connection on your local machine and paste in the public DNS as the computer name.
 - c Connect to the running EC2 instance.

Note: If you see a message that says you cannot connect, reboot the EC2 instance and then try again to connect.

 - d Log in to the remote EC2 instance desktop as administrator, and supply the Windows Administrator password you decrypted. The EC2 instance desktop opens on the local machine.
- 3 Set up the fully qualified domain name (FQDN, or FQN) for the Windows EC2 instance as follows:
 - a On the Windows Start menu in the EC2 instance desktop, under **All Programs**, click **EC2ConfigService Settings**. Click the **General** tab and clear the **Set Computer Name** check box. Apply the change.

Note: If you do not see **EC2ConfigService Settings** in the Windows Start menu, go to the Amazon directory under **Program Files** in your file system and locate and run the EC2 configuration application.

 - b Update the machine host name for the EC2 instance to an FQN.

Important! If you configured a DNS server (see [“Configuring a DNS Server” on page 134](#)), and you updated the DNS server with this EC2 instance’s IP address, the FQN for the machine host name must exactly match the entry in the DNS server.

 - c When prompted to restart your computer, restart and then reconnect your local machine to the running EC2 instance using the instructions above.

Installing Your Products on the EC2 Instance

- 1 Open an Internet browser on the EC2 instance desktop.
- 2 Follow the instructions in *Using the Software AG Installer* to download the Software AG Installer to the EC2 instance and start the installer.

- 3 Follow the instructions in this guide (*Installing webMethods Products*) to install your products on the EC2 instance. When you connect your products to each other after installation, use DNS names to identify host machines rather than IP addresses or the public DNS name you used earlier to remotely connect to the EC2 instance.

Important! Software AG recommends that you not change the FQN for the EC2 instance after installing your products.

- 4 Register ports in the security group rules. Open ports that allow access to the installed products from other security groups and from the Internet. In most cases, only a front-end load balancer need be directly accessible to the Internet.

Clustering Your Products on EC2 Instances

You can cluster some products in Amazon EC2. You will need to configure a DNS server (see [“Configuring a DNS Server” on page 134](#)). The EC2 instances will use the DNS server to resolve their fully qualified domain names (FQDNs, or FQNs) into IP addresses through the Amazon private internal IP address. Then follow the instructions in the appropriate product documentation to configure the cluster.

You cannot cluster Optimize in Amazon EC2.

Obtaining an Elastic IP Address and Associating It with an EC2 Instance

Each EC2 instance you create has two IP addresses: Amazon’s private internal IP address, and the external IP address that Internet users will use to access the EC2 instance. By default, the IP addresses are dynamic, which means that each time the EC2 instance is stopped and restarted, the IP addresses for the EC2 instance change.

You can obtain static, or *elastic*, external IP addresses and associate them with EC2 instances. For example, if you are hosting My webMethods on an EC2 instance, you would associate an elastic IP address with the instance so users can connect to My webMethods. Conversely, if you are running your products in Amazon EC2 and a webMethods Broker is installed for the sole purpose of coordinating messaging among EC2 instances, you would typically not associate an elastic IP address with the webMethods Broker host EC2 instance.

Go to the **NETWORK & SECURITY > Elastic IPs** page, allocate a new elastic IP address, and then associate the address with an EC2 instance.

You can change the association of an elastic IP address from one EC2 instance to another. If you stop and start the associated EC2 instance from the AWS Management Console, you will have to associate the elastic IP address with the EC2 instance again. Any time you associate or re-associate an elastic IP address with an EC2 instance, you must update your DNS server with the IP address and the corresponding host name.

Maintaining and Securing EC2 Instances

For instructions on tasks such as starting, stopping, rebooting, and deleting EC2 instances; monitoring EC2 instance usage; deleting security groups or rules, and changing elastic IP address associations, click **Help** in the AWS Management Console and search the Documentation.

Secure EC2 instances as you secure other security-critical resources in your organization. For example:

- Keep up to date on security patches for OS and third-party applications.
- Use the OS firewall in addition to other security mechanisms.
- Take appropriate backups.
- Protect data stored in the virtualized environment.
- Follow best practices for applications, including:
 - Change all default passwords.
 - Use encryption on network connections as appropriate.
 - Enable and review security audit.

Running Your Products in a VMWare Virtualized Environment

Overview

With VMWare, you set up virtual machines, or *VMWare Guest OSs*. You can then install your products on the VMWare Guest OSs. You can also create clusters or your products on the VMWare Guest OSs.

For information on the operating systems supported by your products and by VMWare, see the *webMethods System Requirements* on the [Software AG Documentation Web site](#).

Configuring a DNS Server

Configure a DNS server so that your VMWare Guest OS host names can be resolved into IP addresses.

Setting Up a VMWare Guest OS

Ask your VMWare administrator to set up a VMWare Guest OS. This includes installing VMWare virtual infrastructure and installing VMWare tools and drivers on the Guest OS.

Connecting to the VMWare Guest OS

- 1 Ask your VMWare administrator for the IP address or DNS name for the VMWare Guest OS.
- 2 Connect remotely to the VMWare Guest OS and enter the IP address or DNS name for the VMWare Guest OS machine.
- 3 Verify that the machine host name for the VMWare Guest OS is a fully qualified domain name (FQDN, or FQN).
- 4 To verify your setup, run the command `nslookup FQN` (for example, `nslookup mws.softwareag.com`). If the command does not return a valid IP address, work with your DNS administrator to set up the DNS server correctly ([“Configuring a DNS Server”](#) on page 140).

Installing Your Products on the VMWare Guest OS

- 1 Open an Internet browser on the VMWare Guest OS.
- 2 Follow the instructions in *Using the Software AG Installer* to download the Software AG Installer to the VMWare Guest OS.
- 3 Follow the instructions in this guide (*Installing webMethods Products*) to start the installer and install your products on the VMWare Guest OS.

Important! Software AG recommends that you not change the machine host name for the VMWare Guest OS after installing your products.

Clustering Your Products on VMWare Guest OSs

If you want to create a cluster of a certain product on VMWare Guest OSs, use the instructions in this appendix to create as many VMWare Guest OSs as you need and to install the product on each VMWare Guest OS. Then follow the instructions in the appropriate product documentation to configure the cluster.

Securing VMWare Guest OSs

Maintain VMWare Guest OSs as you maintain other security-critical resources in your organization. For example:

- Keep up to date on security patches for OS and third-party applications.
- Use the OS firewall in addition to other security mechanisms.
- Take appropriate backups.
- Protect data stored in the virtualized environment.
- Follow best practices for applications, including:
 - Change all default passwords.
 - Use encryption on network connections as appropriate.

- Enable and review security audit.